

AGRICULTURAL SECTOR PERFORMANCE IN MALAWI

MATCHAYA, Greenwell **

NHLENGETHWA, Sibusiso *

CHILONDA, Pius*

Abstract

This paper charts the performance of the agriculture sector in Malawi for the period 2000 – 2013 (with particular attention paid to the last three to four years of the said period). In the quest to attain this aim the paper empirically focuses on the significance of mapping the performance of the sector in the form of trends against the baseline sectoral performance targets enlisted in the ASWAP, CAADP Framework and SADC RISDP. The consistent and concerted efforts by the Government of Malawi and development partners to meet the ASWAP, CAADP framework and SADC RISDP targets have resulted in the country making commendable economic growth and poverty alleviation. The country has been able to attain the 6% agricultural growth target despite the questionable quality of public expenditure. It is also interesting to note that changes in the agriculture sector appear to have had influence on incomes, poverty and malnourishment. The trend analysis led to the following findings; the growth in agricultural GDP and the annual GDP growth of the country surpassed the CAADP target of 6% annual growth and this culminated to an increase in production (cereal and livestock production) and productivity (land productivity) despite the fact that the country has not met the irrigation and fertiliser used targets. This increase in production and productivity may be earnestly attributed substantially public invested in the agriculture sector to meet the CAADP 10% target of the total budget to agriculture. However, this increase in agricultural GDP annual growth has not had a significant bearing on the country's battle to offset poverty; the country's GHI is still serious and the proportion of the population below the minimum dietary energy consumption is still high (23% on average) whilst the MDG I target stands at 20%. The major deduction from these findings is that there is a need for more concerted efforts in Malawi to refine agricultural growth investments; this can be carried out efficiently by developing a National Agriculture Plan (NAP) which will be a single policy tool that will guide investment and implementation of priorities in the sector.

Keywords

JEL Codes

1. Introduction

This paper charts the performance of the agricultural sector in Malawi since 2000s but places more emphasis on the recent past i.e. the 2011-2013 period. Another important part that comes with this section is the baseline document on the sectoral indicators of performance, which is a crucial set of information that will prove crucial in efforts to monitor future agricultural sector performance from now into the future. Monitoring of the agricultural sector is important and in fact every country that subscribes to the CAADP framework is required to strengthen its monitoring and evaluation systems upon

** Greenwell Matchaya, **Economics Researcher/ReSAKSS-SA Coordinator and Corresponding Author. International Water Management Institute. Email: g.matchaya@cgiar.org.

* Sibusiso Nhlengethwa * and Pius Chilonda, *International Water Management Institute

developing their national investment plans. For Malawi therefore a successful implementation of the ASWAP now and in future hinges on the sectors ability to monitor its operations and outcomes. The baseline that has been established herein is therefore of immense value going forward as they serve as a reference point for future JSRs and assessment of progress during the next decade of CAADP.

This chapter hence starts by presenting sectoral trends using selected indicators that are also CAADP consistent and goes further to establish trends in performance of the sector against national targets in several key indicators. Some of the indicators presented include the sector's progress towards the 10% public allocation in the agricultural sector, the 6% agricultural GDP growth rate, which is required if countries are to meaningfully reduce poverty, the progress towards irrigation as well as livestock targets and the country's progress towards achieving the Millennium Development Goal 1 which is about halving poverty. Thereafter an attempt is made to relate some of the emerging trends in input indicators with outcome indicators including poverty, hunger and malnutrition. At the end of the paper we present a summary of major findings.

2. Data sources and methodology

The data used in the analysis to achieve the objectives of this paper was drawn from the ReSAKSS-SA database constituting data collected from the countries under study in 2013 and the World Bank's Development Indicators (WDI) (World Bank, 2013).

The analysis of this paper was carried out at various levels, at country level and regional level for comparative reasons. The results are presented at aggregate level using descriptive statistics for the SADC region and for the three economic groups (SADC excluding South Africa, SADC Middle-Income countries and SADC Low-Income countries). These groups emanate from the World Bank classification of economies based on Gross National Income (GNI). The low income countries are characterised as agriculture based economies although some of these countries have significant mining activities. Conversely, the middle income countries have significant mining sectors and some are small countries with significant tourism sectors. In December 2012, the World Bank classified nine of the fifteen SADC countries as Middle-Income countries, these are namely; Angola, Botswana, Lesotho, Mauritius, Namibia, Seychelles, South Africa and Swaziland. The Low-Income countries are Democratic Republic of Congo (DRC), Madagascar, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe.

3. Agriculture performance

3.1. Progress towards National, CAADP and SADC RISDP Target

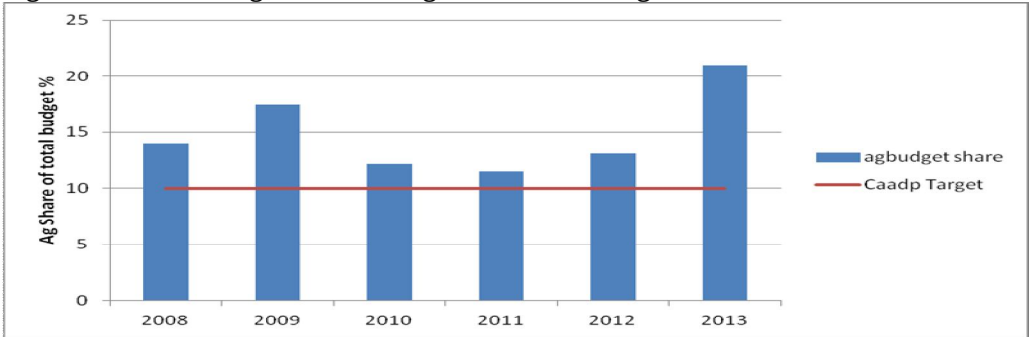
Domestically, the ASWAp, and the New Alliance document provide the frameworks that should guide investments in the agricultural sector. These agricultural investment plans, also outline indicators and targets that need to be monitored in order to understand how the sector is performing. Again, under CAADP, put together by the Africa Union's New Partnership for Africa's Development (AU/NEPAD) and signed by African states in 2003, African governments committed to achieving agricultural growth of at least 6%. In order to ensure that sufficient resources were made available for the CAADP implementation, countries signed the AU Maputo Declaration in 2003 in which they agreed to increase national budgetary resources to the agriculture sector to at least 10% of their respective national budget. The principle behind CAADP is to use agriculture-led growth to achieve the first MDG of halving poverty and hunger by 2015, a goal that is also set by SADC RISDP. The specific SADC RISDP targets for sustainable food

security and poverty reduction include: Achieving a GDP growth of at least 7% a year; Halving the proportion of the population living on less than US\$1 per day and who suffer from hunger between 1990 and 2015; Doubling cropland under irrigation from 3.5% to 7% as a percentage of the total by 2015; Increasing fertilizer consumption from 44.6 kilograms per hectare (kg/ha) of arable land to 65 kg/ha of arable land by 2015; Increasing cereal yield in kg/ha hectare from an average of 1,392 to 2,000 by 2015; Doubling the adoption rate of proven technologies such as improved seed varieties, and management of water and land by 2015; Increasing livestock production by at least 4% annually. Malawi’s advancement on some of the targets is presented below (see Chilonda et al 2013; Matchaya et al., 2013).

3.1.1. Progress towards the CAADP 10% Target

Following the Maputo declaration, the agricultural sector in Malawi has seen a dramatic increase in public agricultural spending and for the recent years, the agricultural sector has received more than 10% of the national budget and this has increased with the 2013 period recording an overwhelming 21% (see Figure 3.1).

Figure 3.1: Share of agricultural budget in national budget



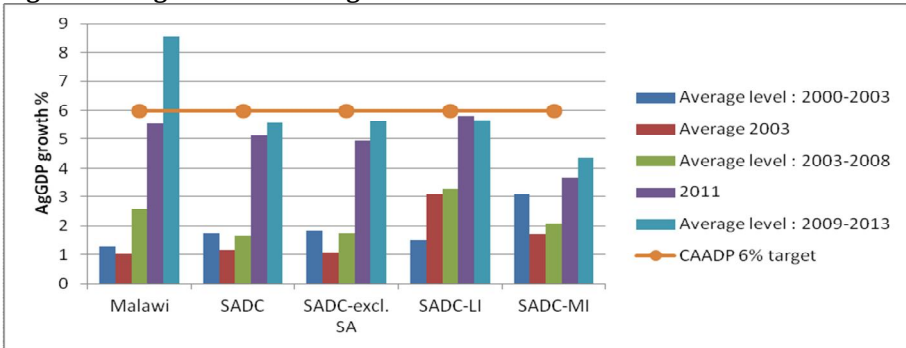
Source, Authors calculations based on ReSAKSS-SA data, 2013

This significant investment into the agricultural sector has been increasing over time albeit with annual variations. This is a good progress because by assumption, if the many rural poor are to emerge out of poverty, agricultural growth is paramount and investment in agriculture is key.

3.1.2. Progress towards the 6% agricultural GDP growth

The increase in public expenditure on agriculture is expected to spur agricultural growth because one factor that has deterred agricultural growth is low investment in the sector.

Figure 3.1: Agricultural GDP growth rate



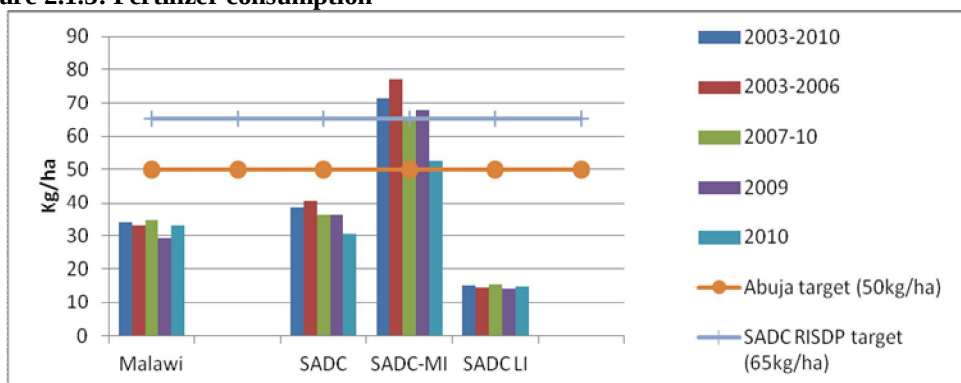
Source, Authors calculations based on ReSAKSS-SA data, 2013

Figure 3.2 shows that agricultural growth in Malawi has generally been below the 6% target level in the 2003-2008 period but has generally been above 6% in post 2008 period. This implies that Malawi is achieving the agricultural growth target which could originate from the increase in investments and could be good for poverty reduction, although the true nature of the linkages should be a subject for further research and analysis

3.1.3. Progress towards the 50-65kg/ha Fertilizer application requirement

One of the SADC RISDP targets requires that SADC countries increase their fertilizer consumption to 50kg per hectare (Abuja declaration) or to 65kg per hectare (SADC RISDP target) in recognition that fertilizer use in Sub Saharan Africa is generally low. Figure 3.3 shows progress in terms of fertilizer use for Malawi and other groups of the SADC countries.

Figure 2.1.3: Fertilizer consumption



Source, Authors calculations based on FAOSTAT, 2013

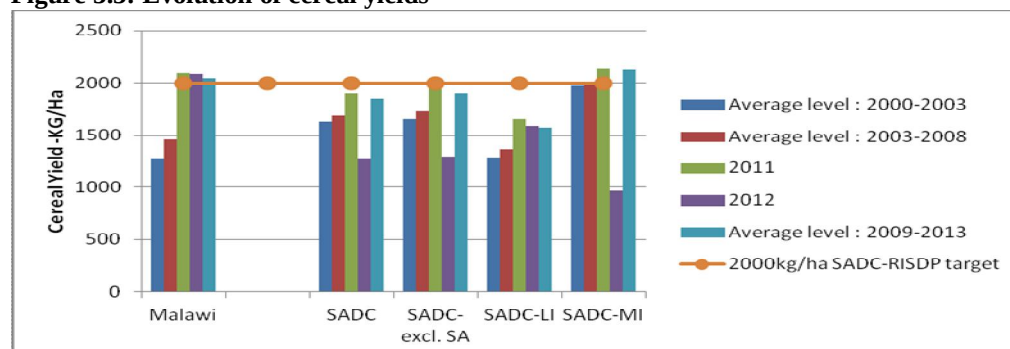
The major finding here is that while SADC Middle income countries have surpassed both the Abuja declaration and the SADC RISDP targets, Malawi's fertilizer consumption trails middle income countries and stands at just under 35 kg per hectare, but Malawi's fertilizer use in recent years has surpassed the SADC low income average. This implies that Malawi should step up efforts to increase fertilizer consumption either by encouraging the private sector because fertilizer supply is dominated by the public sector.

3.1.4. Progress towards the 2 tons per hectare cereal yields

Yields in the Southern African region are generally low for cereals yet cereals constitute the largest share of food crops that are traded on the continent. For the SADC region countries are required to increase their cereal yields to at least 2000 kg per hectare. Figure 3.4 presents Malawi's progress towards achieving this target and compares the performance with those of the SADC MI and SADC LI countries.

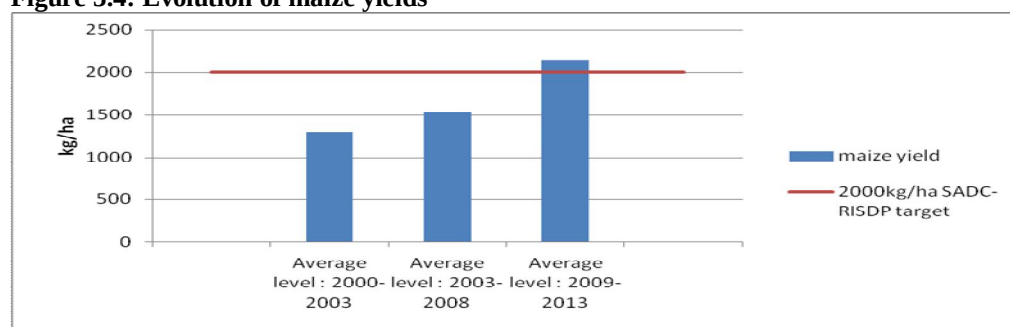
Figure 3.4 shows that over the past few years yields for cereals in Malawi have improved and reached the 2 tons per hectare target. Malawi just trails the middle income countries of the SADC by a very small margin. However this achievement of the target must never be taken as a reason to stop efforts to increase cereal yields better. In fact the average cereal yield is as high as 4 tons for other countries in the OECD and Asia implying that policy makers in Malawi must still find ways of increasing cereals productivity. The options lie in areas of improved seeds (transgenic/high yielding varieties), better water management (efficient irrigation), farm mechanization, and better complementary inputs (inorganic and organic fertilizers). Within the category of cereals, we have isolated maize owing to its undisputed importance as a staple food crop in the country.

Figure 3.3: Evolution of cereal yields



Source, Authors calculations based on FAOSTAT, 2013

Figure 3.4: Evolution of maize yields

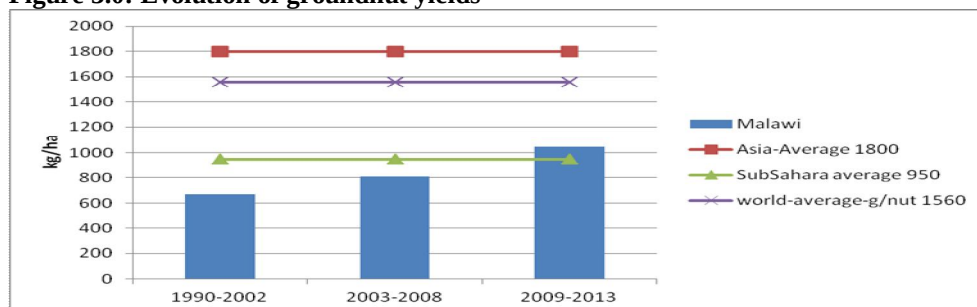


Source, Authors calculations based on FAOSTAT, 2013

Figure 3.5 shows that maize yield has varied annually between 2000 and 2013 but the trend has been positive. Maize yields have improved from an average of 1.3 tons/ha pre-CAADP period (2000-2003) to just over 2.1 tons (i.e. above the SADC RISDP target) (2009-2013). A number of policy changes of course took place in the post CAADP period including that the Malawi government renewed its emphasis on Farm Inputs Subsidy Program (FISP) from the 2004. The renewed emphasis on the subsidy program implied an increase in fertilizer consumption and availability of better seeds especially for maize.

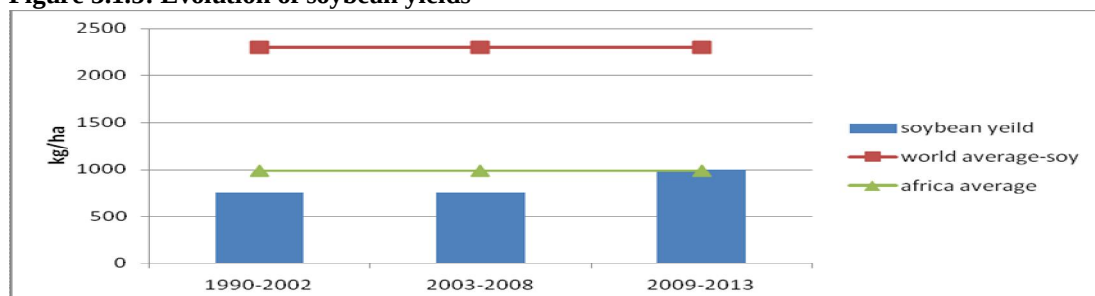
3.1.5. Yields of other crops

Legumes are also an important set of crops in the country for food security. Furthermore, if the agricultural sector is to significantly increase intra-regional and extra regional trade, and reduce unemployment, legume development presents a further opportunity. Given the high demand for oils, livestock feed in countries such as China, legumes (including cow peas, soy beans, beans, ground nuts) have the potential to significantly contribute to household incomes in Malawi if deliberate policies can be put in place to support their production and trade. Within the country too, legumes have a greater role to play in combating malnutrition and poverty, hence they should never be ignored in agricultural development policy. At present however the yields for legumes generally trail the world and Sub Saharan averages (see Figure 3.6). Indeed while the groundnut average yield for the world is an overwhelming 1560 kg/hectare and that for Asian countries for example is over 1800 kg per hectare, the average yield for groundnut in Malawi has generally trailed below one ton per hectare except between 2009 and 2013 where this average has reached just above one ton to just narrowly beat the Sub Saharan average.

Figure 3.0: Evolution of groundnut yields

Source, Authors calculations based on FAOSTAT, 2013

The trend raises a number of points namely that; ground nut yields have been increasing since the 1990s. For example between the pre- and post CAADP periods, groundnut yields have increased by almost 0.4 tons which represent an increase of just 16 kg per hectare per year. This implies that there is still tremendous potential to increase groundnuts production by finding ways of increasing productivity. High yielding groundnuts varieties and irrigation technologies could have an important role in achieving this goal. The government may have to set its own ambitious targets in this area for example one would thing targeting to reach the current world average yield (1560kg per hectare or thereabout) would be useful to guide groundnuts value chain development.

Figure 3.1.5: Evolution of soybean yields

Source, Authors calculations based on FAOSTAT, 2013

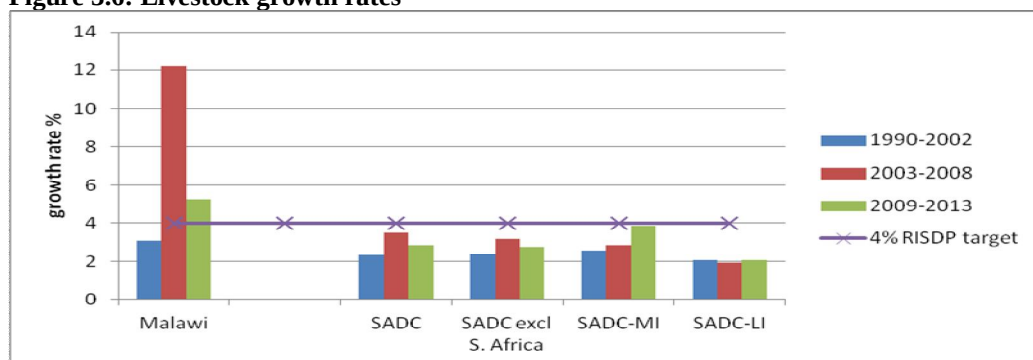
Figure 3.7 shows the evolution of soybean yields since the 1990s. Again, although neither the CAADP nor the SADC RISDP and the country have specific targets for soybean yields, we take the Africa and World soybean as yardstick against which to evaluate the sector's performance. Soybean yields have generally increased from the 1990-2002 average of 0.75 tons to the current average of just 1 ton per hectare. Compared to groundnut yields above, soybean yield have evolved slowly at just about 10.7 kg per hectare per year. Moreover, although the Africa average yield for soybean is just under one tone and Malawi's yields are about the Africa average, soybean world average is yield is an overwhelming 2.3 tons per hectare implying that soybean yield in Malawi is an overwhelming 1.3 tons per hectare lower than the world average. So, again, there is tremendous potential to increase soybean production in Malawi through increasing productivity. The opportunities in this area lie in exploiting the power of transgenic technologies, irrigation efforts and post-harvesting storage efforts. Soybean has potential to improve livelihoods in Malawi directly as a sources of proteins and indirectly though trade. China, Nigeria have seen tremendous increase in demand soybean for human

consumption and also for oil and pan cakes for livestock production, all emanating from burgeoning affluent populations in those countries.

3.1.6. Progress towards 4% growth in livestock

The livestock sector constitutes an important branch of the agricultural sector because ultimately the fights against malnourishment and poverty in rural areas hinges on the agricultural sector's ability to structurally revamp the livestock, fish, forestry and crops sub-sectors among other efforts. The issue of dwindling livestock counts has been noted across the SADC region such that the SADC RISDP has its own target to guide countries on the performance of the livestock sub-sectors. The livestock production has to change by an average of about 4% annually to meaningfully improve meat availability and help curb poverty and malnutrition. The Figure 3.8 shows trends in the livestock growth rates for the SADC region and Malawi.

Figure 3.6: Livestock growth rates

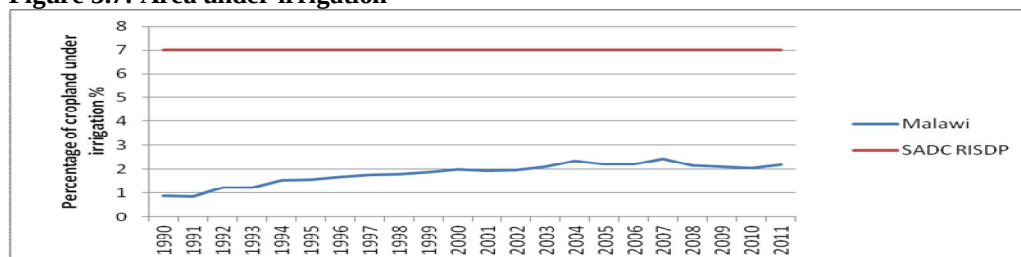


Source, Authors calculations based on FAOSTAT, 2013

Figure 3.8 shows that livestock growth in Malawi has seen ups and downs although in a number of years it has been about or above the 4% SADC RISDP target. In the post 2003 period livestock growth in Malawi has surpassed the 4% SADC RISDP target although this growth has been volatile and has declined in the post 2008 period. The marked growth rate is important as the SADC region is poised to witness further meat demand owing to now increasing incomes. To demonstrate the potential meat demand for the region, it would be interesting to note that, many of the SADC countries are advancing significantly in terms of per capita income growth, with Zambia graduating into a middle income country in 2012, and Mozambique, and Tanzania also making significant headway. Malawi should strategize to take advantage of the potential meat demand in the region to boost its meat trade.

3.1.7. Progress towards doubling area under irrigation

The stagnation of agricultural productivity in Africa and Malawi in particular emanates from many reasons including undercapitalization of the sector as well as low quality of investments. One area that holds potential to spur agricultural growth is irrigation. At least in the Asian economic success stories, irrigation played an important role in the Green Revolution which partly explains the gap that now exists between Africa and Asian economies. Figure 3.9 shows trends in irrigated areas against a target of 7% for the SADC region. An increase in the area equipped for irrigation could mean increased investment, and increased potential to improve agricultural productivity and food security.

Figure 3.7: Area under irrigation

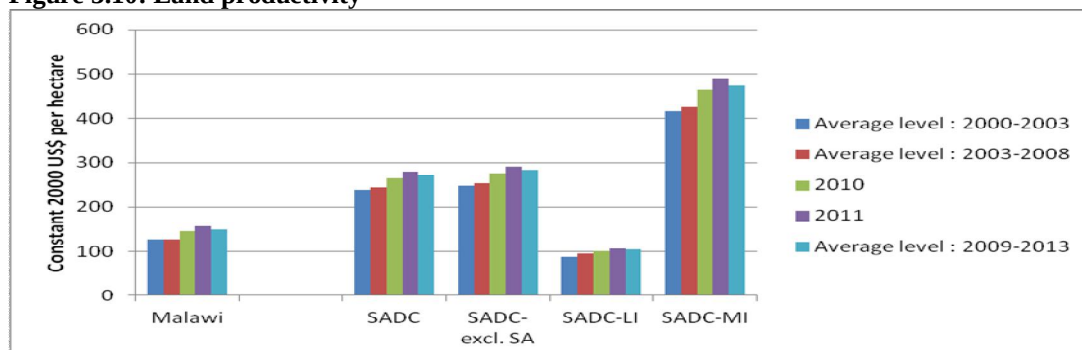
Source, Authors calculations based on ReSAKSS data, 2013

Figure 3.9 shows that although the area irrigated in Malawi has seen a steady increase since the 1990s, the proportion of irrigated land to the total arable land remains below the recommended 7% target. The proportion of land that is irrigated hovers below 3% implying that efforts need to increase. This is important also because it has been demonstrated elsewhere that an increase in irrigation efforts has positive productivity effects.

3.2. Agricultural Productivity

The agricultural productivity concept attempts to summarize the effects of inputs in changing production in the agricultural sector. In practice agricultural productivity can be summarized in two ways namely by computing Total Factor Productivity or Partial factor productivity. Total Factor Productivity (TFP) is defined as the ratio of total outputs to total inputs in a production process. These measures relate all outputs to all inputs used during production. If price data is available, the price-weighted index of outputs is divided by a price-weighted index of inputs to construct TFP indices. On the other hand, Partial Factor Productivity (PFP) is usually measured as a ratio of total output to the total amount of a given input. In practice, land productivity (total output per unit of land and crop output per unit of land) and labour productivity (output per worker) are the frequently used partial productivity measures. More often, owing to the data demand to compute TFP, labour and land productivity measures are used to summarize agricultural performance and are useful. Specifically, land productivity helps in showing the amount of land needed to meet a given output target, whereas labour productivity assists in showing the welfare benefits of agricultural labour. Labour productivity measures are, therefore, important in showing the role of agriculture in poverty reduction also see (Avila, and Evenson, R.E. 2010; Benin, et., 2012.).

3.2.1. Land productivity

Figure 3.10: Land productivity

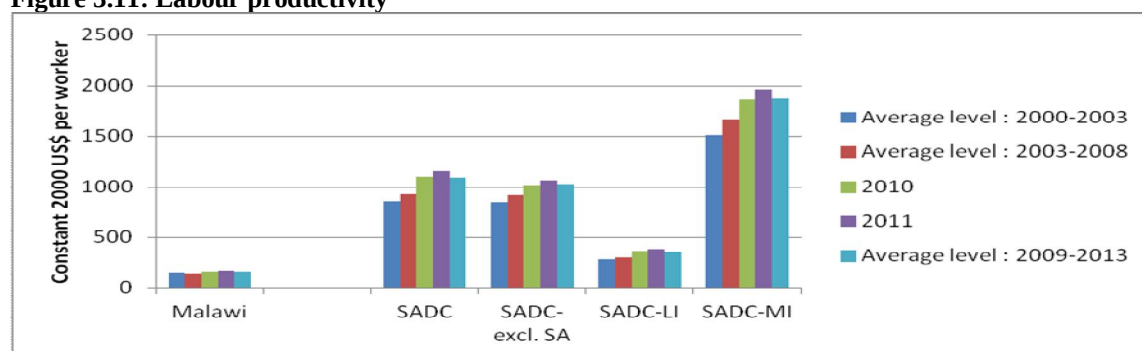
Source, Authors calculations based on FAOSTAT, 2013

Figure 3.10 shows that on average, the land productivity in Malawi has been increasing since the 2000-2003 period, although such an increase has been very slow. The average land productivity in Malawi stands at about US\$ 155 which, although higher than the SADC Low income average, is significantly lower than the SADC average which stands at around US\$270 per hectare and SADC Middle income averages which stand at more than US\$470 in recent years. Malawi therefore has to improve land productivity and the key is in policies that seek to yields and value of crops in general.

3.2.2. Labour productivity

Figure 3.11 shows the evolution of labour productivity in the SADC and in Malawi over time. Labour productivity measures are a useful indicator to show whether agriculture policies are significantly benefitting farmers in terms of improved incomes.

Figure 3.11: Labour productivity



Source, Authors calculations based on FAOSTAT, 2013

Figure 3.11 shows that labour productivity in the agricultural sector has stagnated at below US\$170 which is lower than the SADC Low income average which currently stands at more than US\$350 and is also significantly lower than the SADC and SADC middle income countries where labour productivities stand currently stand at above US\$1088 and US\$1880 respectively. To meaningfully change the livelihoods of rural people, there is need to enhance labour productivity. The best policies that can achieve this lie in output and input price policies, value addition to agricultural products and in farm level output diversification.

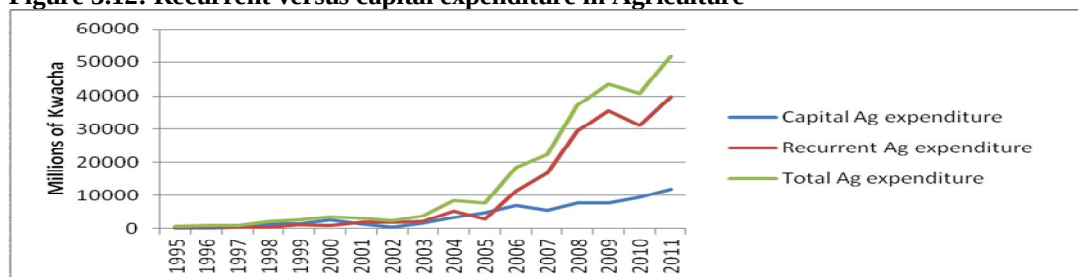
3.3. Evolution of public expenditure in agriculture

The levels of expenditure and the quality of spending matter for agricultural development. Understanding how expenditure is conducted within agricultural sector can help identify areas of high and low potential that require particular attention within the agricultural sector. In the absence of efforts to understand high potential areas of agriculture, an increase in agricultural spending may not necessary bring in the long terms productive changes that agriculture needs to sustainably advance in the future. In general while all kinds of spending are important in the sector, productive spending is crucial. Public spending needs to pay attention to capital accumulation in the sector. Figure 3.12 shows the evolution of public spending in agriculture in terms of capital (productive) and recurrent expenditure.

3.3.1. Recurrent versus Capital expenditure in agriculture

Figure 3.12 shows that public agriculture spending has generally increased over time. These results show that recurrent expenditures have generally been higher than capital expenditures over the period under study. Not only have capital expenditures been lower than recurrent expenditures in agriculture, but they have also been growing slowly over time. The policy implication for Malawi is that if more scarce public resources continue to be allocated to recurrent/consumption expenditure, prospects for sustainably meeting some of the CAADP, SADC RISDP and MDG targets could be slim. Agriculture-led economic growth as witnessed elsewhere in the world is based on sustained growth in productivity through corresponding investment in R&D and other critical public goods. Not all recurrent expenditure is wasteful. Sustainable recurrent expenditure to maintain R&D facilities and equipment, generate more technologies, support extension and other requisite infrastructure, and for payment of salaries and other incentives for a productive public service, training of staff and farmers, targeted input subsidies, etc. is critical to agricultural transformation. What is important here is to ensure that capital investments are not neglected as they also hold the key for long term agricultural growth.

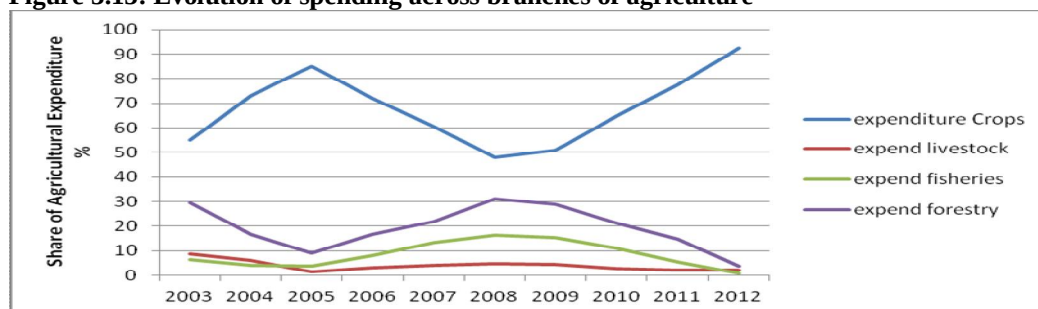
Figure 3.12: Recurrent versus capital expenditure in Agriculture



Source, Authors calculations based on ReSAKSS, 2013

3.3.2. Expenditure in agricultural subsectors

Figure 3.13: Evolution of spending across branches of agriculture



Source, Authors calculations based on ReSAKSS, 2013

Figure 3.13 shows that agriculture public expenditure across these sub-sectors is generally biased towards the crops sub-sector perhaps owing to its importance in food security. For food and nutrition security as well as rural incomes to improve sustainably it is important for sector to step up its efforts across all the four components of agriculture. For example aquaculture/fisheries and livestock development in general are important for improving household nutrition security because they are a source of nutrients that cannot be supplied by the crops sector alone. The forestry subsector is important for controlling

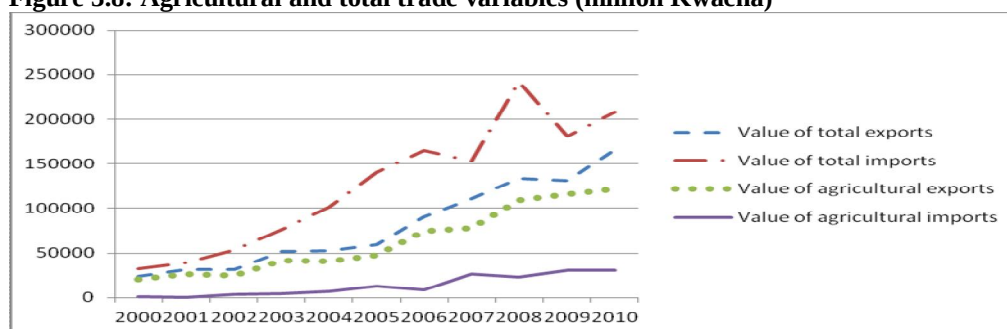
environmental degradation that can negatively impact on the crops-subsector and it's also critical for rural incomes.

Figure 3.13 shows the evolution of spending in the crops, livestock, fisheries and forestry subsectors over time in order to show understand the sector's emphasis.

Investments in R&D is important for agricultural growth. The NEPAD and the CAADP require that countries invest between 1-2% of their agriculture value added (agGDP) in agriculture if they are to significantly enhance capitalization of agriculture and reduce the current undercapitalization of the sector. An analysis of expenditure shares shows that research and development (R&D) spending intensity ratios were lower on average than the 2% minimum recommended by CAADP and even than the NEPAD target of 1%, suggesting under capitalisation and low quality investments in the sector (see ReSAKSS 2013).

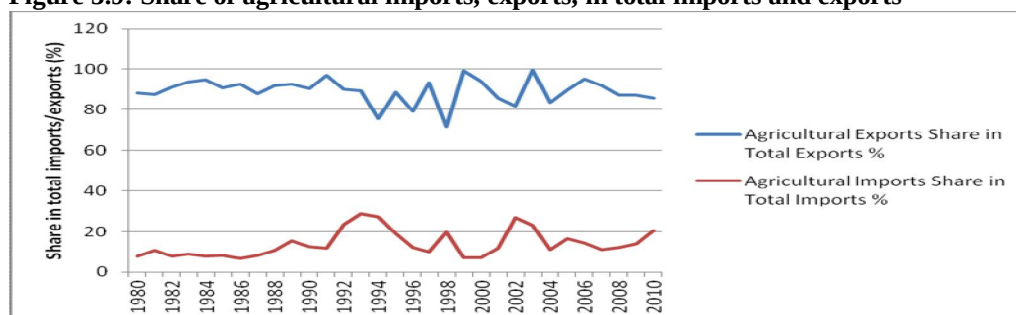
3.4. Intra and extra regional agricultural trade

Figure 3.8: Agricultural and total trade variables (million Kwacha)



Source, Authors calculations based on ReSAKSS, 2013

Figure 3.9: Share of agricultural imports, exports, in total imports and exports

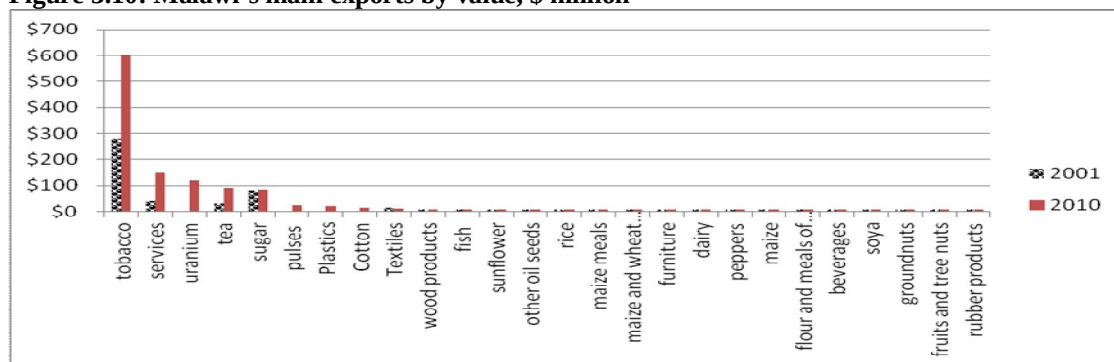


Source, Authors calculations based on ReSAKSS, 2013

Figure 3.15 shows that agricultural imports constitute less of total imports while agricultural exports constitute a huge percentage of total exports. Two important points to note are that agricultural imports share is increasing over time despite the reforms in the agricultural sector implying the sector should do more to meet the needs of people domestically. Secondly, agricultural exports share has remained almost always above 80%. This underscores the role of agriculture in the economy but also suggest the need for diversification in the economy to reduce economic vulnerability related to agricultural sector. Figure 3.16 shows that while tobacco is an important export crop, tea, sugar, services and mining sectors are coming up as important for exports. On the import side, shown by Figure 3.17, it appears that fuels, fertilizers, machinery, vehicles, electrical

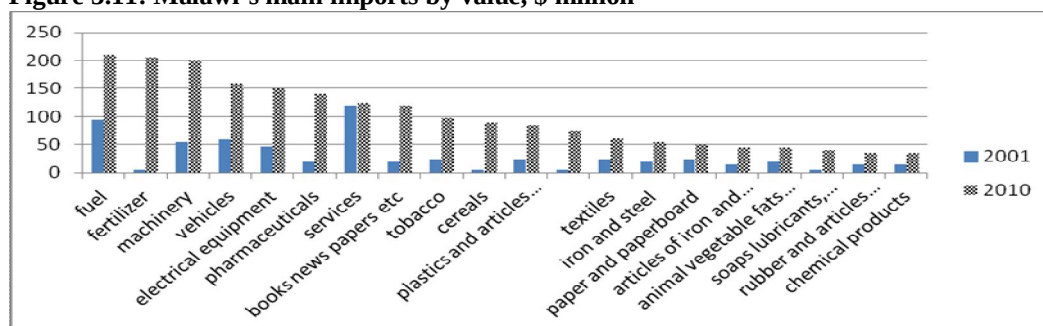
equipment, pharmaceuticals and services were among the major streams of imports into Malawi. An important reason behind the burgeoning trade deficit in Malawi is its lack of industries to manufacture any of the frequently imported goods

Figure 3.10: Malawi's main exports by value, \$ million



Source: www.trademap.org. Total exports stood at \$493 million in 2001 and \$1,208 million in 2010.

Figure 3.11: Malawi's main imports by value, \$ million



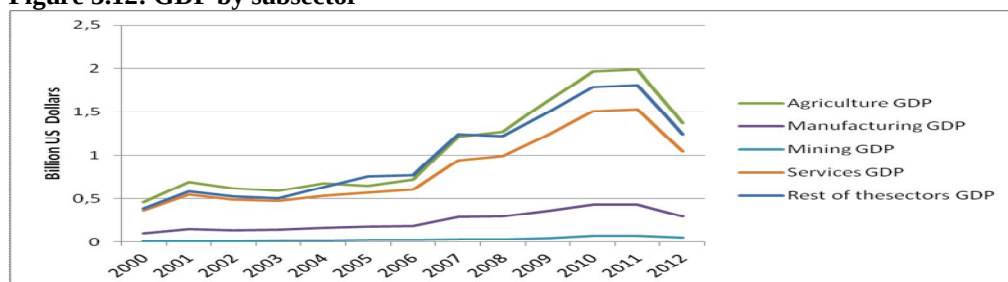
Source: www.trademap.org. Total imports rose from \$733 million in 2001 to \$2,299 million in 2010.

That the fertilizer import bill was large in 2010 is not surprising. The FISP has claimed a lot of resources and has constituted at least 30% of the agricultural budget and in 2012 the proportion of the agricultural budget that went to the FISP rose to 57 %.

3.5. Development results

In this section we present graphs that show selected output/outcome indicators in the agriculture sector.

Figure 3.12: GDP by subsector



Source, Authors calculations based on ReSAKSS, 2013

Figure 3.18 shows that of the many sectors that constitute the Malawi economy, Agriculture contributes the greatest share to Malawi's GDP and this has been so throughout the past decade. This shows the importance of the sector for economic growth

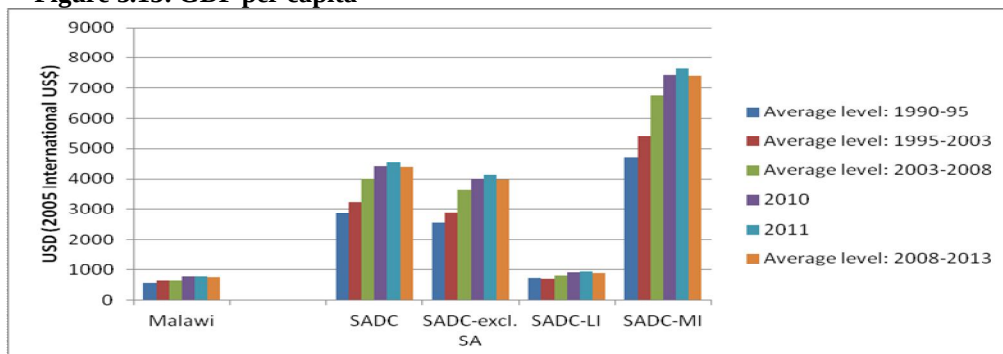
and poverty reduction and so bad policies in this sector have the potential to paralyze the economy, which perhaps explains why the economy performs so badly every time there is erratic agricultural production.

3.5.1. Income and Poverty

3.5.1.1. GDP per Capita PPP

Figure 3.19 shows trends in per capita incomes over time for Malawi and different economic groups in the SADC.

Figure 3.13: GDP per capita

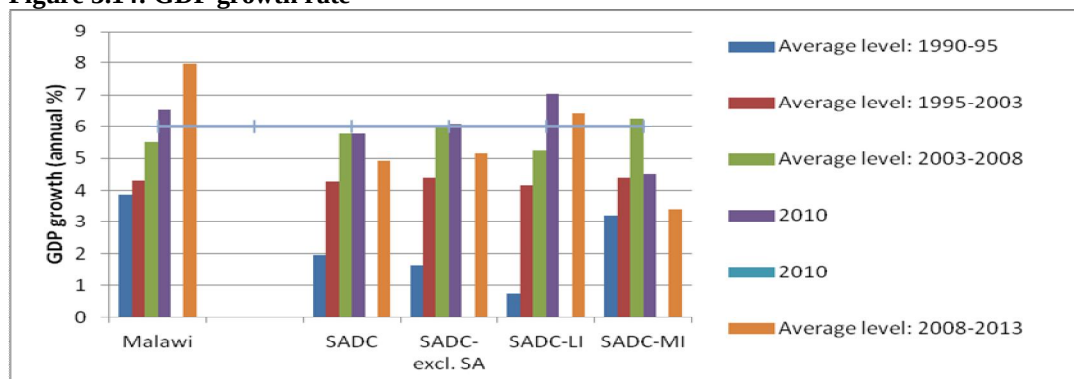


Source, Authors calculations based on World Bank Development Indicators, 2013

From Figure 3.19, it is clear that Malawi's GDP per capita in terms of 2005 US\$ has recently stagnated at below 800 US\$ which is lower than SADC lower income average of about US\$890 per capita. Again, Malawi's income per capita is far much less than the SADC average which currently stands at more than US\$4300 implying that Malawi would have to more than quadruple to just reach the standards of living enjoyed by an average Southern African country and would have to increase by an overwhelming factor of 8 to reach the current standards enjoyed an average SADC Middle income country. Assuming the current GDP growth rates of about 4-5% per annum, and assuming business as usual scenario in the agricultural, mining and service sectors, Malawi would have to wait for at least 40 years before reaching the standards of living enjoyed in an average middle income country in the SADC. Clearly this is unacceptable and there is need to change the development course by introducing significant changes in the agricultural sector. The low income per capita figures above should in fact not be surprising. The fact that the economy depends heavily on agriculture and agricultural labour productivity is low implies that agricultural incomes and hence incomes in general are low. It cannot be overemphasized therefore that any credible strategy for poverty reduction ought to address the lingering structural problems that exist in the agricultural sector.

3.5.1.2. GDP growth rate

A combination of low and stagnating incomes implies that it will take very long before any significant changes in income can be experienced. For smaller and low income economies, not only should they grow, but they must grow significantly higher than larger economies to produce the same poverty reduction effects that large ones can experience upon growing marginally. Figure 3.20 shows the trend in the growth of Malawi's GDP and also presents the same for other SADC groups.

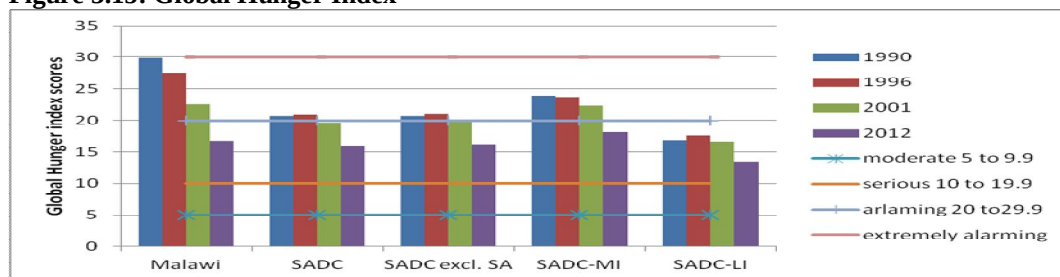
Figure 3.14: GDP growth rate

Source, Authors calculations based on World Bank Development Indicators, 2013

The economy has grown positively in the past decade, however more recently, growth has been volatile and although Malawi has passed the 6% and 7% targets that are deemed good thresholds in order for growth to have a meaningful poverty reduction impact, there have been some years when growth has fallen below the 5% level. Some of the changes witnessed in the GDP emanate from the volatility experienced in agricultural production. Increasing agricultural productivity and agricultural growth stabilization would also reflect at the aggregate macroeconomic level.

3.5.1.3. Global hunger index (GHI)

The GHI measures relative hunger – it refers to the proportion of people who suffer from hunger broadly defined by the three component indicators: under-five mortality rate, prevalence of underweight children and proportion of the population that is undernourished (Von Grebmer et al. 2010). The GHI ranks countries on a 100-point scale, in which zero is the best score (no hunger) and 100 is the worst. Severity of hunger is classified as: (1) low - GHI score is below 4.9; (2) moderate - GHI score is 5 to 9.9; (3) serious - GHI score is 10 to 19.9; (4) alarming - GHI score of 20 to 29.9; and (5) extremely alarming - GHI score is 30 and above (Von Grebmer et al. 2010).

Figure 3.15: Global Hunger Index

Source, Authors calculations based on IFPRI, 2012

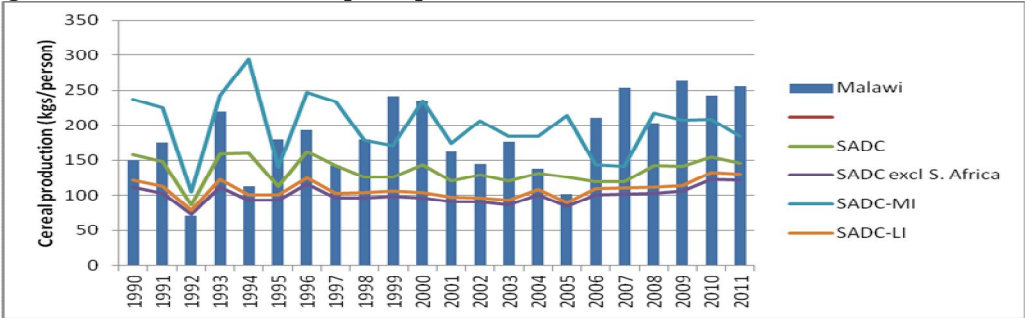
Figure 3.21 shows that the hunger situation has become better since the early 1990s when the situation was alarming and only became better recently where the situation is now just about serious. It is possible that agricultural growth, efforts in other sectors outside agriculture e.g. health and education have all contributed to the modest positive changes to the hunger situation. However, the improvements can still be better. The country has a long way to achieving moderate levels of hunger i.e. GHI of below 10. Among other things, investments in agriculture could help reduce the hunger situation in Malawi and so

any efforts that seek to boost the performance of the crops, livestock, fisheries and even the forest subsectors of agriculture are needed and are critical.

3.5.2. Cereal production per capita

The per capita production of cereals is taken as an indicator of the food available from production, which can be used to meet the food needs of the population in a country. Traditionally, the availability of energy is taken as a basic indicator of food security. Figure 3.22 presents trends in per capita cereal production in the Malawi and various groups in the SADC the SADC region over the period 1990 to 2010. The results show that average per capita cereal production in the region is less than 150 kg. The SADC middle-income countries have a higher average per capita cereal production than SADC low-income countries. However, both groups of countries are experiencing declines in per capita cereal production with the rate of decline being higher in the SADC middle-income countries. For the Malawi case though, per capita cereal production has grown faster than the SADC average but has trailed growth in middle income countries of the SADC. The growth has generally been volatile from year to year but high levels of per capita cereal production (above 250kg per person) have been registered mainly in the post 2007 period perhaps coinciding with farm input subsidy programs that saw a significant increase at the time. While the recent cereal per capita averages are above the minimum maize requirement of 185 kilograms per capita, Malawi needs to produce more than the current levels to meet both the nutrition and income needs of the population.

Figure 3.16: Cereal Production per capita



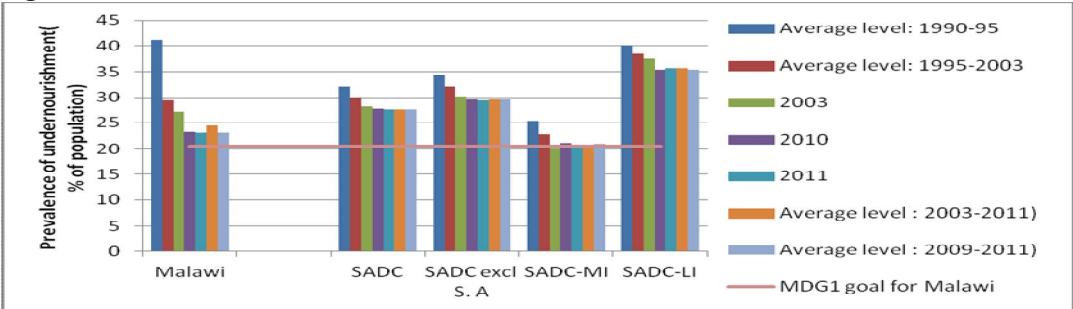
Source, Authors calculations based on FAOSTAT, 2013

3.5.3. Malnutrition and hunger

3.5.3.1. Prevalence of Undernourishment

Figure 3.23 shows trends in undernourishment among the general population as a proxy for hunger.

Figure 3.17: Prevalence of undernourishment



Source, Authors calculations based on World Bank Development Indicators, 2013

Figure 3.23 shows that the proportion of people that are undernourished in Malawi has decreased the 1990s but as a country Malawi is yet to reach the target of 20%. Middle income countries on the other hand have undernourishment levels of below or just about 20% currently. The agriculture sector has a role to play in further reducing undernourishment and increasing productivity of agriculture is one of the channels through which this could be achieved.

4. Conclusion

The agricultural sector has enjoyed increasing investment in the post CAADP period which has generally been characterized by the FISP program. Consequently, the CAADP commitment of allocating 10% of annual budget has continuously been met. However, the quality of public expenditure in agriculture remains questionable as a substantial amount has gone to recurrent expenditure and the gap between capital spending and recurrent spending has widened over time. We also find that such investments in agriculture, have generally been associated with an increase in agricultural productivity, but the latter has not significantly changed over time perhaps owing to the limited nature of capital investments. However, these productivity gains have been adequate enough for Malawi to attain the 6% agricultural growth target from 2008. It is also interesting to note that changes in the agriculture sector appear to have had influence on incomes, poverty and malnourishment.

References

- Avila, A.F.; Evenson, R.E. 2010. Total factor productivity growth in agriculture: The role of technological capital. In: *Handbook of agricultural economics*, eds., Pingali, P.; Evenson, R.E. Burlington: Academic Press. Pp. 3769-3822.
- Benin, S.; Nin-Pratt, A.; Wood, S.; Ghuo, Z. 2012. *Trends and spatial patterns of agricultural productivity in Africa, 1961-2010*. Washington, DC: International Food Policy Research Institute (IFPRI).
- Chilonda, P, Matchaya, G., Nhlengethwa, S. 2013. Enhancing Regional Food Security through Increased Agricultural Productivity, *ReSAKSS-SA Annual Trends and Outlook Report 2012*. International Food Policy Research Institute (IFPRI) and the International Water Management Institute (IWMI).
- FAO FAOSTAT (2013). *FAOSTAT Statistical Database*. <http://www.faostat.fao.org>. Accessed on 20/02/2013.
- Matchaya, G., Chilonda, P, Nhlengethwa, S. 2013. *Inter-temporal Trends and Patterns in Agricultural Investment Spending in Southern Africa, ReSAKSS-SA Annual Trends and Outlook Report 2012*. International Food Policy Research Institute (IFPRI) and the International Water Management Institute (IWMI).
- ReSAKSS (2010). Monitoring and Evaluation (M&E) system for the Comprehensive Africa Agriculture Development Programme (CAADP). ReSAKSS working paper No. 6. March. RESAKSS-IFPRI: Washington D.C.
- ReSAKSS (2014). Facilitating Improved Agriculture Joint Sector Review Processes and Reports. Washington DC.
- World Bank. 2013. *African Development Indicators*. Available at <http://data.worldbank.org/data-catalog/africa-development-indicators> (accessed in January, 2014).