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Poverty, Food Security and Agricultural Trends in Southern Africa

Pius Chilonda, Charles Machethe and Isaac Minde

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/Southern Africa/agricultural trends/ poverty/food security/trends/investments/public agricultural spending/

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Abbreviations and Acronyms

AfDB	African Development Bank
CAADP	Comprehensive Africa Agriculture Development Programme
COMESA	Common Market for Eastern and Southern Africa
FAO	Food and Agriculture Organization of the United Nations
FND	Fifth National Development Plan (Zambia)
FRA	Food Reserve Agency (Zambia)
FSP	Fertiliser Support Programme (Zambia)
FTA	Free Trade Area
GDP	gross domestic product
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
IFAD	International Fund for Agricultural Development
MACO	Ministry of Agriculture and Cooperatives (Zambia)
MDGs	Millennium Development Goals
MTEF	Medium Term Expenditure Framework
NCZ	Nitrogen Chemicals of Zambia
NEPAD	New Partnership for Africa's Development
PE	personnel emoluments
PIN	agricultural production indices
PRP	poverty reduction programme
RDC	recurrent departmental charge
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern African Development Community
SSA	sub-Saharan Africa
SSFMI	small-scale farmer-managed irrigation
UNCTAD	United Nations Convention on Trade and Development

Abstract

This paper presents trends in indicators of poverty, food security and agricultural growth in the Southern African Development Community (SADC) region. It does so to clarify the challenges and opportunities for achieving the targeted 6% agricultural growth rate and the first millennium development goal. Using data from commonly available datasets such as FAOSTAT and World Development Indicators the paper also gives baseline statistics for poverty, food security and agricultural growth in the region.

There is evidence to show that broad-based agricultural development is an effective means of reducing poverty and accelerating economic growth. Dealing with poverty and hunger in much of the developing world means optimising the opportunities that agriculture holds for the majority of the poor.

Agriculture has the potential to contribute to equitable economic growth in SADC – a region in which most inhabitants rely on agriculture directly or indirectly as their main source of livelihood. It remains the primary source of subsistence, employment and income for 61%, or 142 million, of the region's total population of 232 million. Agriculture accounts for close to 8% of the region's gross domestic product (GDP). Despite the importance of the sector in SADC's economy, agricultural growth rates have been both low and highly variable across the region averaging only 2.6% per annum in the last decade. Average growth rates in the sector have been similar to demographic growth rates of 2.4% over the same period.

Of the numerous explanations for the sector's poor performance the most significant are insufficient investment in agriculture, poor access to agricultural inputs (especially fertilisers and improved seed) and to markets, and low levels of technology development and dissemination. These factors have resulted in limited growth in the average yields of key crops and in low labour productivity. Other factors include adverse climatic conditions and HIV/AIDS, both of which threaten the livelihood of farming households.

This situation calls for strengthening and transforming agriculture in the region so that it stimulates much needed economic growth and contributes measurably to poverty reduction. Increasing food production will help ensure that food prices remain low creating a conducive environment for the development of a broader commercial economy. In addition, there are bright prospects for expanded commercial production of a wide range of high value agricultural products. Moves towards regional integration present further opportunities for SADC countries. They can take advantage of regional growth dynamics to improve agricultural performance thereby generating mutual benefits across countries.

Therefore, the agricultural sector in the region faces three strategic challenges.

- The need to achieve an average annual agricultural growth rate of at least 6%, targeted by CAADP as necessary for attaining overall economic growth, poverty reduction and food security (AU/NEPAD, 2003).

- The need to enhance agriculture's contribution to the achievement of the first millennium development goal of halving poverty and hunger by 2015.
- The need to identify optimal policy and investment alternatives that will yield the highest payoffs, given that countries in the region have committed themselves to increase national budgetary allocation to the agricultural sector to 10%.

SADC Heads of State have recognised the importance of agriculture by endorsing the CAADP (AU/NEPAD, 2003). Furthermore, the SADC Regional Indicative Strategic Development Plan (RISDP) speaks to the need for accelerated agricultural growth in order for the sector to contribute to broader economic growth and poverty reduction in the region.

The economy of the region has been growing rather steadily but agricultural productivity has remained relatively flat, indicating the sector's dismal contribution to regional economic growth relative to other sectors (Figure 2).

At 7.3%, the agricultural sector is the smallest contributor to regional GDP behind services about 51%; the industrial sector at about 28.6% and manufacturing at about 13.5% in 2005. The greater GDP shares of the services and industrial sectors indicate the growing importance of these sectors as sources of growth, while the low contribution of agriculture to GDP, the sector which supports the majority of the population, indicates that the potential of this sector to contribute to economic growth and poverty reduction has not yet been realised.

It is noteworthy, however, that although agriculture's contribution to GDP in the region is very low, especially when compared to other developing countries, it rises to 23% if the middle income countries (Botswana, Namibia and South Africa) are excluded.

Agriculture is less important for the region's middle-income countries as a group – contributing only 3% of total GDP in those countries. In the low-income countries it accounts for 33% of total GDP. This proportion is above the average share for all low-income countries in sub-Saharan Africa outside the southern African region. The low-income countries in which agriculture has the highest share of GDP are the Democratic Republic of Congo (46%), Malawi (35%) and Tanzania (45%).

Net agricultural production more than doubled during 1960-2005, increasing from about US$10,000 million to more than US$20,000 million. However, net per capita agricultural production decreased by about 40% during this period. This suggests that agricultural production has not kept pace with population growth in the region. The decline in per capita agricultural production is attributable to among other factors the rapidly growing population in the face of low agricultural productivity.

The agricultural sector in SADC is dominated by crop production, which account for 65% of total agricultural revenue. However, crop production's share of value in the sector has been declining over the years as livestock production has increased its share. The largest contributors to agricultural revenue are maize, fruits, beef, roots, tubers and milk. The increasing importance of livestock as a source of agricultural revenue implies that agricultural growth in the region will largely depend on the synergy between the crop and livestock sub-sectors combined with enhancing their respective productivity.

The value added per worker in agriculture is a proxy for labour productivity and is estimated at US$851 per annum for the SADC region. This is 30 times lower than the value added per worker in developed countries estimated at US$25,372 per annum. While the agricultural output per worker has been increasing in the developed countries, in the southern African region it has only increased marginally off a low base. The need to increase agricultural productivity is greatest in the low-income countries in the region. Their agricultural value added per agricultural worker is only US$230, compared to US$1,681 among the middle-income countries in the region.

The challenges in stimulating agricultural growth lie in stabilising the highly variable agriculture growth rates and subsequently reaching and sustaining the 6% growth rates targeted under the CAADP. The current average agricultural growth rate in the SADC region is only 2.6% and the region needs to more than double this rate if the sector is to contribute significantly to economic growth and poverty reduction.

Among other things, this calls for increased public and private investment in the agriculture sector. Such investment needs to be directed into priority areas if agricultural growth is to be accelerated. This is particularly important given that countries in the region have committed themselves to increase budgetary allocation to at least 10% of their national budgets by 2008 under the Maputo Declaration. It is worth noting that even with a modest increase in investment in smallholder-led and diversified agricultural development per capita incomes will rise markedly. This will contribute to alleviating poverty and to achieving major advances towards food security. Increased investments in agriculture can also provide an engine for broad based and equitable growth with positive spill over effects on the poorest and most vulnerable. However, it is essential to direct these investments into priority areas, especially into growth enhancing investments, if agricultural growth is to be accelerated as countries increase their budget allocations to the agriculture sector.

Poverty, food security and agricultural trends in Southern Africa

Pius Chilonda, Charles Machethe and Isaac Minde

Overview

The evidence is quite clear that broad-based agricultural development provides an effective means for reducing poverty and accelerating economic growth (FAO/World Bank, 2001). Small farmers produce much of the developing world's agricultural output and yet are generally much poorer than the rest of the population in these countries. For the foreseeable future, therefore, dealing with poverty and hunger in much of the developing world means confronting the problems that small farmers and their families face in their daily struggle for survival. To be effective investment priorities and policies must take into account the immense diversity of investment opportunities and problems facing farmers.

Agriculture remains the key driving force for economic development in the Southern African Development Community (SADC) region – a region in which most inhabitants rely on agriculture directly or indirectly as their main source of livelihood. Agriculture in the SADC region is the primary source of subsistence, employment and incomes for 61% (or 142 million) of the region's total population of 232 million. It accounts for close to 8% of the region's gross domestic product (GDP). However, despite the importance of agriculture in SADC's economy, agriculture growth rates have been low and highly variable across the region, averaging only 2.6% per annum in the last decade (Figure 1). The average growth rates in the sector have been almost the same as population growth rates of 2.4% over the same period (World Bank, 2006). This explains why the region has been experiencing low per capita growth in agricultural production.

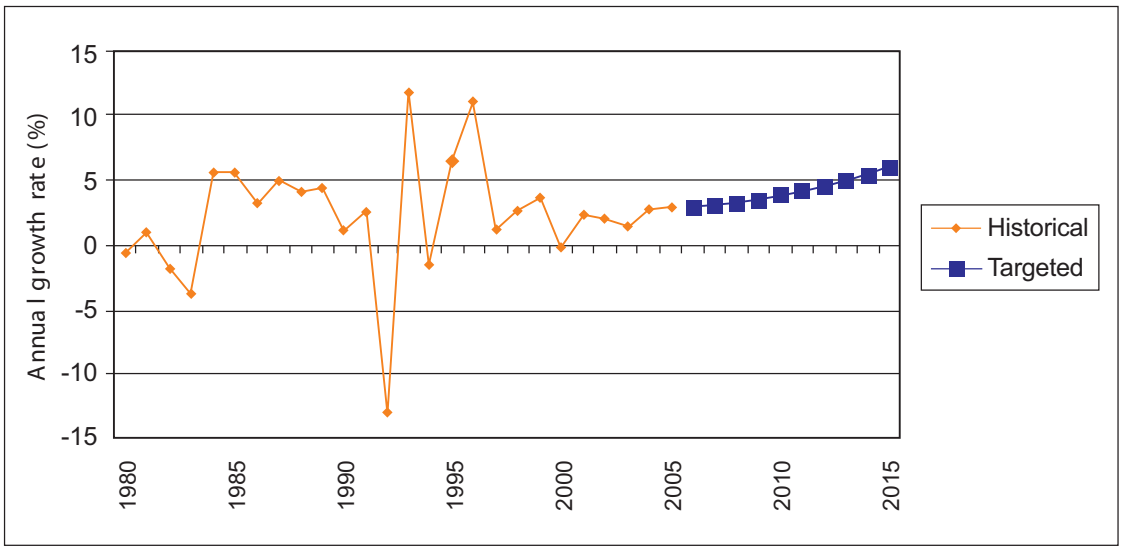
Numerous explanations have been provided for the poor performance of the agricultural sector in the region, but the factors considered to have contributed most to the low growth rates include insufficient investment in agriculture, inadequate development of markets for agricultural commodities, credit and inputs (especially fertilisers and improved seed) and low levels of technology development and dissemination. These have resulted in limited growth in the average yields of key crops and low labour productivity. Other factors that have contributed to the low growth rates include adverse climatic conditions and HIV/AIDS, both of which threaten the livelihood of farming households.

This situation calls for strengthening and transforming agriculture in the region so that it stimulates much needed economic growth. Increasing food crop production will help ensure that food prices remain low, creating a conducive environment for the development of a broader commercial economy. In addition, there are bright prospects for expanded commercial production of a wide range of high value agricultural products. The move towards regional integration further presents opportunities for SADC countries to take advantage of regional growth dynamics thereby generating mutual benefits across countries. SADC Heads of State have recognised the importance of agriculture, by endorsing the Comprehensive Africa Agriculture Development Programme (CAADP) (AU/NEPAD, 2003).

The CAADP's objective is to improve the 'productivity of agriculture to attain an average annual growth rate of 6% especially focusing on small-scale farmers' (AU/NEPAD, 2003). In a related and complementary development, countries in the region have committed themselves to increasing

investments in the agricultural sector to at least 10% of their national budgets by the year 2008. SADC countries have in addition, committed themselves to achieving the first millennium development goal (MDG1) of halving the proportion of people living below US$1 a day and the proportion of people who suffer from hunger by 2015 (SADC, 2006).

Figure 1 Agricultural growth rates in the SADC region



Source: World Bank (2006)

For CAADP and SADC to be able to attain the set growth targets it is imperative that there is adequate knowledge and understanding of where the region is at the moment, where it is coming from and where it is headed in future with respect to key agricultural indicators. This paper attempts to comprehensively review the status and trends of key indicators in the agricultural economy at national and regional levels. An understanding of how the agricultural economy has performed overtime is a useful tool in planning, setting realistic targets and making major investment decisions in the sector.

Agricultural trends analysis is critical for a multi-institutional and multidisciplinary range of stakeholders including policy makers, politicians, researchers, civil society, donors, economic analysts and decision makers in the regional economic and political integration bodies. Understanding agricultural trends will provide a reference point and basis for informed debates and dialogue about the performance of agriculture in the region. Quite often, discussions about policy on agricultural technology around the region, for example, suffer from inadequate knowledge and information about what is happening in the region and the consequences of alternative policy decisions.

In addition, understanding the key trends will provide insights and explanations to questions such as 'why are poverty levels so high in the SADC countries'. For example, continued low investment in the agricultural sector, which is the source of livelihood for over 60% of the region's population, implies that achieving substantial growth in this sector will continue to be elusive. In general, agricultural trends analysis provides a rough indication of what growth pattern or improvement could be expected from total investment in a particular sub-sector.

This paper therefore, presents trends in indicators of poverty, food security and agricultural growth in the SADC region to clarify the challenges and opportunities for achieving the targeted 6% agricultural growth rate (Figure 1) and the first millennium development goal. Using data from commonly available datasets such as FAOSTAT (FAO, 2006a) and World Development Indicators (World Bank, 2006), the paper also provides baseline statistics for poverty, food security and agricultural growth trends in the region.

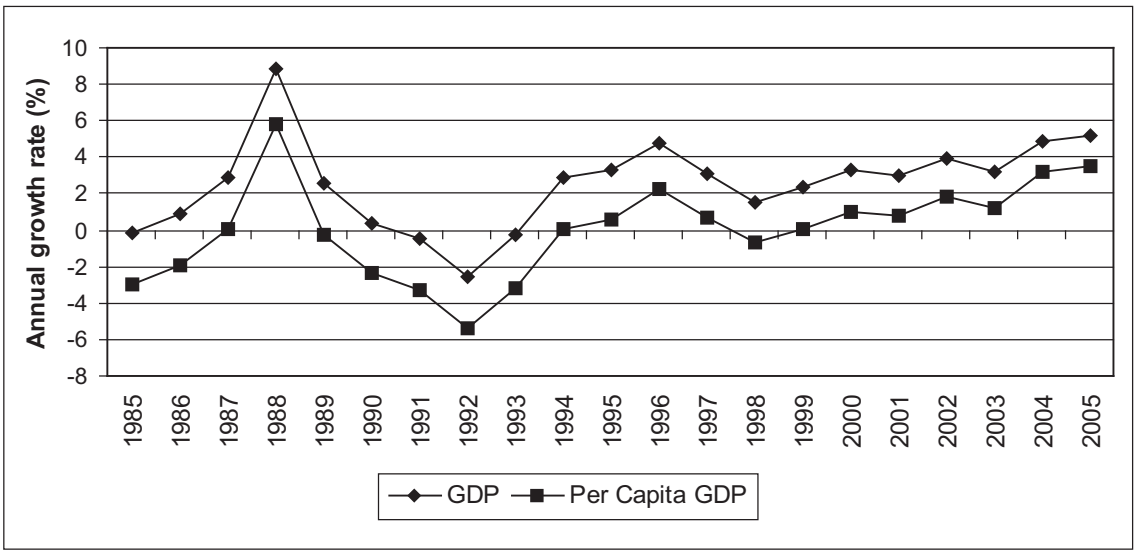
The economic context

Currently Africa, as a whole, is far from achieving the two targets constituting the first MDG: halving both the proportion of people living below $1 a day and the proportion of people who suffer from hunger by 2015. To meet the first MDG target Africa must achieve an annual economic growth rate of 7% (AfDB, 2003). As a whole Africa is currently growing at about 3% and if this trend continues projections indicate that 42.3% of the population will remain in poverty by 2015, as opposed to the targeted 23.7% (World Bank, 2006). Considering that agriculture is the primary source of livelihood for approximately 65% of Africans, contributes between 30 and 40% of Africa's GDP and accounts for almost 60% of Africa's export income, reducing these high levels of poverty and hunger in Africa will require greater agricultural and rural development (IFAD, 2003).

In 2005, the combined GDP of the SADC region stood at more than US$232 billion dollars while the average per capita GDP was approximately US$965. According to the World Bank classification, low-income countries have GDP per capita of less than US$875, whereas middle-income countries have a GDP per capita income higher than US$875, but less than US$3,465 per annum (World Bank, 2006). Using per capita income as a proxy for the level of development, the 14 SADC countries can be grouped as follows: low-income countries Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe; and middle-income countries Angola, Namibia, Swaziland, Botswana, Mauritius, and South Africa. The economies of countries in the region vary in terms of their size and structure, but the combined GDP for the region has been growing, largely driven by the dominance of the South African economy. South Africa's share in regional GDP is about 69%. The low-income countries contribute only 17.4% to the region's GDP. The six middle-income countries, as a group, account for 82.6% of the regional GDP.

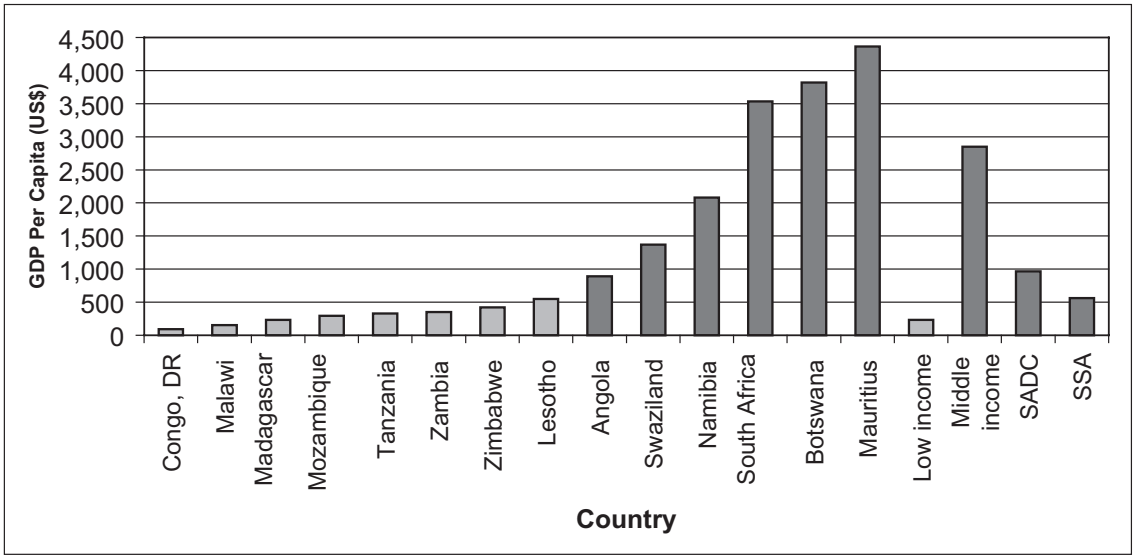
Figure 2 presents trends in GDP and per capita income for the region, while Figure 3 presents the per capita incomes. Both the region's GDP and per capita incomes have shown upward trends in the early 1990s indicating a positive outlook for the overall economy of the region. In the last decade, some countries in the SADC, notably Angola, Mozambique and Tanzania have achieved high annual GDP growth rates, whereas the Democratic Republic of Congo and Zimbabwe have achieved zero and negative growth rates respectively. The average per capita income of $965 in 2005 for the region remains above the average per capita income of US$316 for sub-Saharan Africa. This is because of the higher per capita income in middle-income countries in the region of US$2,851. However, average per capita income (US$234) for the low-income countries in the region is less than that for the rest of sub-Saharan Africa as a whole. This low per capita income is largely due to very low per capita incomes in the Democratic Republic of Congo.

Figure 2: Trends in annual GDP and GDP per capita growth rates in the SADC region



Source: World Bank (2006)

Figure 3: GDP per capita in SADC countries (constant US$, year 2000) in 2005



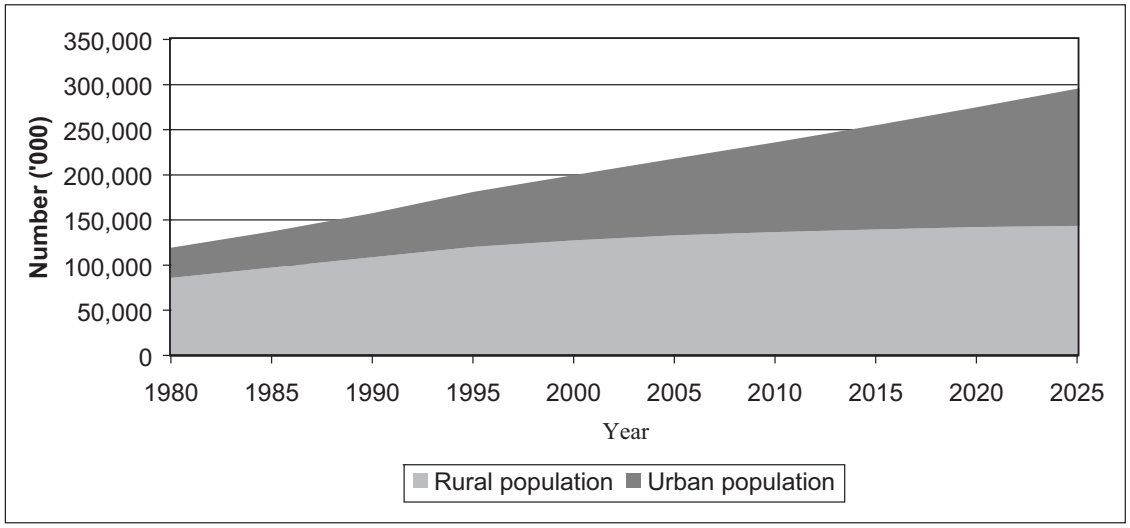
Source: World Bank (2006)

Human demographics and poverty

Population: Rural and urban poverty

The SADC region has a total population of 232 million. The region's population is growing at a rate of 2.4% per annum. About 61% of the population lives in rural areas and is engaged in agriculture, directly or indirectly, as the main source of livelihood. On one hand, the middle-income countries account for 82.6% of the region's total GDP, while they account for only 28.1% of the population. On the other hand, the low-income countries account for 71.9% of the region's population and only 15.1% of the total economic output of the region. Like much of sub-Saharan Africa, the region is rapidly urbanising. The largest proportion of the population, about 67%, in the low-income countries is still rural based whereas, 54% of the population in the middle-income countries resides in the urban areas (FAO, 2006a). Among the low-income countries Lesotho, Madagascar and Malawi have the highest proportion of their populations based in rural areas. Projections indicate that the population in these countries will still be predominantly rural in the next decade. However, projections by FAO (2006a) indicate that by the year 2025 about 50% of the population in the majority of the SADC countries will be residing in urban areas (Figure 4).

Figure 4: Trends in rural and urban populations in the SADC region

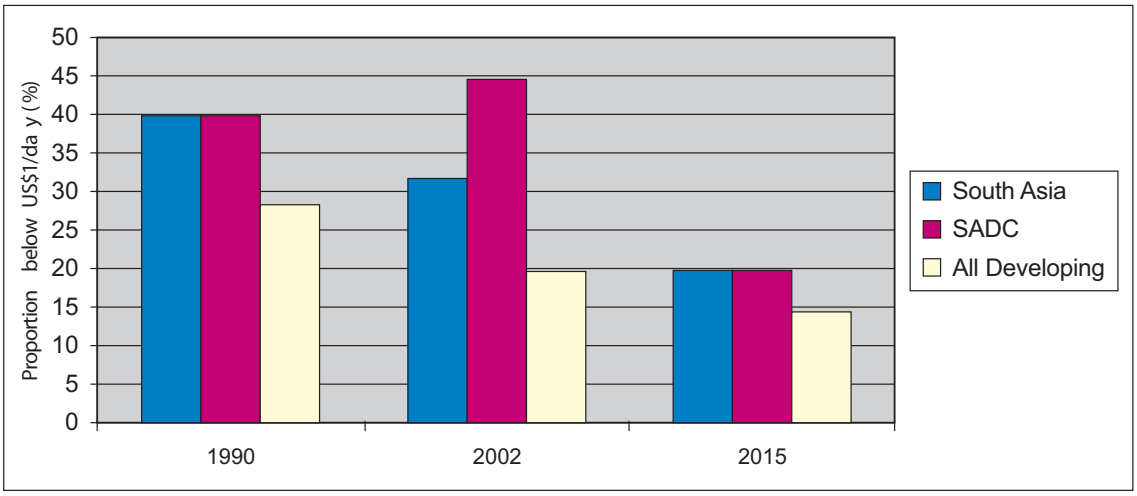


Source: FAO (2006a)

If business continues as usual, the region, like the rest of sub-Saharan Africa, is unlikely to meet the twin MDG1 targets of halving the proportion of people living below US$1 a day and halving the proportion of people who suffer from hunger by 2015. The region as a whole has made limited progress in reducing poverty when compared to other developing regions of the world (Figure 5) and poverty remains pervasive with amongst the highest incidences in the world (World Bank, 2006). About 40% (or 86 million) of the region's population of about 232 million live in extreme poverty mostly in the rural areas. There is a wide variation in progress towards poverty reduction among the 14 SADC countries (Table 1).

While poverty levels have reduced marginally in some countries, they have increased in the last decade in countries such as the Democratic Republic of Congo, Zambia and Zimbabwe. In virtually all the countries in southern Africa poverty rates in rural areas are higher than both the urban and national poverty rates. Countries with poverty rates higher than 50% include Malawi, Madagascar, Mozambique, Tanzania, Zambia and Zimbabwe. Agriculture, therefore, remains essential to lift the majority of both the rural poor (who are mainly farmers, labour sellers, traders and so on) and urban dwellers in southern Africa out of poverty.

Figure 5: Progress towards achieving the millennium development goal on poverty



Source: SADC (2006)

Table 1: Poverty rates in southern Africa

Countries	National Poverty Rate (%)		Dollar a Day Poverty Rate (%)	
			1990-96	2000-2006
Angola	…		…	68*
Botswana	…	37.4 (2001)	23.5	…
DRC	…	83.6 (2001)	…	…
Lesotho	49 (1993)	68 (1999)	36.4	39.05
Madagascar	73.3 (1997)	71.3 (1999)	42.56	61.03
Malawi	54 (1990)	65.3 (1998)	56.64	49.73
Mauritius	…	…		9.7**
Mozambique	69 (1996/97)***	54.1 (2002/3)***	37.9	33.71
Namibia	38 (1999)****	28 (2006)****	35	32.83
South Africa	23.7 (1993)	57 (2001)*****	7.85	10.71
Swaziland	40 (1995)	…	11.87	8.46
Tanzania	41.6 (1993)	35.7 (2000/01)	51.1	57.8
Zambia	69.2(1996)	72.9 (1998)	56.63	75.8
Zimbabwe	25.8 (1990/91)	34.9 (1995/96)	56.1	58.26

Sources: World Bank (2000-07)

*CHR Michelsen Institute Report (2006)

**United Nation Report- Mauritius, (2005)

***Republique of Mozambique (2004)

****National Planning Commission, Namibia (2007)

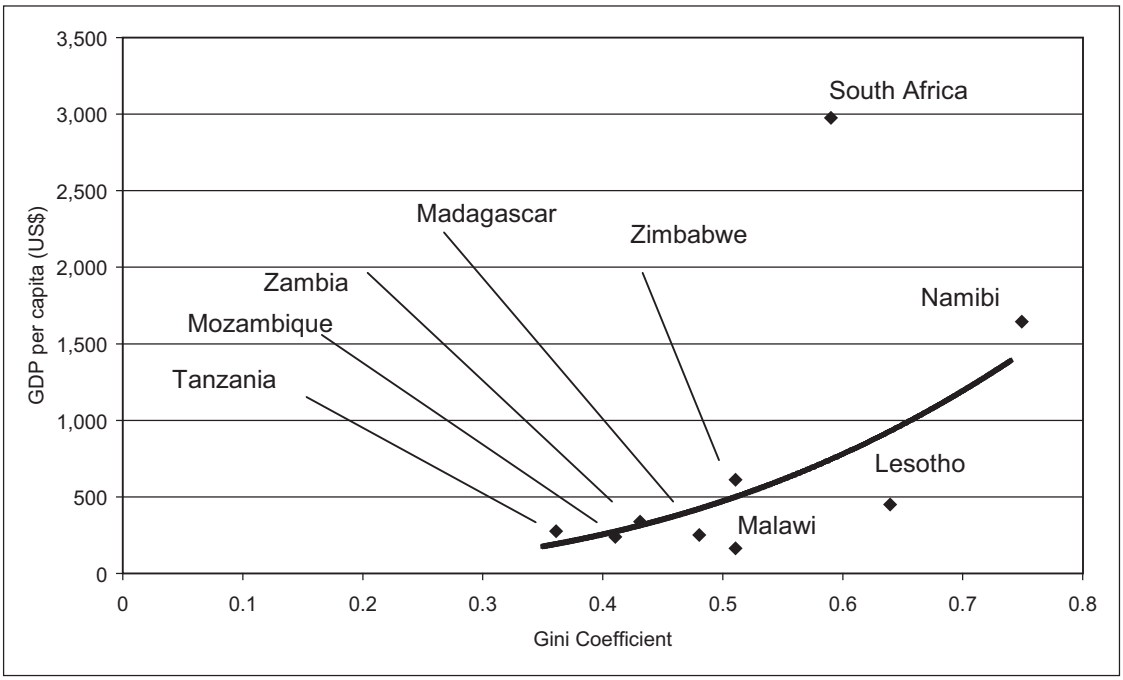
*****Human Science Research Council of South Africa (2004)

Inequality: The Gini coefficient

The overall level of inequality in a country, region, or population group and, more generally, the distribution of consumption and income are also important dimensions of welfare for the people concerned (Coudouel, Hentschel and Wodon, 2002). Most poverty measures are based on the average level of income or consumption in a country and focus on the situation of those individuals or households receiving the lowest levels (Coudouel et al., 2002). Inequality is a broader concept than poverty that looks at the distribution of income over the entire population, not only below a certain poverty line.

The Gini coefficient is one of the most commonly used measures of inequality with higher values indicating greater inequality in the distribution of income. The Gini coefficient measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution indicated by 0.0. Gini coefficients for selected SADC countries are presented in Figure 6. Namibia and South Africa have Gini coefficients higher than 0.5, indicating a relatively high-income inequality against a backdrop of relatively high per capita GDP. Among the low-income countries, Lesotho has the highest income inequality.

Figure 6: Gini coefficients versus GDP per capita in selected southern Africa countries



Source: World Bank (2006)

Health and education levels: life expectancy, literacy rates, infant mortality and child malnutrition

The poverty rate is a monetary indicator of poverty and does not take into account non-monetary dimensions of poverty and human well-being, addressed by indicators such as life expectancy, the infant mortality rate and the literacy rate.

The average life expectancy in the region has declined from about 50 years during the period 1970-1990 to 44 years in 2004. This is below the average for the developing world but equal to the average for sub-Saharan Africa. This decline is largely attributable to the disproportionately high prevalence of HIV/AIDS and malaria, and the low calorific intake in the region. Southern Africa region is the most affected by HIV/AIDS in sub-Saharan Africa (UNAIDS, 2006; Shapouri and Rosen, 2001). An analysis of national trends in life expectancy for SADC countries shows that, with the exception of Mauritius, all the other countries have experienced a downward trend in life expectancy since 1990. With regard to education, the average literacy rate in the region rose from 60% in 1990 to approximately 70% in 2004. This is higher than the average literacy rate for all developing countries. The upward trend in the literacy rate suggests increased commitment in the SADC countries to investing in human capital.

Two of the most commonly used indicators of the health dimension of human well-being are the infant mortality rate and the prevalence of malnutrition. The infant mortality rate in the region has been declining since the 1970s reaching about 147 deaths per 1000 births in 2004. Although the infant mortality rate for the SADC region is lower than that for sub-Saharan Africa as a whole, it is higher than the rate for the developing world as a whole. The downward trend in the infant mortality rate in the region may be attributed to the progressive expansion of basic health and sanitation facilities.

The prevalence of child malnutrition in the region decreased by 7% in the period 1992-2000. In 2000, the proportion of underweight children was approximately 20%, which is lower than the proportion for the developing world as a whole (Cohen, 2006). The decline in child malnutrition experienced in the region since the 1990s may be attributed to improved basic health and sanitation facilities coupled with improved education among females.

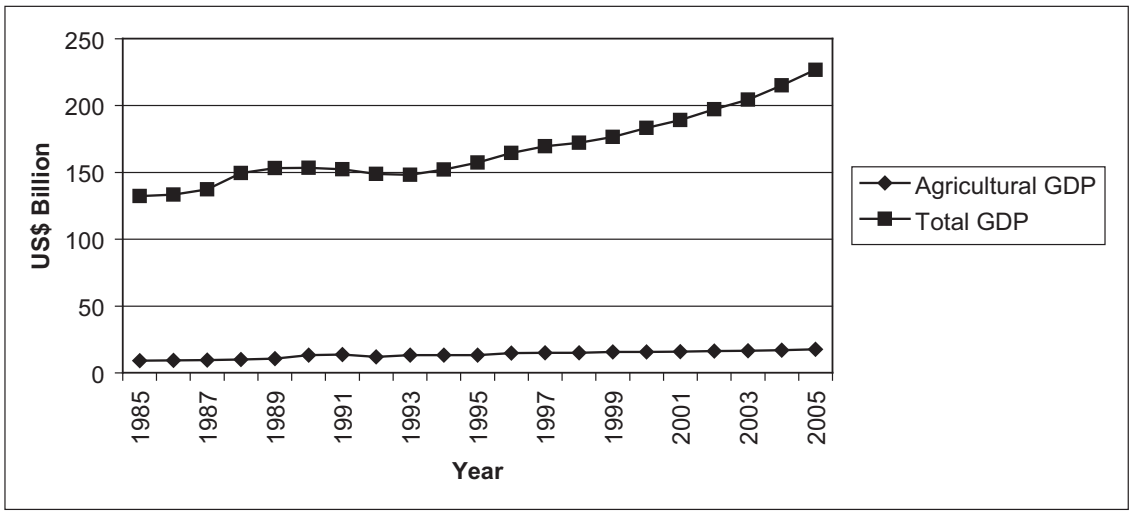
Agriculture's role in the SADC region

Share of agriculture in overall GDP

The agricultural sector is the main source of livelihood for the majority of the population in the region, although it only contributes 7.3% to the region's GDP in 2005. As indicated in Figure 1, the annual agricultural growth rate for the region as a whole has averaged only 2.6% in the last decade, which is much lower than the target 6% average annual growth rate stipulated by the CAADP. Growth in the agricultural sector would need to increase substantially to keep pace with population growth rate and contribute to economic growth and poverty reduction.

Figure 7 presents trends in total and agricultural GDP in the region. The economy of the region has been growing rather steadily. However, the agricultural GDP has remained relatively flat, indicating that the agricultural sector has contributed little to regional economic growth relative to other sectors. The agricultural sector is the smallest contributor to the regional GDP, while the services sector is the largest contributor at 51%. The industrial sector is the second largest contributor at 28.6% and the largest contributor to the national GDP in Angola, Botswana, Lesotho and Swaziland. The manufacturing sector contributed 13.5% to the regional GDP in 2005. The growing GDP shares of the industry and services sectors in the region indicate the increasing importance of these sectors as sources of growth, while the potential for the agricultural sector to contribute to economic growth, and subsequently to poverty reduction, is yet to be realised.

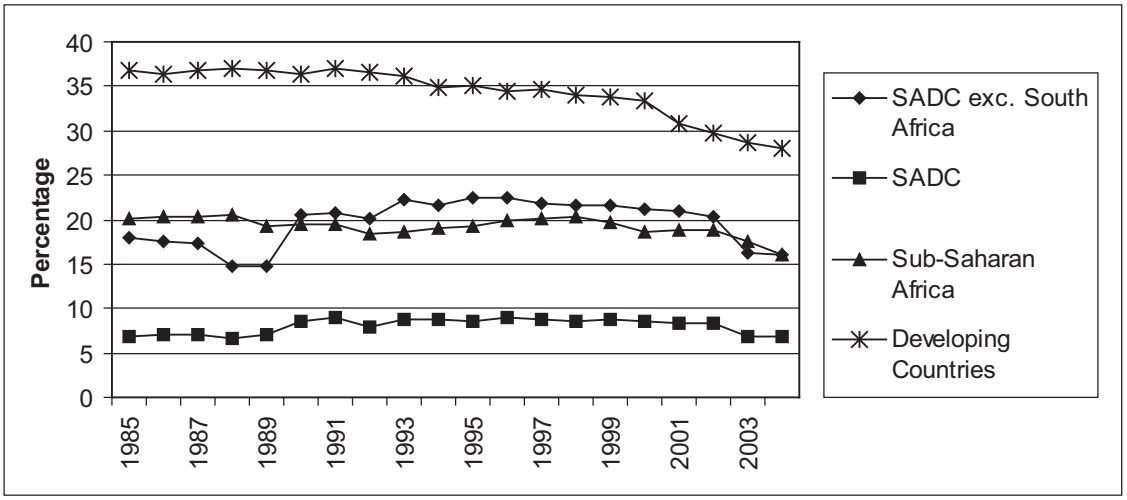
Figure 7: Trends in share of agriculture in total GDP in the SADC region



Source: World Bank (2006)

The contribution of agriculture to GDP in the region is among the lowest when compared to other developing countries (Figure 8). However, it should be noted that the agricultural sector's contribution to regional GDP of only 8% rises to 23% if Botswana, Namibia and South Africa are excluded. The theoretical and empirical literature suggests that the role of agriculture in an economy is closely related to a country's stage of development (Rostow, 1960). Because of this, agriculture is less important for the region's middle-income countries as a group. The agricultural sector for the middle-income countries in the region accounts for only 3% of total GDP. It is relatively more important in the low-income countries where it accounts for 33 % of total GDP. This proportion is above the average share for all low-income countries in sub-Saharan Africa excluding southern Africa. The low-income countries with the highest agricultural GDP share are the Democratic Republic of Congo (46%), Malawi (35%) and Tanzania (45%).

Figure 8: Trends in the proportion of agriculture in total gross domestic product in the SADC region

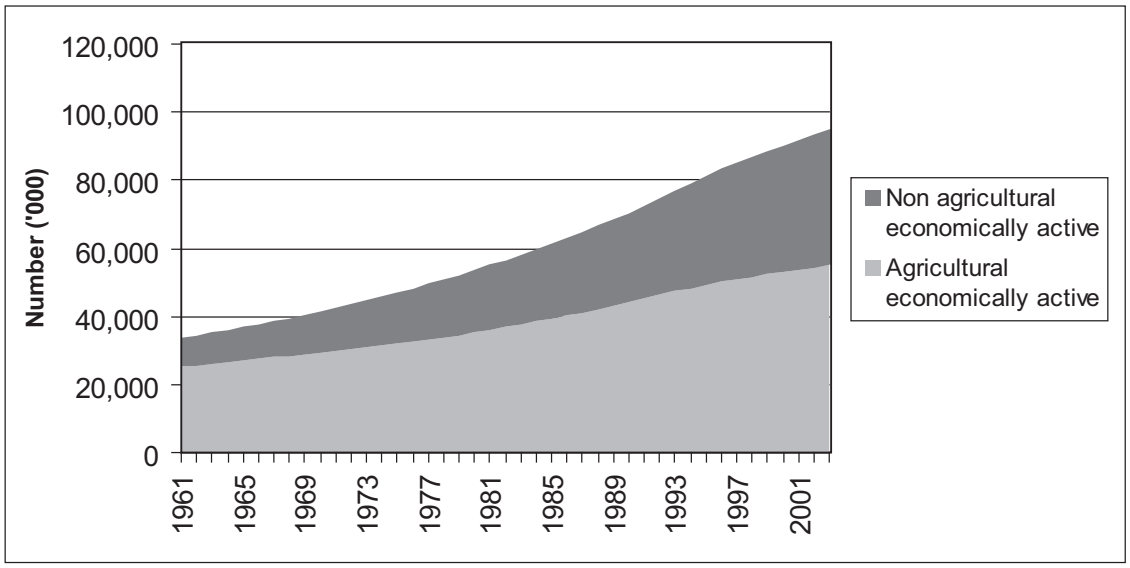


Source: World Bank (2006)

Contribution of agriculture to employment

Agriculture remains important for employment creation in the region despite a decrease in the share of the sector in employment generation over the last three decades (Figure 9). According to FAO (2006a), 57% of the population of the region (or 132 million people) are classified as agricultural, meaning that they are actively involved in agriculture and depend on it for their livelihoods. In the low-income countries the agricultural population averages 69%, while it is much less in the middle-income countries where it averages 27%. Agriculture is still the main source of employment for low-income countries such as Malawi, Madagascar, Mozambique, Tanzania, Zambia and Zimbabwe whereas the importance of the sector as a source of employment in the more developed countries of Angola, Botswana, Namibia, South Africa and Swaziland has declined significantly over the years. The agricultural sector in these more developed countries is relatively small either due to their more advanced and diversified economies or because their economies depend on mineral resources (Pratt and Diao, 2006).

Figure 9: Economically active population in the SADC region – agricultural versus non agricultural

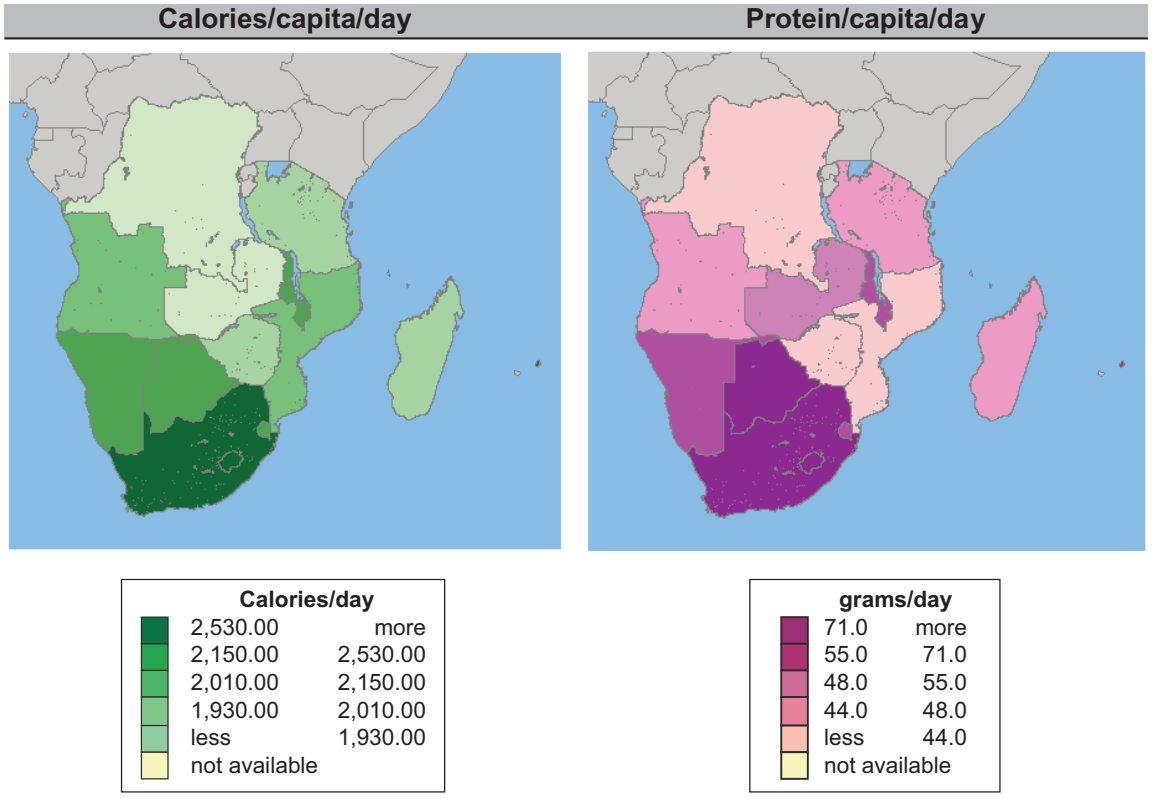


Source: World Bank (2006)

Contribution of agriculture to food security

Despite the relative importance of agriculture in the region, its performance in terms of food production and contribution to food security has not been impressive. Food insecurity is a major problem in most SADC countries. In addition to the level of food production, a country's food security also depends on several other factors such as availability, access, utilisation and stability of food supplies. Figure 10 presents the distribution of per capita consumption of calories and proteins in the region, giving a picture of the region's food security situation. Typically, the low-income countries have lower per capita consumption levels of calories and proteins than the middle-income countries. Although per capita caloric intake in the region has been increasing since 1990, the average per capita caloric intake for the region was estimated at 2270 kcal/person/day in 2003, below the minimum requirement for caloric intake of 2350 kcal/person/day set by FAO (2006b). Notably, the Democratic Republic of Congo and Zambia have the lowest per capita consumption of calories, while the Democratic Republic of Congo, Mozambique and Zimbabwe have the lowest consumption of proteins.

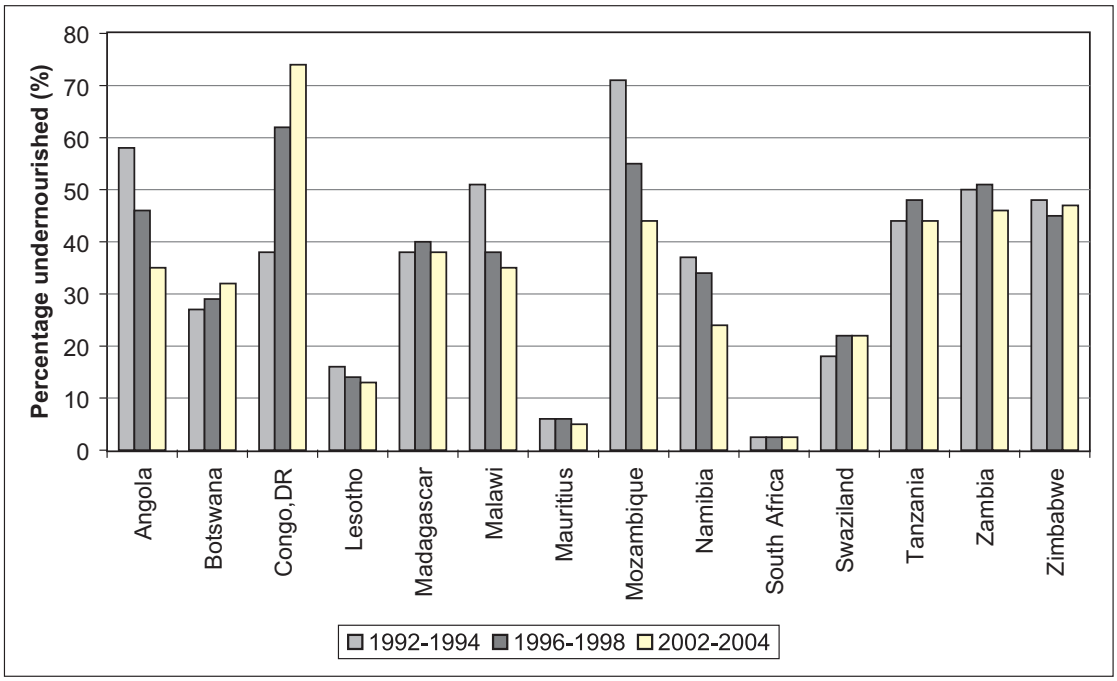
Figure 10: Calories and protein consumption per capita per day in the SADC region



Source: FAO (2006b)

Figure 11 presents information on the prevalence of under nourishment in the SADC region. Under nourishment in a country is a result of several factors among them the level of food production and utilisation, the level of education, cleanliness, health and sanitation. The proportion of undernourished people in the region varies widely from country to country, ranging from as low as 6 % in Mauritius to as high as 72 % in the Democratic Republic of Congo. The average proportion of undernourished people in SADC is about 35 %, which is just three percentage points above the proportion for sub-Saharan Africa as a whole. The proportion of undernourished people in the region has remained almost constant since the 1990s suggesting no improvement in the overall food security situation of the region. In five SADC member countries (namely Botswana, the Democratic Republic of Congo, Madagascar, Swaziland and Tanzania), the proportion of undernourished people increased between 1990 and 2004. The Democratic Republic of Congo recorded the largest increase of 40%, probably attributable mainly to the unstable political situation in the country during the period. Countries that have reduced the proportion of undernourished people include Angola, Lesotho, Malawi, Mozambique, Namibia and Zambia. The largest decrease in the proportion of undernourished people occurred in Mozambique (21%), which may be largely attributed to a stable political climate.

Figure 11: Under nourishment in the SADC region expressed as a percentage of total population



Source: FAO (2006a)

Trends in agricultural output and productivity

Agricultural products are usually measured by weight or volume. An immediate question that arises is how to best combine different agricultural products since summing up weights or volumes is not very meaningful. Because of this, aggregate output in agriculture is measured in monetary units – as the sum of the value of all production in the agriculture minus the value of intermediate inputs originating within the sector. Aggregate output takes into consideration both cash and non-cash transactions – and is often referred to as 'final output'. This differs from agricultural GDP because it also includes the non-agricultural inputs (Rao, 1993). Thus aggregate output (final output), refers to the amount of agricultural output available for the rest of the economy – whereas agricultural GDP measures the 'net contribution' of agriculture to the GDP of a country (Zapeda, 2001)

Productivity measures are subdivided into partial or total measures. Partial measures are the amount of output per unit of a particular input. Commonly used partial measures are yield (output per unit of land), and labour productivity (output per economically active person or output per agricultural person-hour). Yield is commonly used to assess the success of new production practices or technology. Labour productivity is often used as a means of comparing the productivity of sectors within or across economies. Labour productivity can also be used as an indicator of rural welfare or living standards since it reflects the ability to acquire income through the sale of agricultural goods or agricultural production (Block, 1994).

The agricultural sector in SADC is dominated by crops, which account for 65% of total agricultural revenue. However, the dominance of crops in terms of agricultural revenue has been declining over the

years (Table 2). Livestock production has thus gained prominence in terms of generating agricultural revenue in the region. The largest contributors to agricultural revenue are maize, fruits, beef, roots, tubers, milk and poultry. The increasing importance of livestock as a source of agricultural revenue in the region implies that agricultural growth in the region will largely depend on complementarities between the crop and livestock sub-sectors and enhancing their respective productivity.

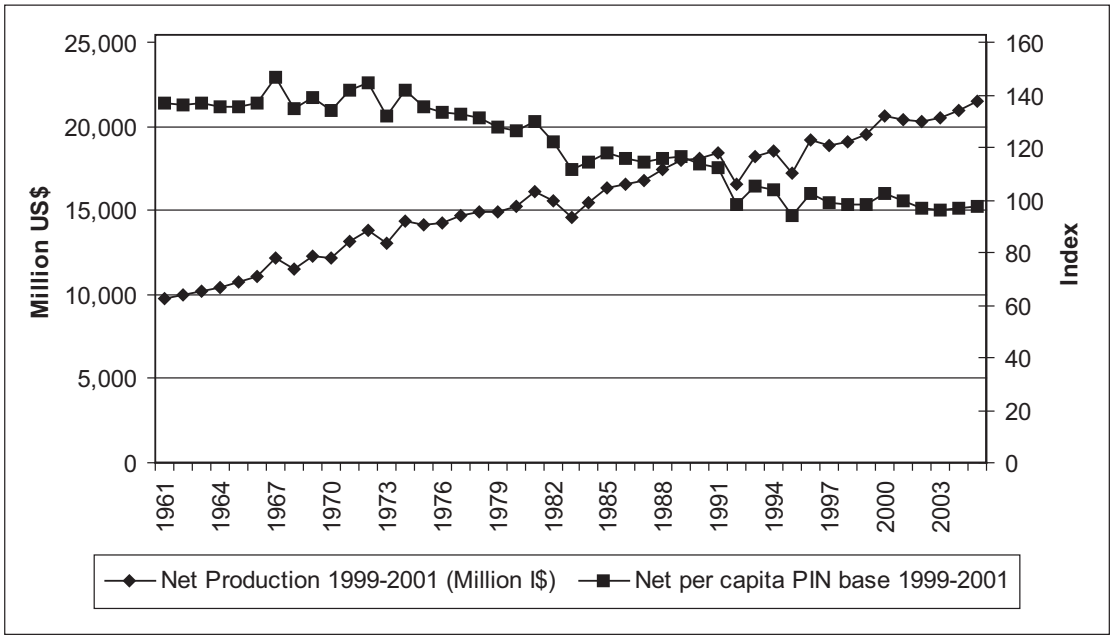
Table 2: Contribution of specific crop and livestock commodities to total agricultural revenue in SADC countries*

Commodity	Average revenue (%)	
	1977-1981	1998-2002
Maize	15.3	10.8
Wheat	3.0	2.7
Other cereals	1.6	1.3
Roots and tubers	5.9	11.6
Pulses	1.4	1.4
Fruits	9.5	10.8
Vegetables	5.6	6.5
Oilseeds	4.5	3.5
Cotton	1.5	1.5
Tobacco, coffee, tea, spices	4.5	5.6
Sugarcane	5.2	4.8
Forage and others	9.4	4.5
Total (crops)	*67.3*	*65.1*
Beef and buffalo meat	12.5	10.0
Milk, total	8.5	6.8
Eggs, primary	2.3	3.5
Poultry meat	3.9	9.7
Pork	2.0	2.2
Lamb and goat meat	3.6	2.7
Total (livestock)	32.7	34.9
Total	100	100

* Excludes Angola, Democratic Republic of Congo and Tanzania
Source: Pratt and Diao (2006)

Agricultural production indices (PIN) can be used to provide information on the overall performance of the agricultural sector. Figure 12 presents the challenge facing the agricultural sector in the SADC region in the context of the need to increase agricultural productivity in order to achieve the CAADP agricultural growth objective of 6% per annum. Net value of production has more than doubled in the period 1960-2005, increasing from about US$10,000 million to more than US$20,000 million. However, net per capita production has decreased by about 40% during this period indicating that agricultural production has not kept pace with population growth in the region. The decline in per capita agricultural production may be attributed to a combination of factors including adverse climatic conditions (droughts), continuing low levels of fertiliser use and the relatively small area under irrigation, especially among smallholder farmers.

Figure 12: Production indices (PIN) - trends in net production and net per capita PIN base



Source: FAO (2006a)

The value added per worker in agriculture, which is a proxy for labour productivity, in the SADC region, is estimated at US$851 per annum. This is 30 times lower than the value added per worker in developed countries estimated at US$25,372 per annum. The agricultural output per worker has been increasing steadily in the developed countries, while, even starting from a low base, agricultural output per worker in the region has only marginally increased. The need to increase agricultural productivity is greatest in the low-income countries where agricultural value added per agricultural worker is only US$230, compared to US$1,681 in the middle-income countries in the region.

Figure 13: Trends in agricultural value addition per worker

Figure 13a: SADC versus developed countries

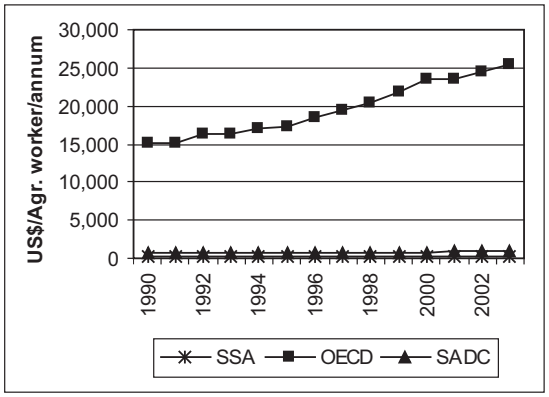
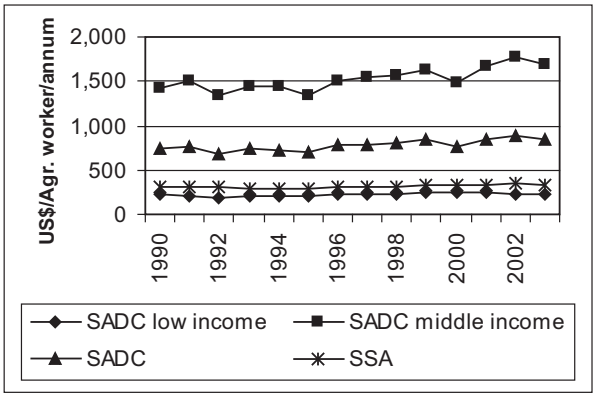


Figure 13b: Low income versus middle income countries



Source: World Bank (2006)

Crop production

Trends in land use statistics in the region are presented in Tables 3. Agricultural production accounts for 44.8% of the land area, of which 87.7% is used for forage and the rest for crop production. Therefore in terms of land resources, the region has the potential to increase agricultural production.

Table 3: Trend in land use in SADC region (2003)

Land type	Million hectares	*Percentage (%)	Annual growth rate (1990-2003) (%)
Land Area	906	-	0
Agricultural area (1)	406	44.8	0.15
Arable and Permanent Crops (2)	50	12.3	0.90
Permanent Pasture (2)	356	87.7	0.04

*(1) and (2) as a percentage of land area and agricultural area respectively

Source: FAO (2006a)

Table 4 presents the relative share of main crops grown in the region, while Figures 14, 15 and 16 present trends in the area harvested for major crop categories, food crops and cash crops in the SADC region. Cereals dominate crop production although cash crops are also increasing in importance. Maize is the single most important crop in terms of land utilisation and occupies about 37% of total cropland (Table 4) and accounts for 71% of the harvested areas for cereals. Although the total area harvested for maize production has increased, the proportion relative to other crops has remained stable in the last decade.

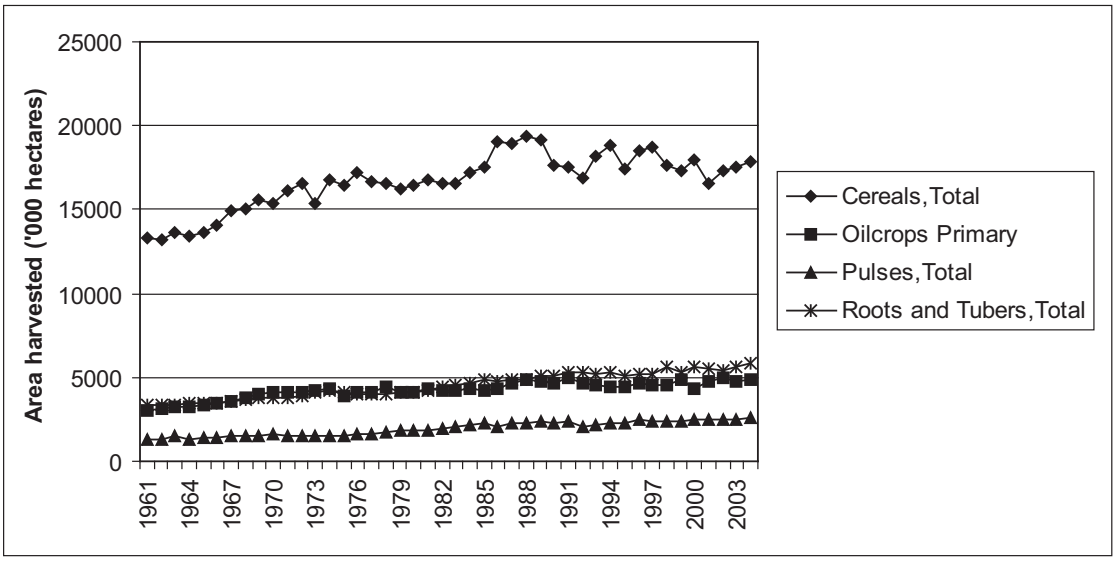
Table 4: SADC: Percentage land utilisation by crop

Crop	1990	2000	2004
Coffee	1.8	1.1	0.8
Fruit Primary	4.6	4.1	4.3
Maize	37.2	38.3	37.1
Millet	2.6	3.3	3.4
Oil crops	14.2	13.0	14.2
Pulses	7.0	7.3	7.7
Rice, Paddy	3.1	3.6	3.0
Roots and Tubers	15.6	16.8	17.0
Sorghum	4.5	4.9	5.2
Spices	0.0	0.0	0.0
Sugar Cane	1.6	1.8	1.8
Tea	0.2	0.2	0.2
Tobacco Leaves	0.7	0.9	0.8
Vegetables Primary	1.7	1.7	1.6
Wheat	5.3	3.1	2.9
Total	100.0	100.0	100.0

Source: FAO (2006a)

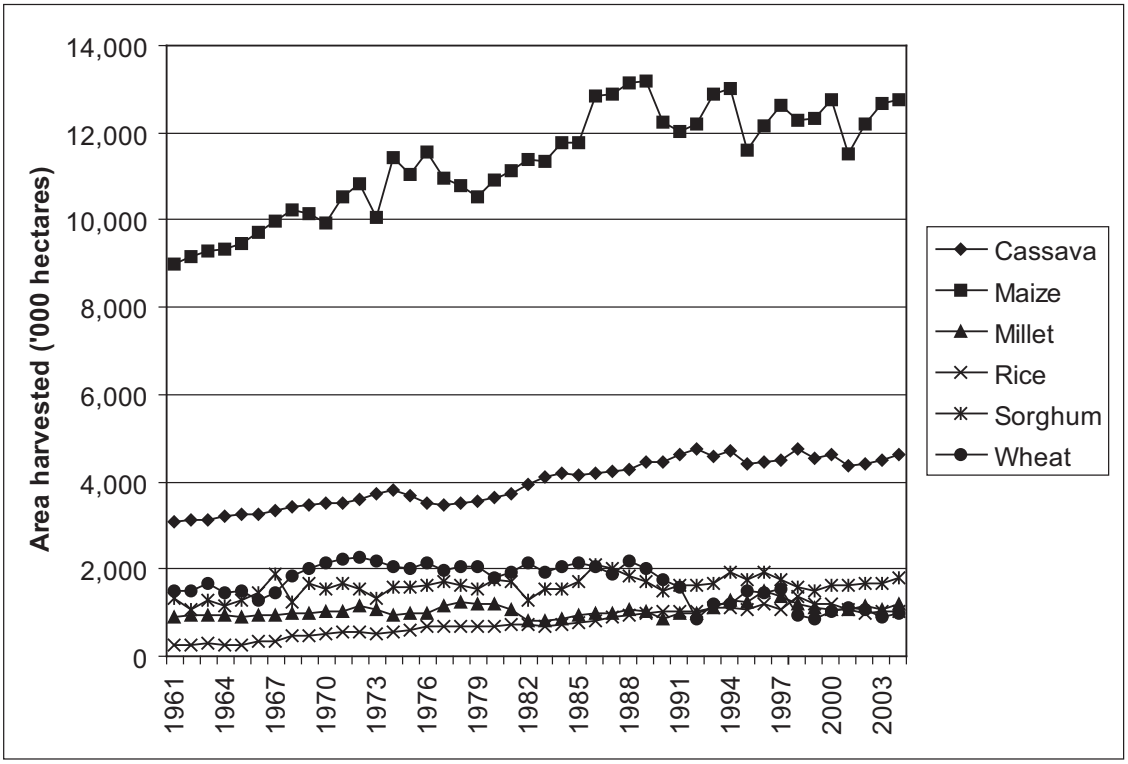
Areas harvested for cereals, oil crops, pulses, and roots and tubers have remained basically the same, with only marginal increases in the last decades. The area harvested and total production of other important food crops such as wheat, millet, sorghum has remained stagnant since the 1970s. Similarly, the area harvested and total production of major cash crops in the region including cotton, tobacco, tea and coffee have either declined or remained virtually stagnant since the 1970s.

Figure 14 Trends in area harvested of major crop categories in the SADC region



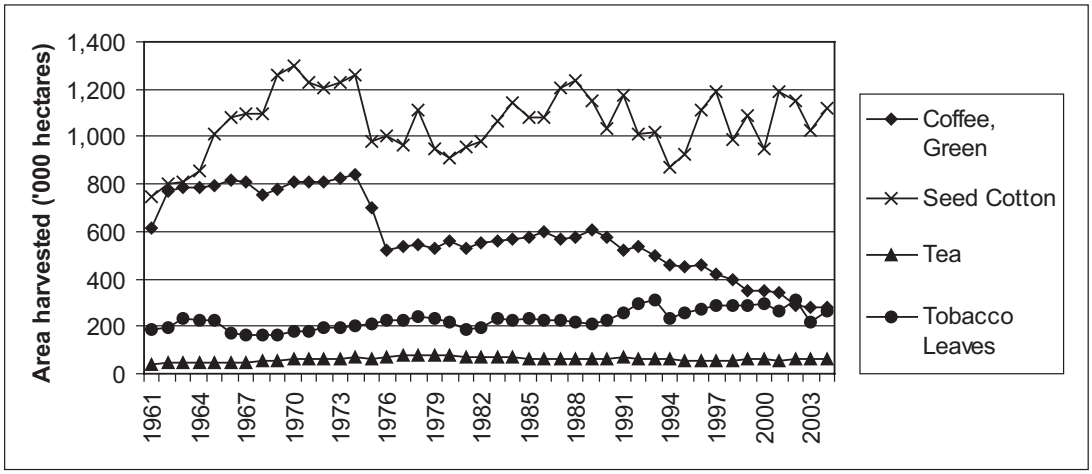
Source: FAO (2006a)

Figure 15: Area harvested of major food crops in the SADC region



Source: FAO (2006a)

Figure 16: Area harvested of major cash crops in the SADC region



Source: FAO (2006a)

Table 5 presents crop production statistics by major crop categories for the SADC region in 2004. South Africa dominates the region in maize production accounting for 41.7% of the total maize produced, followed by Madagascar and Tanzania, which account for 16.9% and 11.4% respectively. South Africa and the Democratic Republic of Congo are the major producers of oil crops accounting for over 50% of regional production. With respect to pulses, Tanzania produces 31.4% of the regional total, while the Democratic Republic of Congo produces 31.7% of the roots and tubers in the region. Crop production is less important in countries such as Botswana, Namibia and Mauritius.

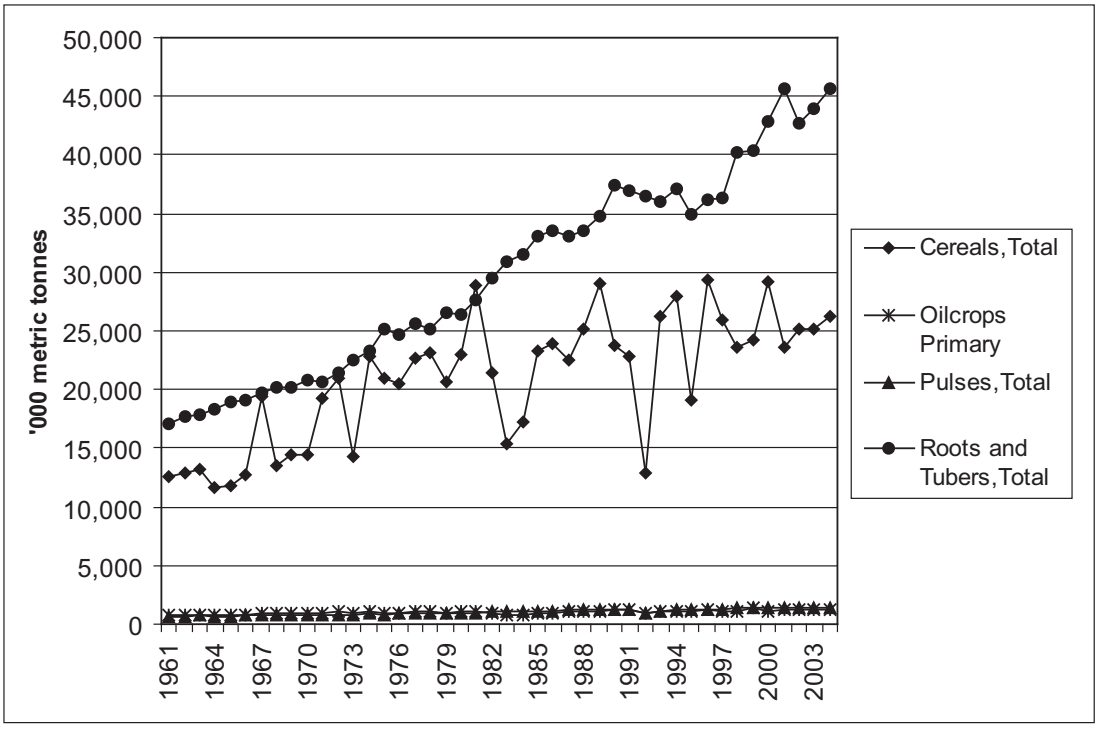
Table 5: National shares in total crop production in the SADC region (2004)

Country	Cereals		Oil crops		Pulses		Roots & tubers	
	'000 Mt	%	'000 Mt	%	'000 Mt	%	'000 Mt	%
Angola	725	2.4	90	7.1	76	5.0	7,507	15.3
Botswana	45	0.2	3	0.3	18	1.2	93	0.2
Congo, DR	1,570	5.3	341	27.0	185	12.3	15,488	31.7
Lesotho	248	0.8	0	0.0	11	0.8	90	0.2
Madagascar	3,391	11.4	29	2.3	102	6.8	3,214	6.6
Malawi	1,843	6.2	56	4.4	254	16.9	4,344	8.9
Mauritius	0	0.0	1	0.0	0	0.0	13	0.0
Mozambique	2,007	6.8	97	7.7	205	13.6	6,565	13.4
Namibia	107	0.4	1	0.0	9	0.6	295	0.6
South Africa	12,352	41.7	369	29.2	97	6.5	1,873	3.8
Swaziland	69	0.2	2	0.1	3	0.2	54	0.1
Tanzania	5,020	16.9	156	12.4	473	31.4	8,131	16.6
Zambia	1,427	4.8	26	2.0	17	1.1	1,021	2.1
Zimbabwe	837	2.8	92	7.3	55	3.7	228	0.5
SADC	29,640	100.0	1,262	100.0	1,505	100.0	48,916	100.0

Source: FAO (2006a)

Trends in production of major crop categories are presented in Figure 17, indicating that root and tubers have shown the largest and sustained increase in the last decades. This is primarily due to the expansion of cassava production in the region. Maize production trends are highly variable, largely influenced by climatic conditions, which depress production, especially drought. The growth in the production of pulses, and roots and tubers has remained more or less constant.

Figure 17: Trends in production of major crop categories in the SADC region

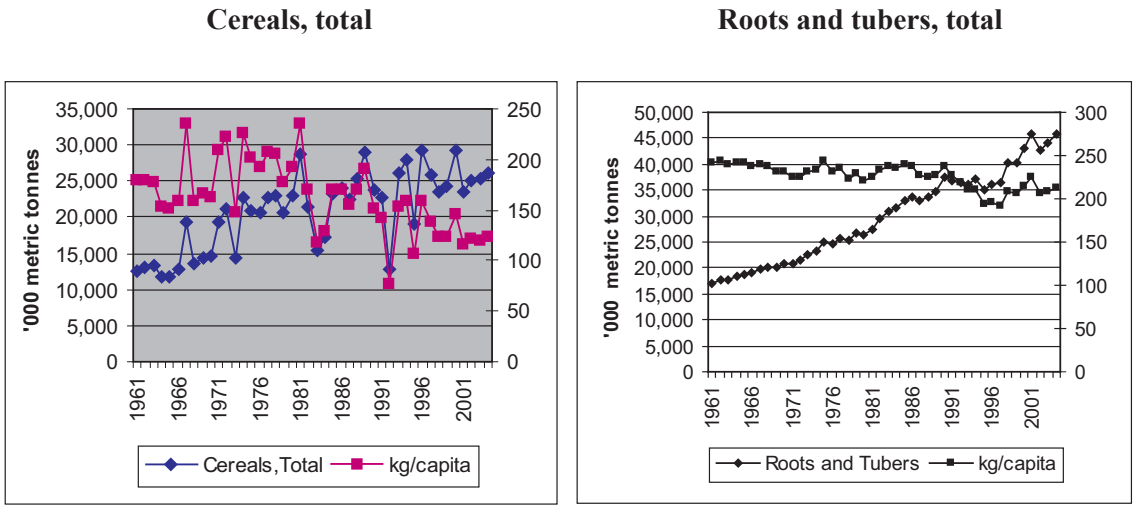


Source: FAO (2006a)

As cereals and roots and tubers are the most important food crops in SADC, per capita cereal and roots and tuber production in relation to population growth can provide an indication of how well the region is doing in meeting food needs. Over the last decades, cereal and tuber production have been on increase but per capita production have been on decline[1] which implies widening gap between production and demand for the commodities (Figure 18).

[1]This situation is further complicated by a 6-7 year period (from 2001) of erratic rainfall and production patterns

Figure 18: Trends in total cereal and root/ tuber and per capita production in SADC

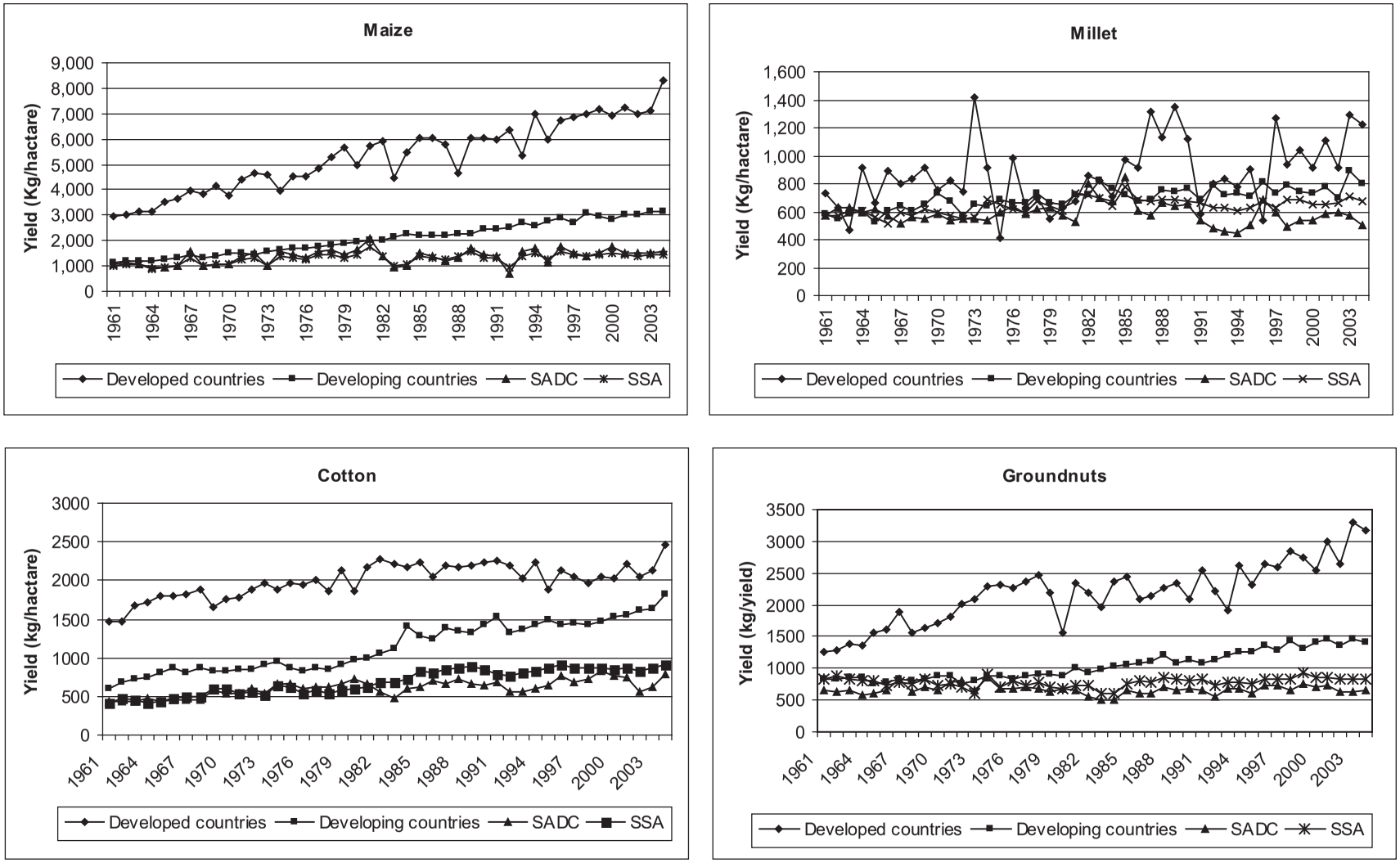


Source: FAO (2006a)

Figure 19 shows trends in yields for major crops in the SADC region. When compared to developing and developed countries, the region has made limited progress in improving yields per hectare for virtually all the major crops. Yields per hectare in the developing and developed countries have not only remained high, but have been increasing during the last decade. Yield trends in the SADC countries have followed the patterns of the rest of sub-Saharan Africa, which have lagged behind those in other parts of the world.

Maize yields in developing countries as a whole, for example, have more than doubled since the 1960s to reach more than 8,000 kg/ha, whereas yields in the SADC region and in sub-Saharan Africa are still below 2,000kg/ha. Similarly, there is a big yield gap between the developed countries and the region for cotton, millet and groundnuts. These yield gaps are substantial and affect mainly smallholder farmers. Hence they have implications for improving food security and incomes in the region. The wide yield gap is an indication of the existing potential and opportunity for making substantial improvements. Addressing the yield gap could go a long way towards reducing food insecurity in the region.

Figure 19 Trends in yields of major crops in the SADC region



Source: FAO (2006a)

Livestock Production

In the SADC region, traditional and commercial livestock production are gaining importance as a source of livelihoods and revenue. Table 6 presents the distribution of major livestock species by country. The region has a total of 63.9 million cattle, 355 million poultry, 73 million small ruminants and 6.6 million pigs. Madagascar, South African and Tanzania each have over 10 million head of cattle. Together they account for 66.3% of the region's cattle population. South Africa also accounts for 41.1%, 43.3% and 24.9% of the poultry, sheep and goats, and pig populations respectively. In most countries in the region livestock is kept in traditional mixed use or pastoral systems, providing animal traction for crop production and a source of income for the purchase of inputs into crop production. Although countries such as Botswana and Namibia have relatively small livestock populations, they are major exporters of livestock to international markets along with South Africa.

Table 6: National shares of livestock resources in the SADC region (2004)

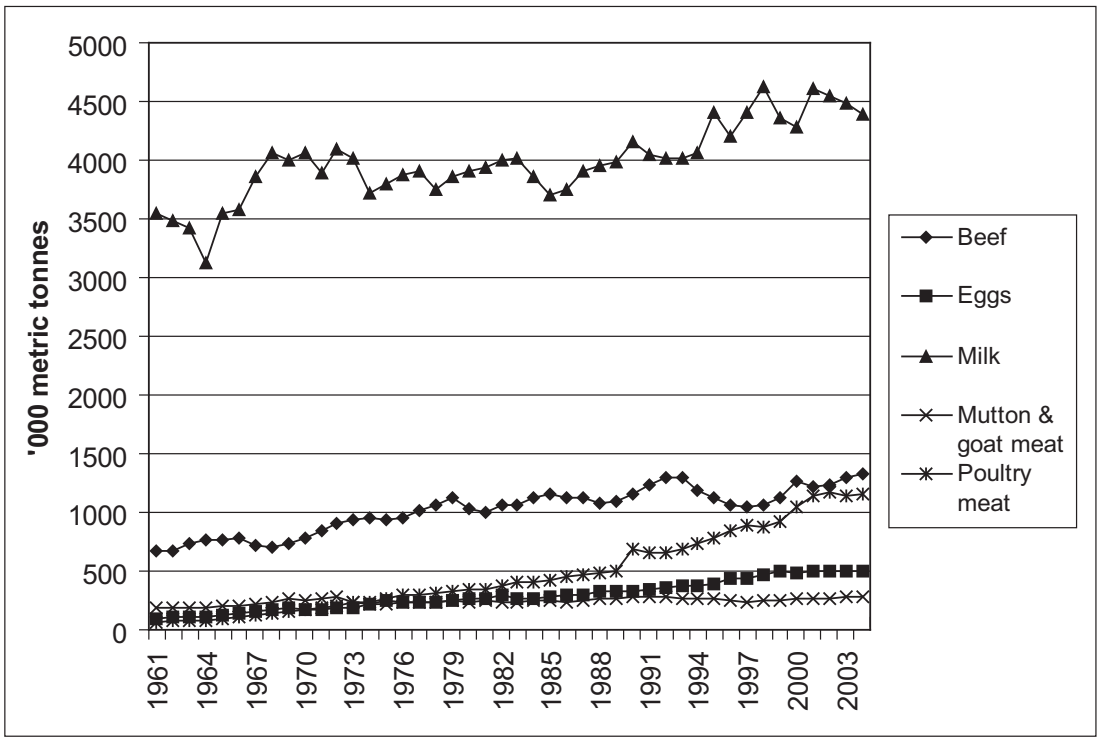
Country	Cattle		Pigs		Poultry		Sheep & goats	
	Nr ('000)	%	Nr ('000)	%	Nr ('000)	%	Nr ('000)	%
Angola	4,150	6.5	780	11.8	6,800	1.9	2,390	3.3
Botswana	3,100	4.8	8	0.1	4,000	1.1	2,150	2.9
Congo, Dem Republic of	758	1.2	957	14.4	19,710	5.6	4,915	6.7
Lesotho	540	0.8	65	1.0	1,800	0.5	1,500	2.0
Madagascar	10,500	16.4	1,600	24.1	32,800	9.2	1,850	2.5
Malawi	765	1.2	456	6.9	15,200	4.3	2,015	2.7
Mauritius	28	0.0	13	0.2	9,845	2.8	105	0.1
Mozambique	1,320	2.1	180	2.7	28,670	8.1	517	0.7
Namibia	2,900	4.5	28	0.4	3,500	1.0	4,750	6.5
South Africa	13,512	21.1	1,651	24.9	145,990	41.1	31,732	43.3
Swaziland	580	0.9	30	0.5	3,200	0.9	301	0.4
Tanzania, United Republic of	17,800	27.8	455	6.9	31,320	8.8	16,071	21.9
Zambia	2,600	4.1	340	5.1	30,000	8.5	1,420	1.9
Zimbabwe	5,400	8.4	62	0.9	22,097	6.2	3,580	4.9
SADC	63,953	100.0	6,625	100.0	354,932	100.0	73,295	100.0

Source: FAO (2006a)

Trends in the off-take of livestock products show that overall production has increased only marginally in the last decade (Figure 20). Although beef production dominates in the region, it has only doubled in the last four decades and off-take has remained constant over the last decade. Poultry production is the fastest growing sub-sector, with poultry meat production expanding by 50% in the last decade. Given these trends in production, livestock production has not kept pace with demographic growth and consequently the region has among the lowest consumption rates for livestock products in the world (FAO, 2006a). These trends are mirrored by low productivity of both meat and milk as illustrated in Figures 21 and 22, which present trends in carcass weight for beef and milk yields. Both

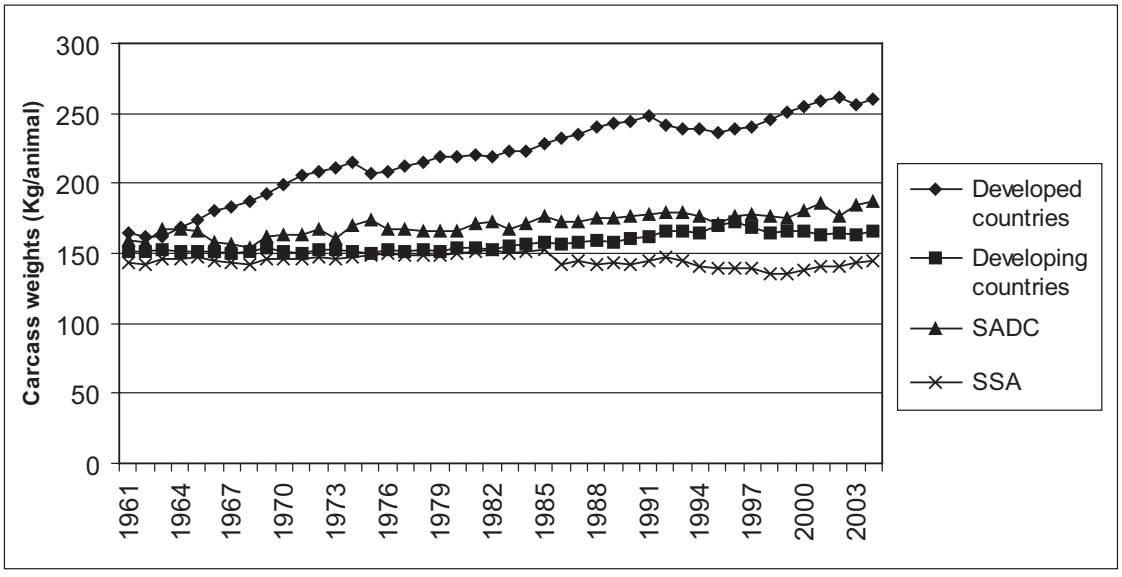
carcass weight and milk yield are much lower in the region when compared to developed countries indicating a big yield gap. In fact the yield for meat and milk has only marginally improved when compared to developed countries.

Figure 20: Trends in off take of livestock products in the SADC region



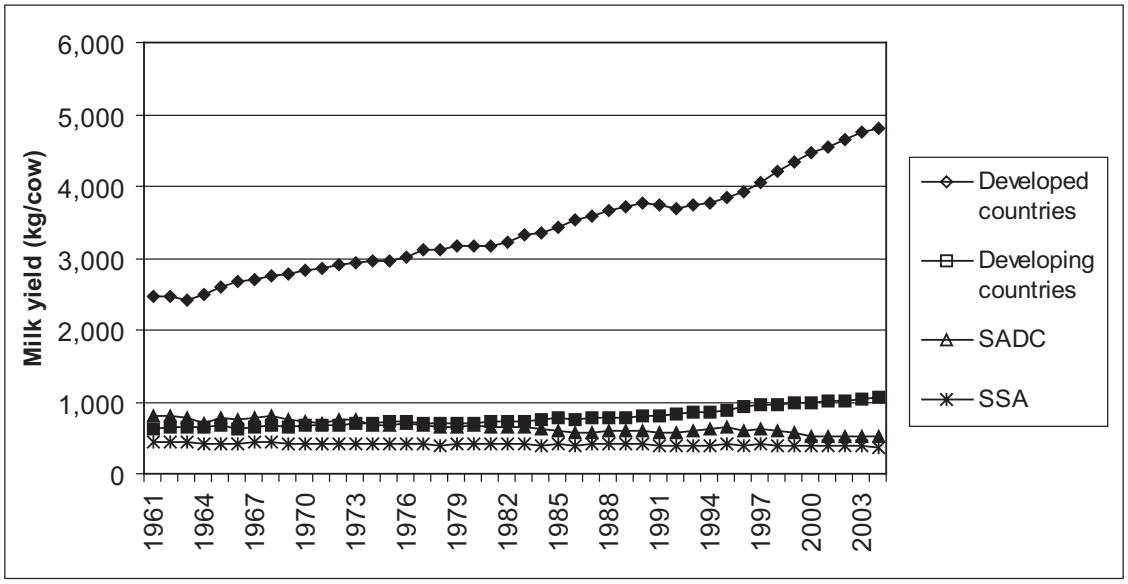
Source: FAO (2006a)

Figure 21 Trends in carcase weights in the SADC region



Source: FAO (2006a)

Figure 22: Trends in milk yields in the SADC region



Source: FAO (2006a)

Trends in fertiliser use

The role of fertiliser in increasing agricultural production and productivity has been clearly demonstrated in many developing countries particularly in Asia during the green revolution. African governments have realised that without increasing fertiliser use little can be achieved by way of raising agricultural production and meeting the Millennium Development Goals. Hence, African countries, under the 2006 Abuja Declaration on Fertilisers, have committed themselves to significantly increase fertiliser use from 8 kg per hectare to 50 kg per hectare by 2015.

The SADC region has one of the lowest fertiliser application levels in the world. The limited use of fertiliser is an important explanation for the low levels of agricultural production and productivity in the region. Fertiliser use by country is presented in Table 7. South Africa accounts for 65% of total fertiliser use in the region, followed by Malawi (13.5%), Zimbabwe (7.7%) and Zambia (4.5%). Until 2002, Zimbabwe was the second largest consumer of fertiliser in the region after South Africa.

Table 7: Trends in fertiliser use by country in the SADC Region

Country	1992		2002		Growth rate (%)
	Metric tonnes	Proportion (%)	Metric tonnes	Proportion (%)	1992-2003
Angola	9,100	0.8	0	0.0	-
Botswana	900	0.1	4,600	0.3	17.7
Congo, DR	2,300	0.2	10,513	0.7	16.4
Lesotho	5,700	0.5	11,300	0.8	7.1
Madagascar	7,697	0.7	9,125	0.6	1.7
Malawi	73,800	6.6	193,008	13.5	10.1
Mauritius	26,638	2.4	25,000	1.7	-0.6
Mozambique	4,900	0.4	24,900	1.7	17.7
Namibia	0	0.0	300	0.0	-
South Africa	732,800	65.3	965,100	67.3	2.8
Swaziland	12,400	1.1	7,000	0.5	-5.6
Tanzania	47,923	4.3	7,148	0.5	-17.3
Zambia	84,500	7.5	65,168	4.5	-2.6
Zimbabwe	113,600	10.1	110,000	7.7	-0.3
SADC	1,122,258	100.0	1,433,162	100.0	2.5

Source: FAO (2006a)

The expansion of fertiliser application in the region presents a mixed picture, having declined in Tanzania, Zambia and Swaziland. Overall fertiliser use is increasing at 2.5% per annum.

Trends in area under irrigation

In sub-Saharan Africa, public sector irrigation schemes have been generally expensive to construct and maintain and their performance has been disappointing. Not only have production increases been lower than anticipated, but the systems have often been unsustainable due to low output prices, and high operational and maintenance costs (Malcolm, et al, 2001). The option for the future is to design a series of smaller, more manageable schemes – or to find private companies willing to operate the large schemes on a commercial basis. Small-scale farmer-managed irrigation (SSFMI) has been more successful and holds more promise (Malcolm et al, 2001). Projections indicate a slow expansion of irrigation during the next 30 years – thus unlike other regions where irrigated areas will generate a major part of the increases in food production, irrigation in Africa may play a very modest role during the next three decades (FAO, 2003)

Limited progress has been made in southern Africa in increasing the area under irrigation. The percentage of cultivated land under irrigation has risen slowly from 5.1% in 1980 to 5.9% in 2003 (FAO, 2006b,). Globally, Africa, with 5.4% of its cultivated land under irrigation in 2003, was the second lowest after Oceania (FAO, 2006b). Within the region, irrigation coverage is lowest for

Botswana, the Democratic Republic of Congo and Lesotho. Swaziland led with 39% of its arable land under irrigation in 2002, followed by Madagascar at 37%. On average, the region had 8.98% of its cultivated area under irrigation by 2002. Total irrigation coverage is highly skewed with South Africa having 1,498 million ha under irrigation followed by Madagascar with over a million hectares under irrigation, and Botswana and Lesotho each with 1,000 ha under irrigation. Expansion of irrigation coverage will reduce vulnerability to unpredictable rainfall patterns, which undermine overall agricultural performance.

Table 8: Trends in area under irrigation in the SADC region

Country	Irrigated land (1000 Ha)				Percentage share of cropland (%)			
	1979-1981	1989-1991	1999-2001	2002	1979-1981	1989-1991	1999-2001	2002
Angola	75	75	75	75	3	3	3	3
Botswana	2	2	1	1	0.50	0.48	0.27	0.27
Congo, Dem R	6	10	11	11	0.1o	0.15	0.16	0.16
Lesotho	1	1	1	1	0.34	0.32	0.3	0.3
Madagascar	646	1000	1090	1090	25	37	37	37
Malawi	18	20	30	30	1	1	1	1
Mauritius	16	17	21	22	16	17	21	22
Mozambique	65	103	107	107	2	3	3	3
Namibia	4	4	7	7	1	1	1	1
South Africa	1,119	1290	1450	1498	9	10	10	10
Swaziland	58	65	70	70	34	35	39	39
Tanzania	117	144	162	170	4	4	4	4
Zambia	19	30	46	46	0.37	1	1	1
Zimbabwe	80	100	117	117	3	3	4	4
SADC	2,226	2,861	3,188	5,247	7.09	8.28	8.9	8.98

Source: FAO Statistical Year Book (2004)

Trends in agricultural trade

For centuries, countries have relied on trade in agricultural and food commodities to supplement and complement their domestic production. The uneven distribution of land resources and the influence of climatic zones on the ability to raise plants and animals has led to trade between and within countries and continents. Historical patterns of settlement and colonisation contributed to the definition of trade patterns and the emergence of an infrastructure to support such trade. More recently, trans-national companies with global production and distribution systems have taken over from post-colonial trade structures as a paradigm for the organisation of agricultural trade. Changes in consumer taste have encouraged the emergence of global markets and added to the significance of trade. Few countries

could survive the elimination of agricultural trade without a considerable drop in national income and none could do so without considerable reduction in consumer choice and well-being (Bruinsma, 2003).

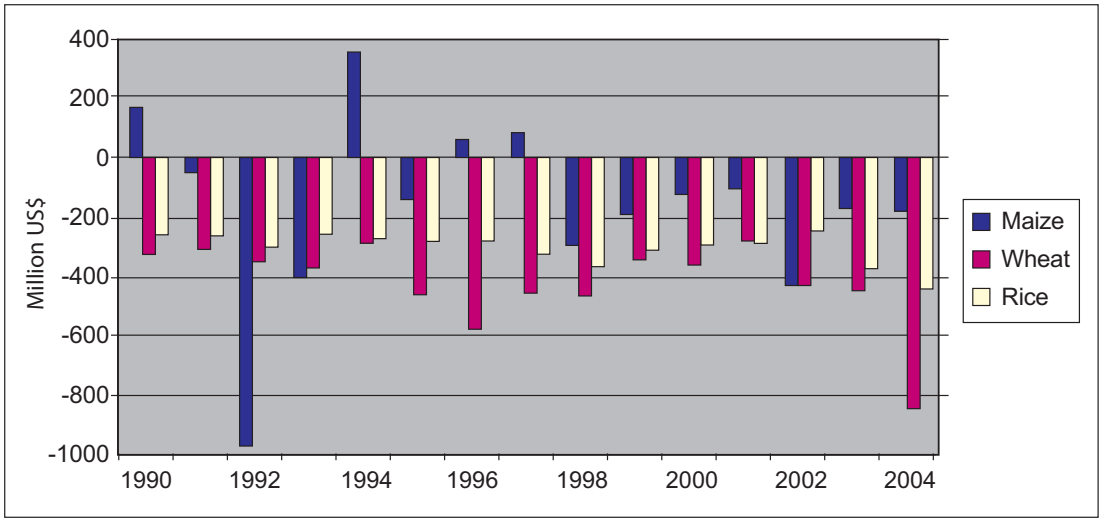
The SADC protocol on trade, as amended, envisages the establishment of a free trade area (FTA) in the region by 2008 and its objectives are to further liberalise intra-regional trade in goods and services, ensure efficient production, contribute towards the improvement of the climate for domestic, cross border and foreign investment; and enhance economic development, diversification and industrialisation in the region. The specific strategies adopted to achieve these objectives are the gradual elimination of tariffs; adoption of common rules of origin; harmonisation of customs rules and procedures; attainment of internationally acceptable standards, quality, accreditation and metrology; harmonisation of sanitary and phyto-sanitary measures; elimination of non-tariff barriers; and liberalisation of trade in services (SADC, 2006).

Improving intra-trade in agricultural products will contribute significantly to the development of SADC. Any strategy aimed at increasing economic growth through trade in the SADC region should encompass the promotion of intra-regional trade. Prospects for intra-regional trade in the region are promising, especially since the signing of a Free Trade Protocol by SADC member countries in 2000. Intra-SADC trade has tripled between 1990 and 2002 and stood at 8.8% of total exports in 2002 (UNCTAD, 2002). Intra-SADC trade is expected to increase even further with the establishment of a Free Trade Area in the SADC region by 2008. The Free Trade Protocol is expected to increase trade significantly in the region, especially between South Africa and countries such as Malawi, Mozambique, Tanzania and Zambia (COMESA, 2003). South African supermarkets are already sourcing fruits and vegetables from African countries rather than importing them from overseas (Resnick, 2004).

Agricultural exports and imports in SADC are largely dependent on climatic conditions, because of the heavy dependence of agricultural production on rainfall. The region tends to import more agricultural products when drought conditions are experienced and exports more products when favourable climatic conditions prevail. This is clearly illustrated by the trends in net trade for maize, rice and wheat (Figure 23). The SADC region is a net importer of cereals. Maize is the only major cereal that has generated a trade surplus in some years. South Africa and Zambia dominate maize exports accounting for 86% of exports in 2004. South Africa and Zimbabwe are the main importers of maize accounting for 55% of all maize imports into the region in 2004. Overall, SADC is a net importer of food. Figure 25 shows the trends in food aid (cereals), which move with the negative trade balance, being high during periods of poor rainfall.

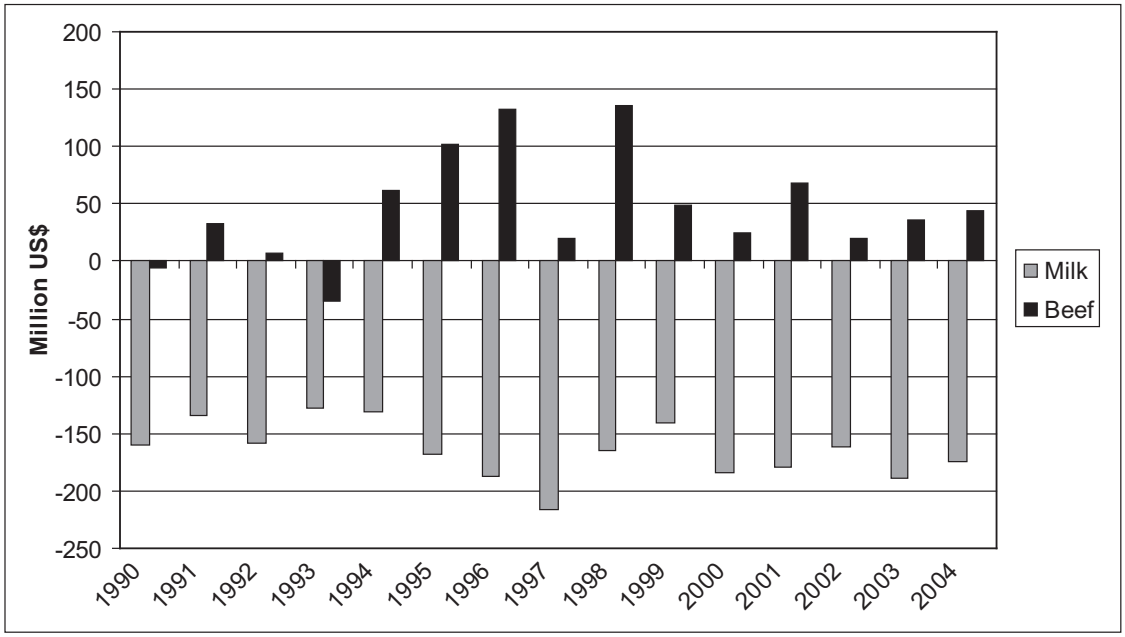
The value of tobacco and coffee exports has been decreasing since the late 1990s while tea and cotton exports have stagnated for most of the period. Imports of cotton and tobacco have fluctuated since the late 1980s, showing a rising trend particularly from around 2000. Tea and coffee exports have remained almost constant since the late 1980s. The region has managed to maintain a positive trade balance in the above cash crops.

Figure 23: Trends in net trade in maize, wheat and rice in the SADC region



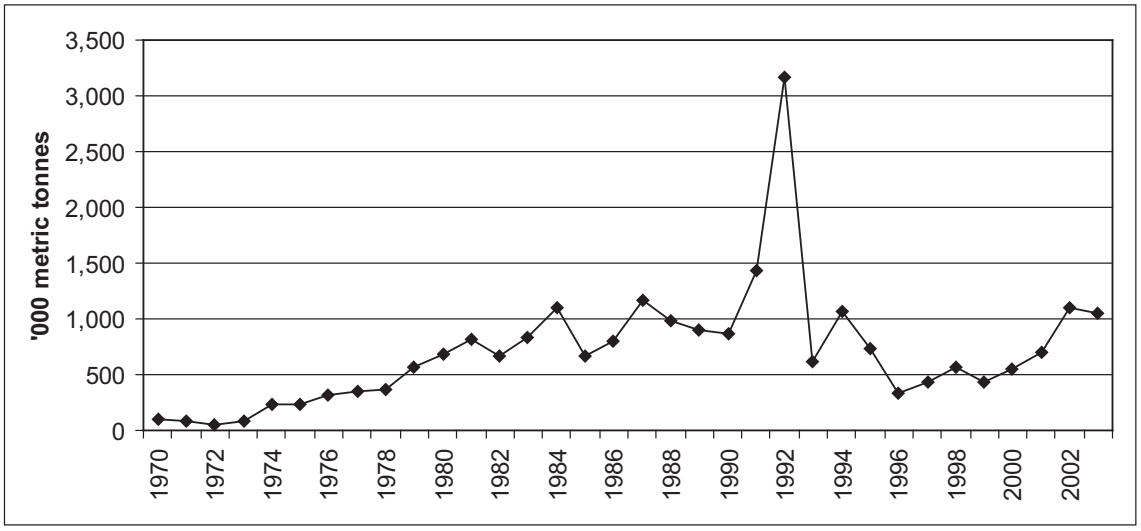
Source: FAO (2006a)

Figure 24: Trends in net trade in meat and milk in the SADC region



Source: FAO (2006a)

Figure 25: Trends in food (cereals) aid in the SADC region



Source: FAO (2006a)

Public expenditures and investment in agriculture

Public expenditures in agriculture include short-term outlays as well as long-term investments. Investment in agriculture includes government expenditure directed to agricultural infrastructure, research and development, and education and training. Data showing the proportions of all central government expenditures on agriculture are incomplete in most African countries (FAO/World Bank, 2001). Human capital development is a key component of public agricultural investment. The composition and the total amount of public expenditure on agriculture are both of concern (Zepeda, 2001).

Investment is the change in fixed inputs used in a production process. In the narrowest definition, it is the change in the physical capital stock, namely physical inputs that have a useful life of one year or longer such as land, equipment, machinery, storage facilities and livestock. Economists recognise that, though difficult to measure, a comprehensive agricultural investment measure should include improvements in land, development of natural resources and development of human and social capital in addition to physical capital formation. Human capital is the stock of knowledge, expertise or management ability. Since it is directly influenced by education, training and extension institutions variables such as educational level or extension contacts are often used as proxy measures. In addition, public and private expenditure on R&D is often used as a proxy for the level of human capital.

Social capital is the stock of personal relationships and knowledge of institutions that an individual or household has. This affects the individual's access to risk minimising inputs like credit, insurance and land title. In other words, social capital measures the ability to use social networks and institutions. Status, gender and group affiliations are often used as proxies for social capital in economic studies. However, education and transportation, as well as the range of social institutions available, can also influence social capital.

The relationship between government spending on one hand and agricultural growth and poverty reduction on the other has been examined in previous studies (Elias, 1985; Fan and Pardey, 1998; Fan, Hazell and Thorat, 2000; Fan, Zhang and Zhang, 2000). The findings generally indicate that government spending contributes to agricultural growth and poverty reduction.

A common measure of government expenditure on agriculture relative to the size of the sector is to express public and private agricultural spending as a proportion of agricultural GDP. Fan and Rao (2006) observe that developing countries as a whole allocate less than 10% of their GDP to agriculture which is much less than in developed countries, which allocate more than 20 percent. Government spending on agriculture as a percentage of GDP for African countries was lower than the average for all developing countries and remained constant at 7.8% for the period 1980 to 1998. During this period, agricultural expenditure relative to GDP decreased in about two-thirds of African countries.

Under the Maputo Declaration, SADC member countries have committed themselves to increasing agricultural budgets to at least 10% of their national budgets by the year 2008. This is in recognition of the fact that increased investment in the agricultural sector is necessary for the sector to contribute substantially to economic growth and to meeting the first millennium development goal. However, questions remain about what constitutes agricultural investments, how to allocate agricultural budgets among different sub-sectors in agriculture and how to ensure the efficient use of increased agricultural budgets. The case study of Zambia provides an example of how some of these questions may be addressed (Box 1).

Box 1: Promoting quality public investments in Zambia's agricultural sector

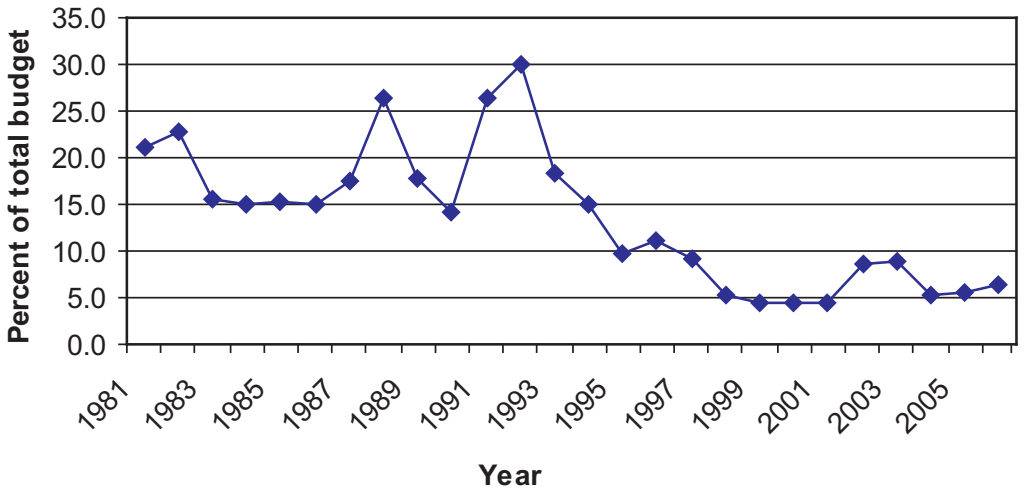
The Ministry of Agriculture and Cooperatives (MACO) has an enormous task of expenditure management to increase productivity and reduce poverty in the long run. Budgetary allocations to agriculture state government's intentions. The Government of Zambia finances agriculture through budget expenditures and fiscal advantages granted through the taxation system. This section only covers spending that is reflected in annual budgets. It includes the considerable budgetary support provided by donors but does not include the programmes and projects they implement outside the public budget.

Trends in allocating public spending for agriculture

Figure I shows trends in the share of the national budget allocated to the agriculture sector. The allocations cover all expenditure by the Ministry of Agriculture and agricultural sector programmes implemented through other ministries. Between 1981 and 1994, the share of public resources allocated to agriculture was above 14%. The highest share of 30% was in 1992. This coincided with the period when there was considerable state involvement in agricultural marketing. This period saw an expansion of state crop buying operations in smallholder areas; direct state control over grain supplies and pricing; heavy subsidisation of fertiliser to encourage its use by small farmers; and efforts to stabilise and subsidise urban consumer prices. Given the prominent role agriculture plays in poverty reduction, concern about declining public spending on agriculture is justified. Going by what has been planned under the Medium Term Expenditure Framework (MTEF), the allocation to

agriculture in 2008 – the target for attaining the 10% budgetary allocation of the national budgets to agriculture set in the Maputo Declaration – will decline to 4% of total budget.

Figure I. Trends in the share of the national budget allocated to the agricultural sector, 1981 – 2006, Zambia



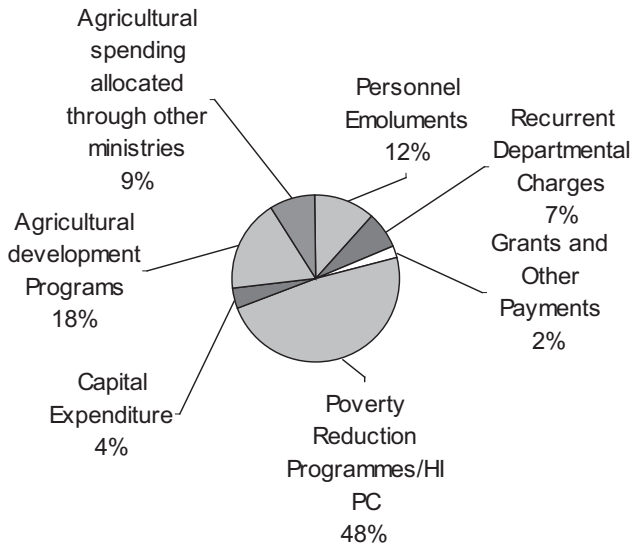
Composition of the agriculture sector budget

Figure II shows the six major public agricultural sector budget items. These include personnel emoluments, recurrent departmental charges (operational expenditure), poverty reduction programmes, capital expenditure, agricultural development programmes, agricultural infrastructure spending allocated through other ministries and other public payments to the sector.

Personnel emoluments (PE) cover salaries, wages and pension contributions to all filled positions. Recurrent departmental charges (RDCs) are expenditures which support the operations of MACO staff covering fuel, spare parts, stationery, field allowances and supplies. Poverty Reduction Programmes (PRPs) support farmers in crop and livestock production and marketing. Capital expenditure supports civil works and purchase of movable and immovable assets. Agricultural development programmes are investments in the sector through loans and grants. Finally, agricultural infrastructure and agricultural social relief services are channelled through other ministries.

Over the past six years, poverty reduction programmes had the largest share of 48% followed by agricultural development programmes at 18%. Personnel emoluments, agricultural infrastructure and social relief, recurrent departmental charges and capital expenditure follow in that order.

Figure II. Average share allocated to agriculture budget items in real prices, 2001 – 2006, Zambia



Variation in amount requested, approved and released

In each budget cycle, MACO has an opportunity to present a budget that reflects needs. In most instances MACO has not received all the resources requested in the years analysed with approved resources ranging from 30 – 91% of those requested. The average over the period was 72%. This cannot entirely be explained by the adoption of the cash budget system alone. Prior to the implementation of the cash budget system in 1994, resources approved for allocation were less than the amounts requested. The size of the budget approved for the sector is important but this does not correspond with the resources that will be released as the budget gets implemented. This is very crucial because non or partial release of funds means that several programmes will not be carried out.

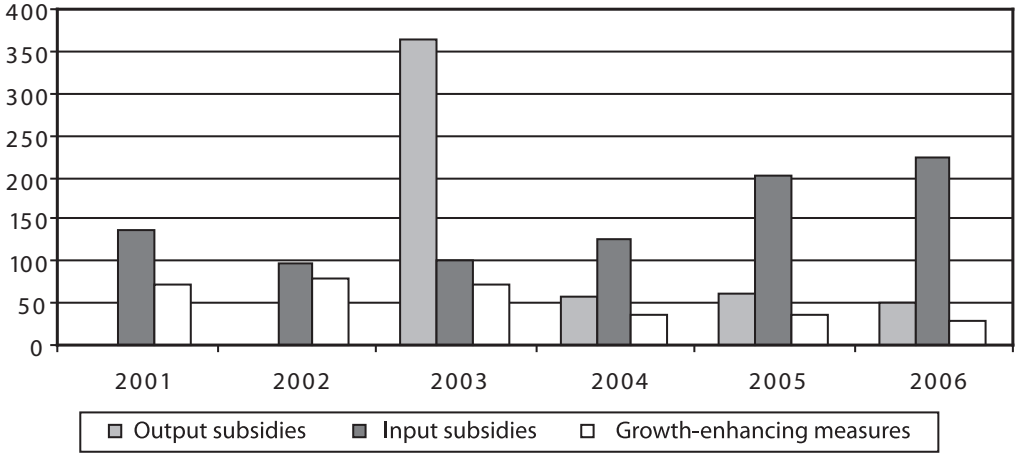
Budget allocation and agricultural policy objectives

The budget is a tool or instrument available for use by government to achieve agricultural policy objectives. The Fifth National Development Plan (FNDP) has identified public agricultural investment priorities such as irrigation; agricultural infrastructure and land development; livestock development and animal health; and agricultural (crops, livestock and fisheries) research and extension as growth enhancing investments. These investments are considered the prime movers of agricultural growth and international competitiveness. The question is whether budget or funding priorities match FNDP priorities?

Expenditures under the Poverty Reduction Programmes (PRPs) and agricultural funding directed through other ministries have been re-classified into three categories, namely: input subsidies, output subsidies and growth enhancing programmes. Input subsidies comprise programmes such as the fertiliser support programme, the food security packs, drought emergency recovery, out-grower schemes and support to Nitrogen Chemicals of Zambia (NCZ). Output subsidies are those

expenditures allocated to the Food Reserve Agency to purchase maize locally or externally. Finally, growth enhancing programmes include land development, livestock restocking and disease control, the rural investment fund, the rehabilitation and construction of earth dams and fisheries development. Figure III shows the funding trends across the three main categories. The results indicate that input and output subsidies have dominated poverty reduction and agricultural development programmes. This poses questions about the sustainability of such expenditure patterns and whether they contribute to long term agricultural growth, given that limited resources are directed towards growth enhancing measures.

Figure III: Trends in the share of agricultural resources allocated to subsidies and growth enhancing programs, 2001 – 2006, Zambia



Salient features

1. Budget allocations to agriculture provide a statement of government's intent. Since 2000, allocations for agriculture have ranged between 4.5% and 9% of total government spending. Over the past three years, they have hovered in the range of 5% to 6%. If Zambia is to meet the 10% target set in the Maputo Declaration, these levels will need to increase significantly over the coming years.

2. Analysis of actual budget disbursement reveals that allocations offer only a rough guide to actual government spending priorities. Since 2000, actual spending on agriculture has ranged from 55% to 119% of total authorisations, while spending above and below authorisations varies significantly by line item. While spending on the fertiliser support programme (FSP) tends to overshoot authorised levels, recurrent departmental charges (RDC) tend to fall consistently below authorised levels. These disparities suggest that the budget authorisation process is only a small part of the decision-making machinery affecting resource flows. Improved transparency and accountability in government budgeting require increased focus on decisions affecting the release of authorised funds.

3. The quality of public spending matters as much as the quantity. In some instances, government spending operates at cross-purposes to stated agricultural policy. Despite a stated policy of promoting crop diversification, budget allocations indicate an overwhelming focus on maize. Likewise, the subsidies currently administered by the Food Reserve Agency (FRA) sometimes conflict with government goals of stimulating private trade. In spite of a stated policy emphasis on irrigation development actual investment allocations remain small. In general, government investment in public goods has diminished as a share of budget outlays in favour of an increasing preference for subsidy payments to private individuals, particularly through fertiliser and maize price supports. While assessment of returns to alternative public expenditures is beyond the scope of this paper, rough indications are that declines in public research funding may compromise the technology development pipeline in key food security crops.

The agricultural sector plays a crucial role in Zambia's overall economy. As such, agricultural growth and increased competitiveness will remain the main avenues for poverty reduction and increased rural incomes. There is no doubt that public agricultural investments are associated with growth in per capita agricultural GDP. Therefore, expenditure management is one instrument government can use to achieve the required growth in this important sector. Given the fluctuations between approved and actual expenditures, policy analysis should dwell more on the latter.

Source: Adapted from Govereh, Shawa and Malawo (2006)

Conclusion

Agriculture has potential to contribute to equitable growth for the SADC region despite its poor performance

Despite its relatively low contribution to GDP (8%), agriculture has the potential to become an engine for broad based and equitable economic growth in the SADC region. This is because agriculture's considerable potential to contribute to the growth of the region and to poverty alleviation has not yet been exploited. This is especially so in the lesser developed countries of the region where agriculture's contribution to GDP is more than 30%. For agriculture to play a more meaningful role in contributing to economic growth and poverty alleviation, the sector's performance needs to improve considerably.

Agriculture's performance in terms of productivity, achieving food security and generating income has not been impressive in the SADC region. For example, yield per hectare for major crops such as maize remains lower than the average in developing countries (2,000kg/ha for SADC versus 8,000kg/ha for developing countries as a whole). Livestock production has increased only marginally in the last decade. The food security situation in the region remains undesirable with about 35% of the region's population undernourished. The average proportion of undernourished people in the region has remained almost constant since the 1990s, but some individual countries (such as the Democratic Republic of Congo) have experienced increases of up to 40% in the proportion of undernourished people.

Although net agricultural production has more than doubled in the last four decades, net per capita production has decreased by 40% over the same period. Agricultural growth rates have averaged about 2.6%, which is almost the same as the 2.4% growth rate in population. This suggests that the region's agricultural sector has not performed well in terms of producing sufficient food for the region's population.

The growth rate of 2.6% in SADC's agricultural sector is far lower than the 6% growth rate proposed in NEPAD's CAADP. Raising the agricultural growth rate to 6% will require substantial increases in productivity and will involve exploiting opportunities for crop diversification to include higher-valued crops. To achieve higher levels of agricultural productivity will require attention to both input and output market development as input intensification and market development are highly synergistic. Therefore, a holistic and comprehensive programme to achieve rapid productivity growth in the region requires progress in both input and output market development.

However, while overall agricultural growth will undoubtedly be an effective engine for both economic development and poverty reduction in the region, the form and pathway that this growth takes will have a strong bearing on its effectiveness in reducing rural poverty. The challenge for countries in the region is to identify specific agricultural and rural development needs, and to focus investment in areas that will achieve optimal impact on food security and poverty reduction.

Reducing poverty in the SADC region requires higher agricultural performance

Poverty is pervasive in the SADC region with 40% (86 million people) of the region's population living on less than a dollar a day. Most SADC countries are unlikely to achieve the target of 6% growth in the agricultural sector and the millennium development goal of reducing poverty and food insecurity by half by 2015 unless there is a dramatic increase in the agricultural sector's performance in the next few years. Most of the poverty in the region is rural, therefore agriculture needs to play a major role in reducing the proportion of poor people. The majority of the poor in the SADC region are in the low-income countries of the DRC, Lesotho, Madagascar, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. These countries account for more than 70% of the total population but only about 15% of the total GDP of the region.

Experience from other regions suggests that agriculture can be an effective vehicle for reducing poverty (Norton, 2004). The high levels of poverty in the region suggest that agriculture has not yet reached its full potential in terms of contributing to poverty reduction in the region. For agriculture to make a significant contribution to poverty reduction, productivity in the sector will have to increase substantially. This calls for the identification of factors currently preventing the agricultural sector from realising its potential productivity and taking steps to remove the constraints. Such constraints are likely to include both output and input markets.

Increasing investment in productivity-enhancing inputs is crucial for improving agriculture's performance

Improving the performance of the agricultural sector in SADC will not be possible without a significant increase in investment in productivity-enhancing inputs such as infrastructure (including

irrigation and storage), human capital (extension, education and health) and improved technology (seed, fertiliser and so on). The level of use of most of these inputs is among the lowest in the world. For example, the average amount of fertiliser used in the region is currently 16 kg per ha, lagging behind Latin America, South and Southeast Asia which have averages of 86, 104 and 142 kg per ha respectively. Although fertiliser consumption has increased overall in the region by about 2.5% over the last decade, it has decreased in some of the SADC countries. The proportion of cultivated land under irrigation in SADC has increased by 5.1% to 5.9 % in the period 1980-2003 but the proportion remains the second lowest in the world. Experience from other developing regions of the world (such as Asia) suggests that significant progress in growing the agricultural sector is only possible with an expansion in the area under irrigation. Although the SADC region is not well endowed with water resources, the area under irrigation can be expanded and this requires additional investments in irrigation infrastructure.

Issues for further investigation

This review has covered a wide range of issues related to agriculture and poverty in the SADC region. However, due to lack of information and time limitations, it was not possible to address all the important issues including the following:

Livestock production:

The review has established that production in the livestock sector has not kept pace with population growth. Nevertheless, this sub-sector is gaining importance in the region. This is particularly true for the poultry sub-sector. An important question to be addressed is, 'What measures need to be taken to raise the growth of the livestock sector to the level required to, at least, meet the consumption needs of SADC's population?'

Fertilizer use:

The review established that total fertiliser use in the SADC region has increased marginally in the last decade but some countries experienced a decline in fertiliser use. Why has fertiliser use decreased in these countries? What are the explanations for the marginal increase in the consumption of fertiliser in the SADC region? What measures should be (or are being) taken by governments to promote fertiliser use among smallholder farmers in the region? What contribution does fertiliser make to profitability in the production of major food crops and where would we expect to find high uptake of fertiliser? How do complementary inputs such as improved seed and irrigation water affect profitability related to fertiliser use in the region?

Another key question is how government policies and programmes should be re-designed to achieve substantial increases in fertiliser use in the region. It is critical to identify cost-effective strategies for promoting fertiliser use in the region and to seek a regionally coordinated framework for implementing these strategies. Since the productivity boost from fertiliser use is often enhanced by irrigation, it will be critical to identify cost-effective investments in irrigation that will expand

the benefits from (and incentives for) adopting fertiliser by smallholder farmers. A critical aspect in intensifying fertiliser use will be to review what has worked in the past and why; what can be done to build on past successes; and how past mistakes can be overcome in the future.

Trade:

It is encouraging to note that intra-SADC trade in agricultural commodities is increasing and that the creation of a free trade area in the region is likely to increase the level of intra-SADC trade in agricultural commodities. However, the region remains a net importer of food and exports of major cash crops have either declined or remained stagnant. Therefore, it is important to address the following questions. What further measures are required to promote intra-SADC trade? What does SADC need to do to increase production and export of cash crops? Can and should SADC become a net food exporter and, if so, how can this be achieved?

Areas of investment in agriculture:

Most government in the SADC region have recognised the importance of investing in the agricultural sector and have undertaken to increase agricultural spending. However, this review has not identified specific areas in agriculture in which governments need to focus their spending to generate maximum benefits. Furthermore, the information provided in the review on government spending is not comprehensive as it covers only one (Zambia) in some detail. Thus, the review has not established the nature and extent of government spending in agriculture for the SADC region as a whole. An analysis of government spending in agriculture encompassing the entire region is important as it would identify areas requiring urgent attention for the region to achieve the required 6% annual growth in its agricultural sector.

References

African Development Bank (ADB) and the Organisation for Economic Cooperation and Development (OECD), 2003. *African economic outlook 2002/2003.* Paris, France.

African Union (AU), 2003. Assembly of the African Union: Maputo Declaration [online]. 10-12 July. Available from http://www.africaunion.org/root/au/Documents/Decisions/hog/12HoGAssembly2003.pdf(Assembly/AU/Decl.7 (II).

Block, S. 1994. A new view of agricultural productivity in sub-Saharan Africa. *American Journal of Agricultural Economics, (76, August), pp 619-624.*

Bruinsma, J. ed. 2003. World agriculture: *towards 2015/2030: An FAO perspective.* Rome and London: FAO/Earthscan.

Common Market for Eastern and Southern Africa (COMESA), 2003. Discussion paper on trade policy compatibility and impact assessment of economic partnership agreements and preliminary adjustment scenarios.

Cohen, M.J. 2006. Implementing the voluntary guidelines: challenges and options. Entwicklung & Landlicher Raum.

Coudouel, A., J. Hentschel and Q. Wodon, 2002. *Poverty measurement and analysis: PRSP Sourcebook.* Washington, D.C.: World Bank.

Chr Michelsen Institute Report. 2006. Mid-Term Review of the Angola Programme of Norwegian People's Aid. CMI Report R 2006:1. 101p. Writen by Jan Isaksen, Ingrid Samset and Fernando Pacheco, CMI

Elias, V. 1985. Government expenditures on agriculture and agricultural growth in Latin America. Research Report 50. Washington, D.C.: International Food Policy Research Institute.

Fan, S. and P. Pardey. 1998. Government spending on Asian agriculture: trends and production consequence. In: *Agricultural public finance policy in Asia. Tokyo:* Asian Productivity Organization.

Fan, S., P. Hazell and S. Thorat, 2000. Government spending, agricultural growth and poverty in rural India. *American Journal of Agricultural Economics.* 82(4).

Fan, S., L. Zhang and X. Zhang. 2000. Growth and poverty in rural China: the role of public investment. Environment and Production Technology Division Discussion Paper 66. Washington, D.C.: International Food Policy Research Institute.

Fan, S. and Rao, N. 2006. Public spending in developing countries: trends, determination and impact. EPTD Discussion Paper No. 99. Washington, D.C.: International Food Policy Research Institute.

FAO/World Bank, 2001. Farming systems and poverty: improving farmers' livelihoods in a changing world. Rome and Washington D.C.: FAO and World Bank.

Govereh, J., J. Shawa and E. Malawo, 2006. Raising productivity of public investments in Zambia's agricultural sector [online]. Lusaka: Ministry of Agriculture and Cooperatives / Michigan State University. Available from: http://www.aec.msu.edu/agecon/fs2/zambia/wp_20.pdf

Human Science Research Council of South Africa. 2004. *Fact sheet, Poverty in South Africa.* Pretoria, South Africa. http:// www.sarpn.org.za/documents/d0000990/index.php.

International Fund for Agricultural Development (IFAD), 2003. Achieving the millennium goals by enabling the rural poor to overcome their poverty. Discussion paper.

African Union New African Partnership for Africa's Development (AU/NEPAD), 2003. Comprehensive Africa Agriculture Development Programme (CAADP). NEPAD, Midrand, South Africa

National Planning Commission, Namibia. 2007. National household income survey. Windhoek, Namibia. http://www.npc.gov.na/publications/prenhies03_04.pdf.

Norton, R.D. 2004. Agricultural policy: concepts and experience. Food and Agricultural Organization of the United Nations (FAO). Wiley Publishers, Rome

Otte, M. J. and P. Chilonda, 2002. *Cattle and small ruminant production systems in sub-Saharan Africa: a systematic review.* FAO, Rome.

Pardey, P.G. and N.M. Beintema, 2001. Slow magic: agricultural R&D a century after Mendel. IFPRI Food Policy Report. Washington, D.C.: International Food Policy Research Institute.

Pratt, A.N. and X. Diao, 2006. Exploring growth linkages and market opportunities for agriculture in southern Africa. DSGD Discussion Paper No. 42. Washington, D.C. International Food Policy Research Institute.

Rao, D.S.P. 1993. Inter-country comparisons of agricultural output and productivity. FAO Economic and Social Development Paper 112. Rome: FAO.

Republic of Mozambique 2004. Review of the economic and social plan for 2003. March 2004., Mozambique

Resnick, D. 2004. Smallholder African agriculture: progress and problems in confronting hunger and poverty. DSGD discussion paper No. 9. Washington, D.C.: International Food Policy Research Institute.

Rostow, W.W. 1960. "The Five Stages of Growth - A Summary," Chapter 2, *The Stages of Economic Growth: A Non-Communist Manifesto.* Cambridge University Press, Cambridge,

Southern African Development Community (SADC) 2006) SADC Regional Indicative Strategic Development Plan (RISDP), Gaborone, Botswana. Available form: http://www.sadc.int/english/documents/risdp/chapter3.php

Shapouri, S. and S. Rosen. 2001. Issues in food security: toll on agriculture from HIV/AIDS in sub-Saharan Africa. Agriculture Information Bulletin. Number 765, p9.

UNAIDS/WHO. 2006. Report on the global AIDS epidemic.

United Nations Conference on Trade and Development (UNCTAD), 2002. Intra-trade groups as a percentage of total exports of each trade grouping [online]. Geneva, Switzerland. Available from: http://www.unctad.org.

United Nations. 2005. Resident Coordinator's Report-Mauritius and Seychelles. Port Louis, Mauritius. http://www.unctdatabase.undg.org/

World Bank. 2006. World Development Indicators. Washington, D.C.: World Bank.

World Bank. 2000-07. Development Reports. World Bank Publications. Washington DC.

Zepeda, L. ed. 2001. Agricultural investment and productivity in developing countries. FAO economic and social development paper 148. Rome: FAO.

Databases

FAO 2006a. FAOSTAT data [online]. Rome: Food and Agriculture Organization of the United Nations. Available from: http://faostat.external.fao.org/default.jsp

FAO 2006b Global Livestock Production and Health Atlas [online]. Rome: Food and Agriculture Organization of the United Nations. Available from: http://www.fao.org/ag/aga/glipha/index.jsp

FAO/Aquastat [online]. Rome: Food and Agriculture Organization of the United Nations. Available from: http://www.fao.org/ag/agl/aglw/aquastat/dbase/index.stm

World Bank. Millennium Development Goals (MDG) database [online]. Washington, D.C.: World Bank. Available from: http://www.developmentgoals.org/poverty.htm

World Bank: http://devdata.worldbank.org/data-query

COMESA, http://www.comesa.int/trade/multilateral/epa/Trade_policy/

Appendix Tables

Table A1: Trends in Gross Domestic Product in the SADC region

Country	GDP		Annual growth rate (%)					
	Million US$ (2005)	% of total GDP	1990 -2000	2001	2002	2003	2004	2005
Congo, Dem. Rep.	5,251	2.3	-5.6	-2.1	3.5	5.7	6.8	6.6
Lesotho	988	0.4	3.4	3.2	3.5	3.1	3.1	1.2
Madagascar	4,340	1.9	1.7	6.0	-12.7	9.8	5.3	4.6
Malawi	1,986	0.9	3.4	-5.0	2.9	6.1	7.1	2.6
Mozambique	5,773	2.5	5.6	13.1	8.2	7.9	7.5	7.7
Tanzania	12,646	5.4	2.9	6.2	7.2	7.1	6.7	7.0
Zambia	4,086	1.8	0.7	4.9	3.3	5.1	5.4	5.1
Zimbabwe	5,488	2.4	0.9	-2.7	-4.4	-10.4	-4.2	-7.1
Low income	***35,070***	***15.1***	***0.8***	***4.9***	***3.1***	***6.9***	***6.4***	***6.1***
Angola	14,197	6.1	0.8	3.1	14.4	3.4	11.1	14.7
Botswana	6,741	2.9	5.2	5.2	5.0	6.7	4.9	3.8
Mauritius	5,447	2.3	5.3	5.6	2.9	2.9	4.4	4.5
Namibia	4,231	1.8	4.2	2.4	6.7	3.5	6.0	3.5
South Africa	159,738	68.7	1.8	2.7	3.7	3.0	4.5	4.9
Swaziland	1,548	0.7	3.1	1.8	2.9	2.4	2.1	1.8
Middle income	***191,902***	***82.6***	***2.0***	***2.9***	***4.4***	***3.1***	***4.9***	***5.5***
SADC	232,460	100.0	1.8	3.0	3.9	3.2	4.9	5.2

Source: World Bank (2006)

Table A2: Trends in GDP per capita income (constant 2000 US$) in the SADC region

Country	GDP per capita income			Annual growth rate (%)					
	1990	2000	2005	1990 -2000	2001	2002	2003	2004	2005
Congo, Dem. Rep.	203	86	91	-8.2	-4.7	1.2	2.4	3.5	3.4
Lesotho	386	481	550	2.2	2.7	3.2	3.1	3.2	1.3
Madagascar	271	239	233	-1.2	3.3	-15.4	7.2	2.2	1.7
Malawi	131	151	154	1.4	-7.3	0.7	3.5	5.5	0.0
Mozambique	163	211	292	2.6	10.9	5.6	6.1	5.3	5.8
Tanzania	259	261	330	0.1	4.2	5.1	4.9	4.7	5.1
Zambia	361	303	350	-1.7	2.6	1.6	3.5	3.7	3.2
Zimbabwe	637	587	422	-0.8	-3.4	-5.1	-11.0	-4.6	-7.7
Low income	***264***	***220***	***234***	***-1.8***	***1.0***	***-0.7***	***1.3***	***2.4***	***1.8***
Angola	804	660	891	-2.0	0.3	11.3	0.4	8.0	11.5
Botswana	2,222	2,994	3,819	3.0	4.5	4.7	6.7	5.0	4.0
Mauritius	2,532	3,762	4,364	4.0	4.4	2.1	1.9	3.4	3.3
Namibia	1,619	1,802	2,083	1.1	0.5	5.0	2.2	4.7	2.4
South Africa	3,152	3,020	3,535	-0.4	0.9	2.5	1.9	5.2	5.6
Swaziland	1,330	1,329	1,369	0.0	-0.4	1.0	0.7	0.8	0.8
Middle income	***2,551***	***2,456***	***2,851***	***-0.4***	***0.9***	***2.8***	***1.6***	***4.7***	***5.2***
SADC	943	870	965	-0.8	0.8	1.8	1.2	3.2	3.5
SSA	525	508	560	-0.3	1.2	1.0	1.7	2.8	3.1

Source: World Bank (2006)

Table A3: Percentage growth in Agricultural GDP by country in SADC

Country	GDP (USD million)	Agric GDP (USD million)	% of GDP	Percentage annual growth in agricultural GDP					
				1990 -2000	2001	2002	2003	2004	2005
Angola	14197	940	6.6	-2.8	18.0	13.3	11.7	14.8	6.1
Botswana	6741	155	2.3	-1.1	3.6	-0.7	1.4	2.8	4.0
Congo, Dem. Rep.	5251	2160	41.1	0.6	-4.2	0.5	1.5	0.5	3.3
Lesotho	988	138	14.0	0.6	0.0	-4.1	-1.4	0.0	0.7
Madagascar	4340	1110	16.5	1.7	4.0	-1.0	1.0	3.8	1.8
Malawi	1986	594	29.9	7.5	-5.9	2.6	6.0	2.7	-9.0
Mauritius	5447	288	5.3	-1.7	32.2	4.6	-15.4	3.3	3.6
Mozambique	5773	1360	23.6	2.3	9.5	11.2	8.3	8.5	7.1
Namibia	4231	348	8.2	4.2	-10.1	9.9	3.9	-3.2	3.6
South Africa	159738	4110	2.6	0.7	-3.3	6.5	-2.2	-1.8	4.8
Swaziland	1548	147	9.5	0.4	-9.3	1.5	2.9	1.4	2.1
Tanzania	12646	4850	38.4	3.1	5.6	5.0	4.1	5.7	5.4
Zambia	4086	695	17.0	3.2	-2.6	-1.8	5.0	4.3	3.0
Zimbabwe	5488	754	13.7	3.2	-3.4	-22.8	-1.0	-2.9	-10.0
SADC	232460	17649	7.6	2.0	1.1	1.8	2.5	3.2	3.1

Source: World Bank (2006)

Table A4: Trends in relative sectoral contribution to GDP in SADC region (%)

Country	Agriculture			Industry			Manufacturing			Services		
	1990	2000	2005	1990	2000	2005	1990	2000	2005	1990	2000	2005
Congo, Dem. Rep.	31.0	50.0	46.0	29.0	20.0	25.0	11.0	5.0	6.0	40.0	30.0	29.0
Lesotho	24.0	19.0	17.0	33.0	41.0	41.0	14.0	17.0	19.0	43.0	40.0	41.0
Madagascar	29.0	29.0	28.0	13.0	14.0	16.0	11.0	12.0	14.0	59.0	56.0	56.0
Zambia	21.0	22.0	19.0	51.0	25.0	25.0	36.0	11.0	12.0	28.0	52.0	56.0
Zimbabwe	16.0	18.0	22.0	33.0	25.0	28.0	23.0	16.0	16.0	50.0	57.0	50.0
Tanzania	46.0	45.0	45.0	18.0	16.0	18.0	9.0	7.0	8.0	36.0	39.0	38.0
Malawi	45.0	40.0	35.0	29.0	18.0	19.0	19.0	13.0	13.0	26.0	43.0	46.0
Mozambique	37.0	26.0	23.0	18.0	27.0	30.0	10.0	13.0	14.0	44.0	47.0	47.0
Low income	***28.1***	***30.6***	***28.7***	***24.6***	***19.2***	***20.1***	***10.7***	***10.0***	***9.6***	***36.6***	***40.3***	***35.1***
Botswana	5.0	3.0	3.0	61.0	51.0	51.0	5.0	5.0	4.0	34.0	46.0	46.0
Mauritius	13.0	6.0	6.0	33.0	31.0	28.0	25.0	24.0	20.0	54.0	63.0	66.0
Namibia	12.0	11.0	10.0	38.0	28.0	32.0	14.0	11.0	13.0	50.0	61.0	58.0
South Africa	5.0	3.0	3.0	40.0	32.0	31.0	24.0	19.0	19.0	55.0	65.0	66.0
Angola	18.0	6.0	8.0	41.0	72.0	66.0	5.0	3.0	4.0	41.0	22.0	26.0
Swaziland	13.0	16.0	12.0	42.0	45.0	48.0	35.0	36.0	37.0	45.0	40.0	40.0
Middle income	***3.7***	***3.2***	***3.0***	***31.6***	***29.8***	***30.3***	***15.7***	***14.9***	***14.3***	***49.0***	***52.1***	***53.7***
SADC[1]	7.9	7.8	7.3	30.4	28.0	28.6	14.8	14.1	13.5	46.8	50.1	50.6
Sub-Saharan Africa	20.0	18.0	17.0	34.0	30.0	32.0	17.0	13.0	14.0	47.0	51.0	51.0
LDC	37.0	33.0	28.0	21.0	24.0	27.0	11.0	10.0	11.0	43.0	43.0	45.0

Source: World Bank (2006)

Table A5: Trends in human population in the SADC region

Country	Actual					Projected		
	1980	1990	2000	2004	1990 - 2000 (%)	2010	2015	2020
Congo, Dem Republic of	27,909	37,370	48,571	54,417	2.7	*64,714*	*74,160*	*84,418*
Lesotho	1,277	1,570	1,785	1,800	1.3	*1,757*	*1,713*	*1,663*
Madagascar	9,048	11,956	15,970	17,901	2.9	*21,093*	*24,000*	*27,077*
Malawi	6,183	9,456	11,370	12,337	1.9	*13,796*	*15,165*	*16,668*
Tanzania, United Rep of	18,838	26,068	34,837	37,671	2.9	*41,931*	*45,909*	*49,784*
Zambia	5,977	8,200	10,419	10,924	2.4	*11,768*	*12,670*	*13,558*
Zimbabwe	7,226	10,467	12,650	12,932	1.9	*13,024*	*13,031*	*12,963*
Mozambique	12,084	13,465	17,861	19,182	2.9	*21,009*	*22,537*	*24,004*
Low income	88,542	118,552	153,463	167,164	2.6	189,092	209,185	230,135
Angola	7,048	9,340	12,386	14,078	2.9	*16,842*	*19,268*	*22,036*
Botswana	987	1,354	1,725	1,795	2.5	*1,767*	*1,712*	*1,665*
Mauritius	966	1,057	1,186	1,233	1.2	*1,294*	*1,340*	*1,382*
Namibia	1,018	1,409	1,894	2,011	3.0	*2,120*	*2,196*	*2,276*
South Africa	29,140	36,848	44,000	45,214	1.8	*44,939*	*44,266*	*43,683*
Swaziland	596	847	1,044	1,083	2.1	*1,084*	*1,075*	*1,062*
Middle income	39,755	50,855	62,235	65,414	2.0	68,046	69,857	72,104
SADC	128,297	169,407	215,698	232,578	2.4	*236,131*	*255,130*	*275,253*
SSA	378,067	504,578	653,779	716,793	2.6	*815,105*	*901,904*	*992,528*

Source: FAO (2006a)

Table A6: Rural population as proportion (%) of the total population

Country / region	Estimates				Projected		
	1980	1990	2000	2005	2010	2020	2025
Congo, Dem Republic of	71	72	70	67	*64*	*57*	*53*
Lesotho	87	83	82	82	*81*	*77*	*74*
Madagascar	81	76	74	73	*71*	*66*	*63*
Malawi	91	88	85	83	*80*	*75*	*72*
Mozambique	87	79	68	62	*57*	*47*	*44*
Tanzania, United Rep of	85	78	68	62	*58*	*49*	*46*
Zambia	60	61	65	64	*62*	*56*	*53*
Zimbabwe	78	71	66	64	*62*	*55*	*52*
Low income	***79***	***75***	***70***	***67***	***64***	***57***	***53***
Angola	80	74	67	63	*59*	*51*	*48*
Botswana	82	58	50	47	*45*	*40*	*37*
Mauritius	58	60	57	56	*55*	*50*	*47*
Namibia	77	73	69	67	*64*	*57*	*53*
South Africa	52	51	45	42	*40*	*35*	*32*
Swaziland	82	77	77	76	*75*	*70*	*67*
Middle income	***59***	***57***	***51***	***48***	***46***	***41***	***39***
SADC	72	69	64	61	*58*	*52*	*48*
SSA	77	72	66	63	*60*	*54*	*51*

Source: FAO (2006a)

Table A7: Agriculture value added per worker (constant 2000 US$)

Country / region	Year					Annual growth rate (%)				
	1990	2000	2001	2002	2003	1990 -2000	2000	2001	2002	2003
Congo, DR	186	165	156	154	153	-1.2	-12.2	-5.5	-1.3	-0.6
Lesotho	557	518	520	499	491	-0.7	2.2	0.4	-4.0	-1.6
Madagascar	188	179	182	175	173	-0.5	-1.1	1.7	-3.8	-1.1
Malawi	74	136	126	128	134	6.3	3.8	-7.4	1.6	4.7
Mozambique	123	117	126	137	148	-0.5	-12.7	7.7	8.7	8.0
Tanzania	246	265	274	283	290	0.7	1.9	3.4	3.3	2.5
Zambia	178	211	205	201	210	1.7	1.0	-2.8	-2.0	4.5
Zimbabwe	268	326	313	243	241	2.0	2.8	-4.0	-22.4	-0.8
Low income	***228***	***240***	***238***	***228***	***230***	***0.5***	***-0.5***	***-0.8***	***-4.3***	***1.1***
Angola	208	127	146	161	175	-4.8	7.6	15.0	10.3	8.7
Botswana	579	399	410	406	412	-3.7	-1.5	2.8	-1.0	1.5
Mauritius	3,803	3,775	5,069	5,398	4,727	-0.1	-22.0	34.3	6.5	-12.4
Namibia	787	1,079	976	1,073	1,122	3.2	7.9	-9.5	9.9	4.6
South Africa	1,912	2,271	2,248	2,456	2,470	1.7	6.6	-1.0	9.3	0.6
Swaziland	1,296	1,237	1,124	1,142	1,180	-0.5	-3.7	-9.1	1.6	3.3
Middle income	***1,431***	***1,481***	***1,662***	***1,773***	***1,681***	***0.3***	***-9.1***	***12.2***	***6.6***	***-5.2***
SADC	743	772	848	890	852	0.4	-7.7	9.9	4.9	-4.3
Sub-Saharan Africa	316	330	338	341	328	0.4	0.3	2.4	0.9	-3.8
High income: OECD	15,003	23,539	23,567	24,378	25,372	4.6	7.3	0.1	3.4	4.1
LDC	222	244	251	251	234	0.9	1.2	2.9	0.0	-6.8

Source: World Bank (2006)

Table A8: Role of agriculture in sustaining livelihoods and employment in the SADC region (2004)

Country / region	Total Population	Agricultural population		Total economically active population		Economically active population in agriculture	% of total economically active
	Number	Number	%	Number	%		
Congo, DR	54,417	33,355	61	22,644	42	13,880	61
Lesotho	1,800	691	38	721	40	277	38
Madagascar	17,901	12,974	72	8,582	48	6,220	72
Malawi	12,337	9,327	76	5,876	48	4,777	81
Mozambique	19,182	14,538	76	10,041	52	8,065	80
Tanzania	37,671	28,729	76	19,337	51	15,214	79
Zambia	10,924	7,313	67	4,597	42	3,078	67
Zimbabwe	12,932	7,787	60	5,905	46	3,555	60
Low income	***167,164***	***114,714***	***69***	***77,703***	***46***	***55,066***	***71***
Angola	14,078	9,962	71	6,390	45	4,521	71
Botswana	1,795	783	44	808	45	352	44
Namibia	2,011	921	46	801	40	306	38
Mauritius	1,233	124	10	546	44	56	10
South Africa	45,214	5,621	12	18,897	42	1,570	8
Swaziland	1,083	343	32	376	35	119	32
Middle income	***65,414***	***17,754***	***27***	***27,818***	***43***	***6,924***	***25***
SADC	*232,578*	*132,468*	*57*	*105,521*	*45*	*61,990*	*59*
SSA	*716,793*	*421,075*	*59*	*319,038*	*45*	*192,916*	*60*

Source: FAO (2006a)

Table A9: National trends in HIV/AIDS and malnutrition

Country / region	HIV/AIDS incidence (% of population aged 15-49)			Malnutrition (% of children under 5 underweight)		
	2001	2003	2005	1992	1995	2000
Angola	3.7	3.9	3.7			
Botswana	38	37.3	24.1	..	..	12.5
Congo, Dem. Rep.	4.2	4.2		..	34.4	..
Lesotho	29.6	28.9		15.8	16	18
Madagascar	1.3	1.7		40.9	34.1	..
Malawi	14.3	14.2		27.6	29.9	25.4
Mauritius				..	14.9	
Mozambique	12.1	12.2	16.1	..	27	26
Namibia		21.3	19.6	26.2	..	24
South Africa	20.9	21.5	18.8	..	9.2	11.5
Swaziland	38.2	38.8	33.4	..	..	10.3
Tanzania	9	8.8	6.5	28.9	..	29.4
Zambia	16.7	16.5		25.2	..	25
Zimbabwe	24.9	22.1	20.1	..	..	13
SADC region	18.0	18.0		27.4	23.6	19.5
Sub-Saharan Africa	7.3	7.2				
Developing countries	2.1	2.1		..	..	43.4
Developed countries	0.3	0.4				

Source: FAO (2006a)

Table A10: National trends in life expectancy, infant mortality and adult literacy

Country/region	Life expectancy (years)					Infant mortality rate (under 5 deaths per 1000 live births)					Adult literacy rate (%)	
	1970	1980	1990	2000	2004	1970	1980	1990	2000	2004	1990	2004
Angola	37.2	39.8	39.8	40.4	41.2	300	265	260	260	260	..	67.4
Botswana	54.9	61.8	64.5	42.7	35.5	142	84	58	101	116	68.1	81.2
Congo, Dem. Rep.	45.2	47.7	45.5	42.4	43.7	245	210	205	205	205	47.5	67.2
Lesotho	49.2	53.2	57.4	41.2	35.6	188	140	104	105	112	78.0	82.2
Madagascar	44.1	48.2	51.0	54.8	55.6	180	175	168	137	123	58.0	70.7
Malawi	40.8	44.9	45.7	40.4	40.2	330	265	241	188	175	51.8	64.1
Mauritius	62.4	66.0	69.4	71.7	72.7	86	42	23	18	15	79.8	84.4
Mozambique	39.8	42.8	43.2	42.6	41.8	278	230	235	178	152	33.5	..
Namibia	52.8	58.1	61.7	52.3	47.5	135	108	86	69	63	74.9	85.0
South Africa	53.1	57.1	61.9	47.8	44.6	..	91	60	63	67	81.2	82.4
Swaziland	46.1	51.6	56.6	45.4	42.2	196	143	110	142	156	71.6	79.6
Tanzania	48.5	53.7	53.5	46.8	46.2	218	175	161	141	126	62.9	69.4
Zambia	49.3	51.6	45.8	37.9	38.1	181	155	180	182	182	68.2	68.0
Zimbabwe	55.0	59.3	58.6	39.8	37.2	138	108	80	117	129	80.7	..
SADC region	48.5	52.5	53.9	46.2	44.4	201	156	141	136	134	65.9	75.1
Sub-Saharan Africa	44.6	48.1	49.2	46.1	46.2	240	199	185	173	168	50.6	..
Developing countries	47.8	52.5	56.1	58.1	58.7	209	178	147	128	122	48.6	61.7
Developed countries	70.8	73.6	75.9	78.0	78.7	30	17	11	..	7		

Source: World Bank (2006)

Table A11: Crops yields in the SADC region

Country/region	Cassava	Coffee, Green	Ground Nuts	Maize	Millet	Potatoes	Rice, Paddy	Seed Cotton	Sorghum	Tea	Tobacco Leaves	Wheat
Angola	9,582	19	328	540	403	3,218	1,807	1,000	0	0	943	1,667
Botswana	0	0	1,000	182	250	0	0	2,273	1,280	0	0	1,571
Congo, DR	8,114	390	778	779	667	4,633	755	429	635	700	463	1,220
Lesotho	0	0	0	833	0	16,667	0	0	868	0	0	1,672
Madagascar	6,211	335	815	1,788	0	5,614	2,478	1,033	500	1,170	698	2,381
Malawi	16,338	697	739	1,127	464	11,940	1,168	845	645	2,679	457	754
Mauritius	9,286	0	4,366	3,455	0	29,286	0	0	0	2,132	1,371	0
Mozambique	6,002	600	434	1,096	481	12,903	993	435	637	1,858	1,412	1,105
Namibia	0	0	420	1,435	300	0	0	1,457	300	0	0	6,154
South Africa	0	0	1,790	3,110	571	34,973	2,286	2,007	3,455	2,083	2,654	2,024
Swaziland	0	0	745	1,250	0	2,000	3,400	464	600	0	375	1,500
Tanzania	10,439	475	697	1,615	811	6,842	1,915	846	1,143	1,342	714	1,071
Zambia	5,800	1,323	336	1,924	663	9,167	1,170	1,127	613	1,500	1,067	6,429
Zimbabwe	4,368	1,429	577	458	333	15,909	2,400	736	571	3,667	1,558	4,000
SADC	8,339	380	644	1,579	508	11,873	1,238	793	1,047	2,109	807	2,102
SSA	8,745	489	825	1,440	670	8,261	1,462	903	819	1,973	844	1,791
Developed		1,081	3,163	8,303	1,218	19,416	6,671	2,468	3,991	1,746	2,224	2,987
Developing	10,954	750	1,406	3,168	799	15,491	3,966	1,825	1,128	1,309	1,553	2,828

Source: FAO (2006a)

Table A12: Yield of livestock products in the SADC region

Country / region	Beef	Cow milk	Eggs	Mutton & goat meat	Pig meat	Poultry meat
Angola	170.7	482.7	2.0	15.0	65.0	0.9
Botswana	200.0	350.0	1.8	12.5	50.0	0.8
Congo, Dem Republic of	155.6	833.3	3.3	11.3	44.1	0.6
Lesotho	130.0	250.0	2.8	9.5	50.0	0.8
Madagascar	127.5	281.6	1.3	14.0	70.0	1.2
Malawi	205.0	460.5	2.6	12.1	50.0	0.8
Mauritius	163.4	1,000.0	9.0	9.8	71.7	1.0
Mozambique	150.0	170.0	1.3	12.0	60.0	0.9
Namibia	234.1	419.2	0.1	16.3	55.0	1.2
South Africa	255.8	3,314.3	10.1	13.6	75.2	1.5
Swaziland	260.4	288.5	2.5	18.0	50.0	1.0
Tanzania, United Rep of	107.1	174.0	2.6	12.0	40.0	0.9
Zambia	160.0	300.0	4.0	12.2	44.0	1.0
Zimbabwe	225.0	310.0	3.2	12.1	55.0	1.2
SADC	187.1	519.4	4.5	13.2	61.0	1.4
SSA	144.0	375.4	3.6	12.6	49.9	1.2
Developing countries	165.6	1,065.9	10.1	13.7	73.3	1.4
Developed countries	259.6	4,795.4	15.1	16.8	86.7	1.8

Source: FAO (2006a)

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.

ReSAKSS SA Southern Africa

Regional Strategic Analysis and Knowledge Support System

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