



REPORT

AGRICULTURAL SUBSIDIES IN SADC COUNTRIES

“Current Status and Impact”

May 2016

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FOREWORD

FinMark Trust has commissioned this research as part of its broader mandate to improve financial inclusion of the poor. In this case, given the significance of the agricultural sector in most Southern African Development Community (SADC) countries, the stated purpose has been to assist SADC and SADC states to make informed decisions regarding the payment of (agricultural) subsidies by using the research findings and guidelines. The ultimate goal is to ensure greater food security and financial inclusion in the agricultural sector.

The research task has been to gather evidence about the impact of agricultural subsidies, and to provide guidance on the types of subsidies that will produce more long-term sustainable effects on the concerned economies. FinMark Trust may use these findings to develop future programmes and initiatives which would support and advance the above goal.

The research first required an understanding of the global landscape regarding agricultural subsidies, including some analysis of the changes over time, and with a special emphasis on the different approaches to subsidies of the

developed and developing worlds. Beyond this, it was necessary to consider Africa as a continent, and then to focus on the policies and practices of the fifteen countries of SADC.

Four countries were identified for closer attention: Malawi, Tanzania, Zambia and Zimbabwe. These countries were chosen in part because of the relative importance of agriculture to their Gross Domestic Product (GDP), and because of a history of different forms of input subsidy. The task in these cases was to identify and validate the policies, as well as to look at the implementation of the programmes. Questions of purpose, practice and impact were incorporated into the research. Comparative studies with similar countries were also undertaken, specifically with India and Brazil, to ascertain if there were lessons that could be learned from these.

Finally, after a consultative process, recommendations have been made for possible interventions by FinMark Trust, with a view to proactively influence the impact of (agricultural) subsidies in the SADC region, and improve the livelihoods of the poor through food security and greater financial inclusion.

The authors appreciate the opportunity to research and report on this important matter.

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Acronyms and Abbreviations

AU	African Union
AUC	African Union Commission
AfDB	African Development Bank
CAADP	Comprehensive African Agriculture Development Plan
COP	Conference of the Parties to the UNFCCC
CSA	Climate Smart Agriculture
CSA-PF	Climate Smart Agriculture prioritisation Framework
FAO	Food and Agriculture Organisation of the UN
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FNR	Food and Natural Resources Directorate (SADC)
FSDT	Financial Sector Deepening Trust
GDP	Gross Domestic Product
MAP	Making Access to Financial Services Possible
NAP	National Adaptation Plan
NAIP	National Agriculture Investment Plan
NEPAD	New Partnership for Africa's Development
RAP	Regional Agriculture Policy (SADC)
SACAU	Southern African Confederation of Agricultural Unions

SADC	Southern African Development Community
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
UN	United Nations
UNFCCC	UN Framework Convention on Climate Change
ZADT	Zimbabwe Agriculture Development Trust

Definitions

For this study, an agricultural subsidy is understood as a government payment (in cash or in-kind) made to farmers and/or agribusinesses to supplement their income, manage the supply of agricultural commodities, and influence the cost and supply of such commodities. A subsidy is generally understood as positive income for food producers, but situations do exist where the net effect of state taxes, levies and tariffs is negative – where the state is a financial burden to farmers and producers.

As an instrument of price policy, true subsidies should aim to change either the domestic price of inputs (input subsidies) or the price of outputs (output subsidies), from those that would otherwise prevail. They can be targeted at producers, consumers or intermediate levels of the food value chain, depending on the objectives.

This report draws a distinction between those payments which can be regarded as market and/or price policy interventions (the focus of this study); and state funding for farmer support programmes. The latter are aimed at assisting largely subsistence and small-scale farmers to increase production, but much of this does not reach the

markets. The study also discounts market management measures such as export bans, or fixed prices for certain foodstuffs.

Although the focus of this study is on state supported programmes, private sector and donor support to agriculture in developing countries is increasing. In addition to private investment opportunities, agriculture increasingly fosters international co-operation, often through technical expertise and science partnerships. The study shows that in some countries the public and private sectors are increasingly working in tandem in the support of commercial agriculture, with some significant benefits. Agricultural development work also exhibits a growing sustainability focus, indicating a major opportunity for future investment and collaborations.

EXECUTIVE SUMMARY

1. Background

The brief from FinMark Trust for the research report was as follows:

- To develop an understanding of the “global landscape” with respect to agricultural subsidies and in particular how the developed world approaches the implementation of subsidies versus that of the developing world;
 - To identify at least 4 specific countries in the SADC region that will be the focus of the research and justify the selection of these countries (It is important to note that a “scoping” study of all 15 SADC countries be undertaken so as to arrive at a logical conclusion for the choice of the 4 countries). Issues that should be taken into consideration in selecting these countries should include (but not be limited to) the contribution to GDP by agriculture and the levels of poverty;
 - To identify and validate critical policies in these countries with respect to agricultural subsidies and document how these are practically implemented. (It is critical to gain an understanding of what types of subsidies are
-

being employed, what the subsidies seek to achieve, how they are being implemented, their impact on long term sustainable production and productivity, the accompanying economic and socio-economic conditions that make the subsidies work or not work, and whether the goals of these subsidies are being attained);

- To compare the subsidy policies of these countries with similar developing countries in the world (e.g. Brazil, Argentina, Mexico) and critically analyse them .It is important that key successes and challenges with respect to the subsidy schemes in the SADC region be highlighted;
- To develop guidelines that SADC member states could follow in developing an agricultural subsidy scheme based on best practices researched and evidenced;
- To share the findings of the research with FinMark Trust and other identified stakeholders;
- To make key recommendations where practical interventions by FinMark Trust can be made so as to proactively influence impact of subsidies in the SADC region in improving the livelihoods of the poor in the rural areas whilst at the same time resulting in improved food security and greater financial inclusion.

2. Methodology

The research was conducted over a period of three months, with the following methodology:

- A desktop study of the global landscape on agricultural subsidies;
- A survey of recent literature on food and nutrition security;
- A survey of recent literature on climate change and agriculture;
- Comparative studies on India, Brazil, Kenya and Nigeria;
- A detailed study on Africa and the SADC region, with a description and review of both policy and programmes;
- A focused study of four SADC countries – Tanzania, Zambia, Malawi and Zimbabwe;
- An analysis of the literature and implications for SADC as a regional organ and for the countries of SADC; and
- The development of recommendations for FinMark Trust.

3. Key findings and recommendations

The demand for food is rising and projected to increase by 20 per cent by 2030. At the same time, hunger remains a challenge for almost 795 million people worldwide in 2014-2016—most of them from developing regions, representing 13 per cent of those regions’ populations (Food and Agriculture Organization of the United Nations, 2015). The challenge of eliminating hunger and ensuring food security is recognised in the 2030 United Nations Agenda for Sustainable Development. Of consequence for this study is the aim of this Agenda to ensure sustainable food production and double agricultural productivity, including through access to productive resources and inputs, knowledge, financial services, markets and opportunities for value addition by 2030.

The UN Report: World Economic Situation and Prospects 2016 (New York, 2016), notes that many countries pursue policies and strategies for ensuring food security, which include subsidies for the production of staple food. The report recognises that some of these strategies may not be economically viable or optimal as they affect diversification and structural transformation, but does not rule out their use for strategic and defined purposes. The report calls for “fair and predictable international agricultural markets”, which are necessary for food security, and which may include policy driven subsidy schemes.

Similarly, the Food and Agriculture Organization (FAO) of the United Nations asserts that “Markets are central to the successful management of structural transformation, but the process of structural transformation has never been driven entirely by market forces” (FAO, State of Agricultural Commodity Markets 2015-2016).

Notwithstanding this positive environment for developing countries, there are large scale inequities between the developed and developing worlds in regard to agricultural subsidies. High-income countries have seen the level of support to agriculture in constant decline since a peak of 60% in 1985, but it nevertheless remains above 10%. By contrast the nominal rate of assistance to agriculture in developing countries is often in negative territory, with a low of minus 25% in 1960, meaning that state taxes and levies added to the cost of food production. This rate rose to minus 20% in 1980, reached parity (0%) in 1985, and peaked at plus 10% in 2000. Poor economic conditions since 2005 have seen a decline to minus 5% in 2008, with a recovery to near parity again in 2010.

Identifying support strategies which are economically sustainable, let alone environmentally and politically appropriate, is a complex task. Decisions will depend significantly on factors within the country itself, in terms of natural, manmade and human resources. Since these change over time, strategies also need to be dynamic in order to

stay relevant. Ironically, the state of the agricultural sector is seldom the major determinant of the need for support to the sector.

The matter of agricultural subsidies in the SADC is complicated by two research impediments. One of these is the absence of recent and relevant data on this, which is largely compiled by governments. Global figures are available, but there is little disaggregation of the data, and little chance of doing so since most records are paper based. So questions about who gets, and what for, are not always evident.

The data paucity is especially true on the matter of agricultural outputs, which are not always recorded in a systematic fashion, since markets themselves are not always formalised. Again, country-level figures are available, but these make any direct correlation between input subsidies and production very difficult to determine.

The second impediment is that subsidies are not always driven by tight policy and administrative procedures. The amounts are seldom predictable, and the criteria and selection of qualifying farmers can be erratic from year-to-year. External factors, other than purely economic reasons, are often the basis for the payment of agricultural subsidies.

These are not dealt with in terms of any trade regulatory framework, and the assumption in many cases is that subsidies are undesirable.

As a result, parties are not always comfortable in discussing the issue, which has the potential to be (or may even have become) politicised. From the village level to the highest levels of governance, key decisions are being made about the allocation of limited resources, and there is inevitably contestation around these. The management of the subsidies therefore becomes a key issue: this has to be done in an open and transparent manner. This will form part of the key recommendations of the report.

What has become evident in all the research, desktop and on the ground, is that there is not yet a sufficient consensus within SADC countries, or in the regional body, about the value and purpose of agricultural input subsidies. A wide variety of approaches and practices around subsidies is evidence of a plethora of views on the matter. The analysis also shows that in many cases subsidies are implemented with a high administrative burden, making for an inefficient environment for subsidy programmes. The goal of SADC to harmonise approaches to agricultural investments is to be commended, and a key point of leverage.

This is not to suggest that the goals have not been achieved, since in most cases subsidies are paid with the primary purpose of ensuring food security. Where this aim is clear, the outcomes are normally good, and the country is food secure as a result. Farmer support programmes, in such cases, are no different to subsidies, since they achieve the same purpose.

However most countries do recognise the secondary purpose of supporting their commercial agriculture sectors (especially export products), graduating farmers from a subsistence level into the commercial sector, and that subsidies could play a role in this regard. Policies commit to greater investment in the agricultural sector, and countries invite private sector partners to invest in the sector, but impediments are large, and the take-up by government and business is understandably small.

Countries are cautioned that subsidy programmes can have the effect of crowding out the private sector, when the goal should be a crowding-in and attracting new forms of investment. There are some encouraging public-private partnerships which are showing potential in this regard. The donor community also plays an important role in supporting agricultural development, through programmes that serve demonstration purposes, by facilitating partnerships and promoting broader economic development.

As a case study, the United Republic of Tanzania presents itself as a long-standing champion of agricultural input subsidies. It has subsidised the costs of seed and fertiliser to farmers for many years, and as a result, the country has remained largely food secure, and even in this time of drought is exporting maize to Malawi. The system is not perfect, either in design or administration, but it is deeply institutionalised in the country, and any new thinking by the new government is worthwhile tracking.

Zimbabwe has also been closely analysed, given the disparate stories that emerge. Crops are growing, although future outlooks are concerning given the regional drought, and stock farming is seemingly underway. Subsidies are apparently paid for non-food, largely export-oriented crops such as tobacco and cotton. Credit support is a major source of agricultural assistance, largely as a response from the donor community to food shortages at a household level. The lack of credit and collateral channels are major opportunities for developing agricultural value chains in Zimbabwe, not only for macroeconomic economic stability, but also to foster drought and climate resilience.

Recommendations for FinMark Trust include firstly a policy advocacy role at the level of SADC, informed by global views and experiences, and secondly various programmatic interventions.

A primary opportunity exists for FinMark Trust and other agencies to intervene with a view to achieving a regional impact. The recently adopted SADC Regional Agricultural Policy (RAP) requires each member state to develop a National Agricultural Investment Plan (NAIP). Some countries, like the Seychelles, have done so, but most are awaiting further guidance from the Secretariat.

It is the stated intention of the SADC Secretariat to develop, during the course of 2016, a set of guidelines for the development of these Plans. The content of these Guidelines will be critical in determining the investment patterns in SADC countries over the next few years, and it is recommended that a submission should be made by FinMark Trust in this regard.

The submission should recognise that notwithstanding a generally stated preference for a market driven agricultural economy, there are many good and lawful reasons why countries should make use of agricultural input subsidies, under certain conditions. These conditions should relate to the specific developmental purpose of the subsidy, and should be bound by some form of exit strategy once the goal is achieved. Farmer organisations have advised that

consideration should also be given to use subsidies for “disaster recovery” purposes in light of the local effects of climate change.

The literature review and the experiences of selected countries demonstrates that in order to have any effect, subsidies need to be “smart”, with a clearly defined purpose, and instruments which are designed for this purpose. Smart also means that the subsidies should be targeted – either towards products, populations, or particular approaches – and should be able to show that they have indeed made a difference. There is little evidence of smart or targeted subsidies in SADC countries at present, and FinMark Trust could further make a submission in this regard.

The FAO has also strongly advocated that agricultural subsidies and support programmes should be aligned to the promotion of approaches that are sustainable and promote the conservation of natural resources. These practices can have immediate economic benefits, as well as serve longer term interests, and should be identified and incentivised. As yet, within SADC, there is no evidence of such support.

This does not mean that input subsidies should be narrowly prescribed and uniformly imposed around a single goal. Different purposes are relevant for different situations, in which case a “blended approach” is favoured, with a

combination of support measures, including subsidies. Production support may be supplemented by post-production measures, including storage, transport and marketing subsidies. FinMark Trust should therefore also advocate for a landscape-based approach to the problem. Part of this landscape may well include the establishment of marketing or control Boards, which could play a targeted role in designing and implementing and subsidy programmes.

Finally, the absence of any correlative data between input subsidies and production must be frustrating for countries, which are investing large amounts into programmes which cannot be rigorously evaluated. Many governments are increasingly moving towards outcomes based approaches, where results and impacts are measured. It may therefore be prudent to also advise SADC on the possibility of including output subsidies into their investment strategy. These have numerous benefits, including measurability, and also the need to work through formal markets which register the production. Overall the effect is to incentivise productivity. By increasing production (on a more competitive basis), farmers will receive better prices, and consumers will share the cost of food through the fiscus.

In terms of possible areas of intervention, four areas stand out, and it is recommended that these be pursued as a matter of urgency.

Given the strategic positioning of FinMark Trust, the first target must be the broader development – both breadth and depth – of financial services, and increasing access to these for role-players across the food value chain. This may require policy changes in countries, and more inclusive approaches by the financial sector. Building a credit profile through micro-loan processes, or facilitating credit to buy seed against past production records, have become possible through new technologies and closer co-operation within the sector. Credit sharing initiatives undertaken by the “Making Access to Financial Services Possible” (MAP) programme have assisted in availing credit to the poor. Overall, innovations in mobile financial and banking services, and strong public trust in these, have combined to create opportunities to intervene in this area. Many are already doing so, and a number of examples are described. FinMark Trust is strongly advised to support or replicate one or more of these programmes.

A related aspect is the development of appropriate financial instruments for agricultural risk insurance, which should be heavily subsidised by the state. In Tanzania, only 1% of farmers have insurance, and rates are similar in other SADC countries, as part of the poverty trap. The individual and national vulnerability to variable weather patterns is enormous, and yet state level, cross-subsidised insurance would come at a relatively low cost. Insurance support by FinMark Trust is a logical tandem program to financial services facilitation for agriculture, with market opportunities across SADC value chains.

A second separate task would be to support initiatives which are aimed at market enhancement, since this is a major stumbling block in the development of vibrant and resilient agricultural markets. Crowding-in the private sector to support these can be facilitated by using agro-businesses to collect local and national data on both inputs and outputs. FinMark Trust could consider taking on a number of informal markets (or products) as a pilot project, and develop and implement a strategy to take these to a commercial enterprise level.

Thirdly, infrastructure (or the lack of it), constitutes a major indirect subsidy or cost on food producers. In most SADC countries, producing food is the viable option, but selling at a reasonable price is difficult because of the high costs of storage, irrigation and transport, amongst others. Infrastructure challenges often explain the persistence of other impediments such as “unofficial taxes” or bribes that emerge as actors attempt to reap production benefits. As a result, selling locally, even at low prices, often makes economic sense.

Assisting states to factor agriculture needs into the infrastructure plans for the country is a starting point on this, based on an objective spatial analysis and some “landscape” planning that takes account of all affected by any developments. FinMark Trust may be positioned to ensure that the needs of farmers and food processors are considered in

government plans for transport, water and energy related infrastructure. This is not only about supporting farmers, but also about rural economic development and national food security.

Finally, as an underlying theme, is the need for greater investments in research and innovation, and the application of new technologies. Research and development is no longer a luxury; it is a vibrant economic opportunity as new seeds, feeds and fertilisers are developed and marketed. Agricultural equipment sales are undergoing a boom, as emerging farmers around the world look for equipment that works for them, at a price that they can afford. For African farmers in particular, there is a real opportunity to leapfrog a number of the usual stages of development by innovating in new technologies and markets.

New mobile communication technologies bring about benefits across the value chain, including extension services, weather predictions, aerial surveys, market prices and the suchlike, now available on a 24/7 basis. Farmers have no need to work on their own, or to rely on tradition and intuition. Good science is now universally available, and technologies must be used to ensure farmers are able to use it.

Various countries are making use of this in different ways, as food producers receive e-vouchers towards seeds and fertilisers, or get information about selected staple crops. Technology services are often provided by the private sector, or through public-private partnerships. The transparency that comes with these technologies is significant, with real-time data for monitoring and reporting. FinMark Trust is encouraged to build on these programmes.

Fortunately, there are significant opportunities for countries to access financing for agricultural support programmes. These are described in Chapter 6 of the report. Some of the global instruments, such as the Green Climate Fund, are targeted at “climate-smart agriculture” initiatives, guided by country profiles. Others are focused on infrastructure projects, insurance, and productivity improvements.

The report concludes that agricultural input subsidies are a valuable catalyst in stimulating agricultural production, and can be used to incentivise particular approaches or products. SADC countries are therefore encouraged to make use of these, under certain conditions, and it is recommended that FinMark Trust plays an advocacy role in the shaping of the regional investment policy to promote the above.

CHAPTER 1: INTRODUCTION

1.1 Brief

The brief for the research report was as follows:

- To develop an understanding of the “global landscape” with respect to agricultural subsidies and an understanding of how the developed world approaches the implementation of subsidies versus that of the developing world;
- To identify at least 4 specific countries in the SADC region that will be the focus of the research and justify the selection of these countries (It is important to note that a “scoping” study of all 15 SADC countries be undertaken so as to arrive at a logical conclusion for the choice of the 4 countries). Issues that should be taken

into consideration in selecting these countries should include (but not be limited to) the contribution to Gross Domestic Product (GDP) by agriculture and the levels of poverty;

- To identify and validate critical policies in these countries with respect to agricultural subsidies and document how these are practically implemented. (It is critical to gain an understanding of what types of subsidies are being employed, what the subsidies seek to achieve, how they are being implemented, their impact on long term sustainable production and productivity, the accompanying economic and socio-economic conditions that make the subsidies work or not work, and whether the goals of these subsidies are being attained);
- To compare the subsidy policies of these countries with similar developing countries in the world (e.g. Brazil, Argentina, Mexico) and critically analyse them. It is important that key successes and challenges with respect to the subsidy schemes in the SADC region be highlighted;
- To develop guidelines that SADC member states could follow in developing an agricultural subsidy scheme based on best practices researched and evidenced;
- To share the findings of the research with FinMark Trust and other identified stakeholders;
- To make key recommendations where practical interventions by FMT can be made so as to proactively influence impact of subsidies in the SADC region in improving the livelihoods of the poor in the rural areas whilst at the same time resulting in improved food security and greater financial inclusion.

1.2 Methodology

The research was conducted over a period of three months, with the following methodology:

- A desktop study of the global landscape on agricultural subsidies;
- A survey of recent literature on food and nutrition security;
- A survey of recent literature on climate change and agriculture;
- Comparative studies on India, Brazil, Kenya and Nigeria;
- A detailed study on Africa and the SADC region, with a description and review of both policy and programmes;
- A focused study of four SADC countries – Tanzania, Zambia, Malawi and Zimbabwe;
- An analysis of the literature and implications for SADC as a regional organ and for the countries of SADC; and
- The development of recommendations for FinMark Trust.

1.3 Roadmap

In chapter 2, a case is made for agricultural subsidies, since the premise of this report is that well targeted and effectively managed agricultural input subsidies are good for agricultural development, national economic development (especially where agriculture is the primary economic sector), food and nutrition security.

The global landscape is described in Chapter 3; in particular the global dynamics that have emerged through multilateral trade negotiations between developed and developing countries. The history of agricultural subsidies in developed countries is not aligned to current policy views, or to the economic realities of many developing countries, and this has created an opaque global environment in terms of both policy and practice.

Chapter 4 contains a synthesis of the data from both the desktop research and the field studies. An international literature review is supplemented by comparative studies of Asian and South American cases, which indicate how India and Brazil deal with the matter of agricultural subsidies, under some similar conditions. The Chapter also looks at Africa at a continental level, and at the SADC as a regional inter-governmental organ.

The literature review has supported the use of food security as a framing concept for this research, given the increasing importance of the matter and the world-wide attention it is receiving. In a context of climate change, food security has emerged as a common theme in publications from various specialised international agencies, which must be taken into account in any policy decisions. The thinking in this literature has been used in the research to analyse the current status and inform possible new approaches to agricultural subsidies.

Chapter 5 undertakes an analysis of agricultural subsidies in SADC, with a detailed study of four SADC countries. These have tried to extract some of the finer grained data around the implementation practices of the selected countries, to supplement the desktop data.

This data has provided the basis for a set of findings; in part of the current situation, but more importantly on what could and should happen in the future. The findings are summarised in Chapter 6.

These findings have been shaped into a set of recommendations for FinMark Trust, contained in Chapter 7. Some of these deal with the more effective implementation of current subsidy programmes, while other recommendations have been informed by a more forward-looking perspective; inviting countries to undertake a close review of the purpose

and design of agricultural input subsidy programmes. This should include a cost-benefit analysis, and also factor in the need for climate-smart approaches to agriculture.

Chapter 8 concludes the research and advises countries looking to increase their investments in agriculture, in the hope that some of the recommendations may be adopted.

CHAPTER 2: THE CASE FOR AGRICULTURAL SUBSIDIES

The demand for food is rising and projected to increase by 20 per cent by 2030. At the same time, hunger remains a challenge for almost 795 million people worldwide in 2014-2016—most of them from developing regions, representing 13 per cent of those regions’ populations (FAO, 2015). The challenge of eliminating hunger and ensuring food security is recognised in the 2030 UN Agenda for Sustainable Development. Of consequence for this study is the aim of this Agenda to “ensure sustainable food production” and “double agricultural productivity, including through access to productive resources and inputs, knowledge, financial services, markets and opportunities for value addition by 2030”.

It is clear that for this to happen a number of high-impact interventions need to be made as a matter of urgency. Policies and practices must be reviewed as countries rise to the above challenges, and the global responses need to be supportive.

The Report: World Economic Situation and Prospects 2016 (UN, New York, 2016), notes that many countries pursue policies and strategies for ensuring food security, which include subsidies for the production of staple food. The report

recognises that some of these strategies may not be economically viable or optimal as they affect diversification and structural transformation, but at the same time does not rule out the need for these. The report therefore calls for “fair and predictable international agricultural markets”, which it believes are necessary for food security (UN, 2016). Fairness and predictability can include policy driven subsidy programmes, and the interests of food security should encourage countries to make use of these.

The FAO similarly asserts that “Markets are central to the successful management of structural transformation, but the process of structural transformation has never been driven entirely by market forces” (FAO, State of Agricultural Commodity Markets 2015-2016). In a global context where agricultural subsidies are under pressure from trade negotiations, the challenge for governments is to determine when, how and how much to intervene.

In the above report, the FAO rightly points out that the objectives of policy interventions (like subsidies) should be paramount in informing the design of these policy related instruments. These, they suggest, may include “different dimensions of food security, will differ across countries, and will change over time” (FAO, 2016). At earlier stages of development, increases in agricultural productivity are key, due to the significant multiplier effects that are generated. The FAO emphasises these “[w]here the agriculture sector accounts for a large proportion of GDP, and an even larger

proportion of employment, increasing agricultural productivity is essential, first in fostering investment in agriculture itself, and then in releasing surplus labour and capital to other sectors of the economy” (FAO, 2016).

It is therefore argued that trade and related policies (including agricultural subsidies) have a critical role in building the commercial agricultural sector of a country. Smart agricultural subsidies, aligned to clearly defined strategic objectives, should be introduced as a matter of course in SADC countries.

It is true that at later stages of development, the use of such policies can become detrimental, crowding-out the private sector and preventing the formation of markets. However a multi-year study conducted in India by IFPRI (and cited by the FAO) showed the changing returns per unit of spending on various investments. High returns were obtained from roads and education at an early stage, while research and development has subsequently become more appropriate. This suggests that a dynamic policy instrument can avoid the above negative consequences.

There are also a number of non-economic reasons advanced for market interventions, and for why agricultural subsidies may be introduced. These include the following, some of which are relevant to this study:

- *National interests*: ensuring there is sufficient food production capacity to meet domestic needs.

- *Environmental protection and land management*: policies and subsidies may be used to affect land use, farming methods, re-forestation, alien clearance or pollution abatement.
- *Rural poverty and poverty relief*: encouraging unemployed people to remain on the land and feed themselves or even earn an income is important. In addition, the distribution of food-insecure populations should also inform the balance of support for rural and urban populations. Smallholder producers may be protected by price stabilisation policies (subsidies and tariffs), but urban populations may benefit more from greater openness to cheaper food imports.
- *Fair trade*: to ensure that farmers in developing nations that produce crops for export are not negatively impacted upon by trade policies, practices, tariffs, or agreements. It has however been noted that while seeking to protect agricultural labour and safety standards, quality demands can exclude many small-scale farmers.

Despite the strong messages emanating from global bodies, and the many reasons for making use of subsidies that comply with international law and agreements, there is still a range of views on the matter of agricultural subsidies, and very few SADC countries make effective use of them. In general, trade rules do not favour tariffs or subsidies, but

the World Trade Organisation (WTO) allows that agricultural policies may support domestic producers as they gain domestic and international market share.

However, countries are either discouraged by possible trade implications, or by a lack of political will to increase investments in agriculture. Subsidies often come with a high price, and a significant administrative burden to implement under difficult circumstances, resulting in serious inefficiencies and a bad press generally. Reports of these challenges, and of the political ramifications, have no doubt also put off other countries from considering subsidies.

Most countries do nevertheless recognise the secondary purpose of supporting their commercial agriculture sectors (especially export producers), and in graduating farmers from a subsistence level into the commercial sector. Many do believe that subsidies could play a role in this regard, and policies commit to greater investment in the agricultural sector. Countries invite private sector partners to invest in the sector, but impediments are large, and the take-up by government and business is understandably small.

Based on the dictum that “Purpose drives Design”, it is not surprising that where subsidies are being implemented a wide variety of approaches and practices are found. In many cases “subsidies” are paid with the sole purpose of

promoting food security. These take the form of “farmer support programmes”, with free seed and other inputs, rather than subsidy payments related to any productivity or post-production market goals. However, where this aim is clearly stated, the outcomes are normally good, and the country is often food secure as a result.

Lessons must be learnt from the above, and market related agricultural subsidies should be considered by most (if not all) countries in SADC, to build their commercial agricultural sectors (or particular parts of it), while simultaneously growing the economy overall. Increasingly sophisticated approaches can target particular goals – products, categories or types of farming, outputs – depending on the country circumstances. Public and private investments in related areas, including research and development, should also be factored into the support envelope.

CHAPTER 3: THE GLOBAL LANDSCAPE

3.1 Size and shape of agricultural subsidies

The UN Report: World Economic Situation and Prospects 2016 (New York, 2016), notes that many countries pursue policies and strategies for ensuring food security, which include subsidies for the production of staple food. It also recognises that some of these strategies may not be economically viable or optimal as they affect diversification and structural transformation. The report therefore calls for “fair and predictable international agricultural markets”, which it believes are necessary for food security.

This is a significant position, which certainly does not exclude the possibility of agricultural subsidies, although it warns of the dangers. Influenced in part by the WTO negotiations, over recent decades the structure and type of agricultural subsidy has changed in both developed and developing countries as countries take account of changes and adjust trade and related policies accordingly.

3.2 Nominal Rate of Assistance

The Nominal Rate of Assistance (NRA) to agriculture is defined as the percentage by which government policies and practices (intended or otherwise), have the effect of raising or reducing returns to farmers compared to what they

would be without government intervention (Anderson, 2012). It is the best measure of the cumulative effect of subsidies and incentives to farmers, minus taxes, levies and tariffs which may be imposed on the sector.

High-income countries have seen the NRA to agriculture in constant decline since a high of 60% in 1985, when government support to farmers was at its peak, and farmers received 60% more than the open market price for their produce. The rate remains at just above 10%, with a small rise since 2008 in response to difficult economic circumstances. These percentages reflect the extent to which gross returns to farmers were raised, and helped to establish both production facilities as well as markets. These continue to be strong today despite lower levels of support – a lesson for the developing world.

By contrast, the NRA to agriculture in developing countries has increased consistently since 1960. At that time it was at a low of minus 25% - indicating a significant additional cost to production by the state. This rate rose to minus 20% in 1980, and reached parity (0%) in 1985 – where subsidies at least balanced levies of various sorts. The rate peaked at 10% in 2000, but poor economic conditions since 2005 saw a decline to minus 5% in 2008, and a recovery to near parity again in 2010. Zambia is high on this scale, at around 10%, with South Africa and Mozambique just below the weighted average. Zimbabwe has a negative support level of below minus 20%.

Most of the subsidies in the developed world are highly targeted. In the United States, where subsidies are linked to certain products (mostly soybeans and corn), 65% of the approximately \$16.5 billion in annual subsidies goes to the top 10% of commercial farmers. OECD countries support their livestock and dairy industries with subsidies worth billions of dollars, much of it directed to large industrial level operations.

3.3 The global impact of agricultural subsidies

Agricultural subsidies are controversial in terms of their differential impacts. A common issue is the impact of agricultural subsidies in developed countries on developing-country farmers and international development. While agricultural subsidies can ease prices to benefit consumers, unsubsidised developing-country farmers often experience difficulties.

The effects on poverty are particularly negative when subsidies are provided for crops that are also grown in developing countries, such as cotton and sugar. In 2003, IFPRI estimated that the impact of subsidies costs developing

countries \$24 billion in lost agricultural incomes, and more than \$40 billion displaced from net agricultural exports. Further, since least developed countries have a higher proportion of GDP dependent upon agriculture, at around 36.7%, they are most vulnerable to the effects of subsidies.

Mark Malloch Brown, former head of the United Nations Development Program (UNDP), estimated that farm subsidies cost poor countries about US\$50 billion a year in lost agricultural exports: "It is the extraordinary distortion of global trade, where the West spends \$360 billion a year on protecting its agriculture with a network of subsidies and tariffs that costs developing countries about US\$50 billion in potential lost agricultural exports. Fifty billion dollars is the equivalent of today's level of development assistance."

Subsidies to agriculture in OECD countries exceed the amount of development aid, yet in the case of Africa, it is estimated that a 1% increase in agricultural exports would lift its GDP by \$70 billion – five times the value of foreign aid. According to Oxfam, "If developed nations eliminated subsidy programs, the export value of agriculture in lesser developed nations would increase by 24 %, plus a further 5.5 % from tariff equilibrium. ... exporters can offer US surpluses for sale at prices around half the cost of production; destroying local agriculture and creating a captive market in the process."

There is, however, a mixed record regarding actual subsidy implementation. While input subsidy programmes have increased production in developed countries, there are unclear effects on food security and poverty reduction. Fertiliser subsidies are particularly ambivalent, promoting household income, productivity and production, yet the opportunity costs are often foregone investments elsewhere and crowding-out of small farmers.

At the same time, strategies that improve policy design and implementation can also lead to economies of scale between markets. For instance, Malawi's experience of input subsidies shows how higher staple crop productivity, together with extended land supply, can positively impact the demand for higher-value farm and non-farm goods and services (Chirwa & Dorward, 2013).

Despite common patterns of structural transformation, global economic processes increasingly fails to absorb low-productivity agricultural labour. Evidence suggests a stagnation of growth in agricultural labour productivity in sub-Saharan Africa, with virtually no gain between 1961 and 2010.

The FAO therefore concludes that rapid agricultural transformation needs to be kick-started by government interventions in trade and markets. To maximise positive impacts, agricultural support is likely necessary in both input and output markets, particularly for countries where agriculture is not yet commercially mature (SACM).

Domestic markets that function inefficiently or without effective risk management may require productivity support as an initial stimulus (SADC, P35). The critical issue is to complement productivity-enhancements with strategies that expand farmers' access to seasonal finance, risk coverage and reduce costs in both input and output markets.

The right balance between the benefits of trade policies and the amenable policy space depends on specific country-level needs (FAO, 2016). In addition to policy type, the design, enforcement and implementation of subsidies in practice are crucial factors in determining appropriate policy space and subsidy use (SACM).

Table 1: Global overview of current agricultural subsidies

	Recent past	Current	Example of subsidy implementation
Developed countries	Net support to agriculture in constant decline since a peak of 60% in 1985, but nevertheless remains above 10%.	There has been a small rise in net support to agriculture since 2008.	In the United States, where subsidies are linked to certain products (mostly soybeans and corn), 65% of the approximately \$16.5 billion in annual subsidies went to the top 10% of commercial farmers. OECD countries support their livestock and dairy industries with subsidies worth billions of dollars.
Developing countries	Overall NRA to agriculture in developing countries has increased consistently since 1960. From a low of -25%, the NRA rose to -20% in 1980, reaching parity in	The NRA to agriculture recovered to near parity in 2010. While there is considerable diversity between regions' growth, India and China	Indian agricultural assistance largely comprises supply-side programs such as input and price support for fertiliser, electricity, irrigation and farm credit. Price support is a major feature of Indian policy assisting farmers' returns and cost recovery. Agricultural income is not taxed in India. R&D for climate

	1985. The rate peaked at 10% in 2000, but poor economic conditions since 2005 have seen a decline to -5% in 2008.	largely drive the rising assistance rates due to growing appetites for food imports.	<p>In Brazil, rural credit and insurance programs are major forms of market support through subsidy interest rates and insurance premiums</p> <p>Zambia is high on the scale of agricultural assistance, at around 10%, with South Africa and Mozambique just below the weighted average. Zimbabwe has a negative support level of below -20%.</p>
SADC	During periods of structural adjustment, SADC countries experienced major reductions of agricultural support. The removal of subsidies and price controls due to liberalisation policies generally increased producer and input	Following the Maputo declaration, there has been a shift to regionalise agricultural support. While assistance targets are 10% of government budgets, the form of current support	<p>The Southern Agricultural Growth Corridor of Tanzania (SAGCOT) targets regional agribusiness and conservation agriculture through public-private partnerships (PPPs). Joint financing explains why, despite low government assistance, support is de facto high due to private and donor investment. Due to deteriorating macroeconomic conditions, Zimbabwe has struggled to assist agriculture within the state budget. However, there are indirect mechanisms at play in Zimbabwe such as quasi-fiscal</p>

	<p>prices. The 2005 drought somewhat reversed the trend as governments intervened to mitigate drought and famines.</p>	<p>tends to be market integration and investment stimulation through trade and credit facilitation.</p>	<p>payments, fuel and credit subsidies, compulsory production purchases and transport controls that affect the unique market and trade patterns of Zimbabwe. In Malawi, the Farmer Input Subsidy Programme (FISP) occupies a major share of government budget. However, there are major food deficits in the country due to unfavourable climate conditions due to the almost-exclusive focus on maize.</p>
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CHAPTER 4: DATA REVIEW

4.1 LITERATURE REVIEW

At a global level, there are some significant new policy developments, captured in official documents as well as influential publications by the World Bank and the FAO. These include the landmark agreement at COP 21, which will impact on agriculture through the prioritisation of food security, and global development reports from the UN, FAO and the World Bank.

4.1.1 The UN Report: World Economic Situation and Prospects 2016

This report makes three important observations. The first is that more than seven years after the global financial crisis, policymakers around the world still face enormous challenges in stimulating investment and reviving global growth.

The world economy has been held back by several major headwinds: persistent macroeconomic uncertainties and volatility; low commodity prices and declining trade flows; rising volatility in exchange rates and capital flows; stagnant investment and diminishing productivity growth; and a continued disconnect between finance and real sector activities.

The second, more optimistic thought is that the Addis Ababa Action Agenda (AAAA), adopted in 2015, establishes “a new global framework for financing sustainable development that aligns all financing flows and international and domestic policies with economic, social and environmental priorities”. If this could happen many problems would be resolved.

The third, and most critical for this study, is that policy challenges are likely to intensify in the short run. The UN calls on policymakers worldwide to make concerted efforts to reduce uncertainty and financial volatility, and to strike a delicate balance between their objectives for achieving sustainable economic growth and maintaining financial stability. The UN believes that a response to a tightening of global financial conditions will require a variety of policy tools, targeted monetary measures and a more accommodative fiscal stance.

4.1.2 The UNFCCC process

COP 17 in Durban introduced agriculture onto the global Climate Change agenda, where the matter was referred to the Subsidiary Body for Scientific and Technical Advice (SBSTA). Two major themes were carried forward in COP 21 in Paris, which prioritises funding for the sustainable management of forests and the non-carbon benefits thereof.

The non-carbon priorities of the UNFCCC process are via Nationally Determined Contributions (NDCs) that include agriculture, forestry, fisheries and land use sectors. The need for investments in sustainable agriculture feed into FAO-supported programmes that link carbon finance to agricultural sources of mitigation and by IPCC targets.

Carbon sequestration is a major pillar of agricultural finance through the UNFCCC. Food security is also an emphasis within COP 21, although largely through a logic of addressing the “vulnerability of food production systems to the adverse impacts of climate change” (UNFCCC, 2015).

4.1.3 FAO Report 2015-2016: The state of agricultural commodity markets

This report analyses the relationship between trade and food security, with a view to “achieving a better balance between national priorities and the collective good”. Agricultural input subsidies are identified as one of the three forms of price policy, and may support:

- Infrastructure which supports production and / or post-production processes;
- research and / or market development;
- extension services; or
- regulation and standard setting.

Subsidies also include investment from donors or the private sector to provide any of the above if favourable to market development.

4.1.4 World Agriculture Towards 2030 / 2050” (2012 revision)

The Report of the FAO: “World Agriculture Towards 2030 / 2050” (2012 rev) indicates that “In aggregate, most of the increase in production (more than 85%) over the next 40 years is expected to derive from improved yields”.

Yield growth has been the mainstay of historic production increases. However, average cereal yields have been growing in a nearly linear fashion for the past five decades, implying a declining growth rate. Some regions, notably sub-Saharan Africa and Latin America, may experience faster yield growth if economic and institutional conditions are conducive. Global yields for cereals and major crops are generally projected to increase from 3.3 tonnes/ha in the base year to 4.30 tonnes/ha in 2050.

Unlike developed countries, the determining production factor for developing countries, is expanded land use, rather than increased cropping or intensity. Political-economic factors also greatly affect the potential for food production in developing countries and the insecurity that may emerge from unfavourable environments.

4.1.5 World Bank report: “The Future of Food: Shaping a Climate-Smart Global Food System”.

A further important intervention has been made by the World Bank Group in the 2015 publication of “*The Future of Food: Shaping a Climate-Smart Global Food System*”. The nexus between food security, agricultural productivity and climate change is a significant policy development. The strategic direction is towards “bundling” of support schemes, particularly through research and development, and a shift from distortionary and unsustainable support schemes towards “climate-smart agriculture”.

4.1.6 The 2015 Africa Competitiveness Report.

The 2015 Africa Competitiveness Report communicates joint priorities of The World Bank, the World Economic Forum, the OECD and the African Development Fund:

- Developing transport and ICT infrastructure;
 - Increasing the quality of education;
 - Reducing barriers to trade; and
 - Strengthening the regulatory framework.
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Significantly, the report suggests, “urgent attention should be given to the development of agricultural value chains integration in order to boost African farmers’ benefits and create an agribusiness industry... which would support the recent growth in large commercial agribusiness.” Emphasis on enabling small-scale farmers to participate in regional value chains, development of appropriate financial instruments to achieve this, and research for high-yield crops (WEF, 2015) are significant market opportunities.

4.2 COMPARATIVE STUDIES

4.2.1 Developing countries

The mixed record of agricultural input subsidies underscores diverse debates about subsidy appropriateness. Some programmes have led to clear increases in food production, but the evidence is generally insufficient or too mixed to enable robust judgements about clear food security and poverty reduction benefits.

Evidence shows fertiliser subsidies do generally promote household incomes, farm productivity and production in developing countries. However, subsidies may also crowd-out investments elsewhere or be misappropriated by larger farmers, often displacing the private sector. Also plaguing the use of input subsidies are bureaucratic inefficiencies and corrupt administrative practices.

There is considerable scope for improving impacts through better implementation and integration with complementary policies. In addition to improved better policy design, subsidies can be beneficial with supporting macro-economic and policy changes. There are a number of global provisions that offer opportunities for improving market development. The shaded section below shows the flexibility provisions for developing country WTO Members.

Flexibility provisions for developing country WTO Members in the Agreement on Agriculture

Article 6.2 *Investment subsidies that are generally available to agriculture, agricultural input subsidies generally available to low-income or resource-poor producers, and support to encourage diversification from growing illicit narcotic crops, are exempt from domestic support reduction commitments.*

Article 9.4 *During the implementation period, developing countries did not have to undertake commitments on certain export subsidies: subsidies to reduce the costs of marketing exports of agricultural products, and providing internal transport charges on export shipments more favourable than those for domestic shipment.*

Article 15.1 *General requirement that special and differential treatment should be reflected in the commitments undertaken under the Agreement on Agriculture. This was implemented with respect to the market access, export subsidy and domestic support commitments by mandating reduction commitments two-thirds of those required of developed country Members, as embodied in the Schedules of concessions and commitments of each Member.*

4.2.2 Asia: India

India is part of the South Asian sub-region representing more than one-quarter of the population in the developing world. The mostly rural, albeit highly dense population is heavily agriculture-dependent. The South Asian sub-region has approximately 0.16 hectares (ha) of agricultural land per capita. South Asian economies rely heavily on agriculture for GDP contributions and employment in agriculture is close to 50%. (ADB, 2009: 43-44).

India shares a need with SADC countries to reconcile increased food production to meet population needs, without increasing area under cultivation while also protecting resources and adapting to climate change (AEE, 2014). Although India experiences high, albeit variable rainfall relative to Africa (more than 1,200 mm per year), the country's high irrigation coverage provides useful comparative insights in terms of subsidy experiments for irrigation as a primary agricultural input. 60% of total agricultural water use in India comes from groundwater, which is likely to be affected by climate change, in terms of recharge capacities, as well as increasing demand (ADB, 2009: 58).

In India, supply-side programmes such as input subsidies for fertilisers, irrigation, electricity and farm credit are production boosters, but are coupled with market support to cover costs and improve farmers' returns (OECD, 2014).

Traditional market support exists through cheap land leases, in addition to government-facilitated credit supply and low tariffs on imported inputs and infrastructure (Ahmed, 1997). There is evidence, however, that these forms of agricultural support tend to favor certain farmers due to institutional barriers and alliances (Ahmend, 1999; O'Brien et al, 2004: 311).

Agricultural input subsidies as a percentage of India's GDP have steadily been increasing since the late 20th Century. The upward trend in the weighted NRA average reached 15.8% between 2000 and 2004 (OECD, 2009). There are idiosyncrasies in subsidy coverage, with import-competing assistance generally outweighing export sectors and a growing, albeit not yet significant, share of green box subsidies emerging due to public stockholding and relief payments for natural disasters (OECD, 2009).

In terms of market support for agriculture, financing is a crucial factor in India. Equipment financiers prove crucial in leveraging government subsidies for agricultural equipment (IFC, 2012). The India E-choupal also shows how input finance schemes can assist with procurement through agro-dealer "Know Your Customer" value chains (IFC, 2012).

4.2.3 South America: Brazil

Brazil is the largest exporter of beef, poultry and sugarcane globally, and there are significant insights on how these industries receive support. In Brazil, rural credit and insurance programmes occupy a major part of the policy space for agriculture. Such support is generally via subsidised interest rates to reduce the insurance premium for agricultural production, aquaculture and forestry.

Brazil's use of credit as an implicit subsidy is joined by heavy investment in R&D and in technologies and agricultural sectors that aim to leapfrog into aquaculture and biofuels sectors. Brazil's experience in leasing and asset finance indicates the potential market opportunities of donors and governments using lending schemes, based on client loans and equity, from banks and financial institutions (IFC, 2012).

4.2.4 Africa (non-SADC): Kenya and Nigeria

Kenya

A scan of Kenya's agricultural support indicates the potential of subsidy "bundling". In addition to traditional forms of agricultural support, e.g. seed systems, seed companies, fertiliser systems, markets and finance, support for R&D and capacity development are major features of agricultural assistance.

In particular, Kenya benefits from mobile technology support for agriculture. The expansion of Kenya's mobile money transfer scheme, M-Pesa¹, as a form of agricultural support includes a number of noteworthy applications:

- The COW App (mobile phones to encourage best practice for dairy farmers and increase milk production);
- M-FARM (virtually connects farmers to collectively buy inputs directly from manufacturers and sell produce);
- EFMIS-KE (provides fisher folk with greater access to market information);
- Intellect tech (helps farmers and insurance firms track compensation claims in real-time)

Research also shows climate change outcomes featuring prominently in Kenyan agriculture. Significantly, public-private partnerships, such as BrazAfrica that provides partial credit guarantee, appear to be significant in scaling handling agricultural cash payments in the absence of viable client-bank relationships (IFC, 2012).

Researchers are currently investigating policy frameworks and institutional support as forms of Climate-Smart Agriculture in Kenya.

Nigeria

Nigeria was the host country for the 2006 Africa Fertiliser Summit, partnered by the African Union (AU), the New Partnership for African Development (NEPAD) and the Government of Nigeria. The Summit led to the Abuja Declaration on Fertiliser for an African Green Revolution, in which AU member states set out to increase fertiliser intensity to an average of 50 kg/ha by 2015 (Danida, 2011: 2).

Despite abundant and fertile land and river systems, Nigeria is heavily reliant on food imports, funded by oil wealth, and experiences high rural malnutrition. These factors motivated the government's adoption of the Agricultural Transformation Agenda (ATA) in 2011 to increase farmers' access to markets through import substitution and productivity gains. The four pillars of the ATA are comparisons for SADC countries:

1. Infrastructure to improve market access;
2. Agricultural insurance to smooth incomes if crops are damaged by bad weather;
3. A privately managed fertiliser subsidy programme for poor farmers;
4. Increased import tariffs to promote self-reliance through import substitution.

Findings indicate that a fundamental challenge in Nigeria, unlike Kenya, is that a relatively small share of the national budget is dedicated to agriculture. Nigeria is, however, actively developing broad-based economic support for agriculture through market enhancement, insurance support and mobile technology.

Summary

In terms of the countries profiled, there are interesting shifts away from classic agricultural input subsidies. Governments appear to be investing in market support for agricultural development, through financial services promotion and supporting structures. Specifically, technology applications and forms of financial services are emerging with the aim to connect productivity benefits to market enhancement and insurance. The preference for such support suggests a degree of blended support underway, making a strong case for advising further on emerging integrated policies.

4.3 AFRICA

4.3.1 Overview

The Africa Progress Report 2014, “Grain Fish Money” represents the increasing major opportunities in connecting agricultural and financial development in Africa. The report diagnostic does, however, highlight three major obstacles to be overcome: lack of access to formal financial services; infrastructure weaknesses and public investment deficits (AFD, 2014).

Details of the report are significant. Two-thirds of adult Africans do not have a bank account, let alone access to savings, credit or insurance (AfDB, 2014). Intersecting with poor access to basic infrastructure – transport, electricity, sanitation and water – is a need to mobilise tax revenues and external finance (ibid).

Understandably, the report’s publisher, the African Development Bank prioritises financial constraints and goals in stimulating agricultural investment:

- *Market concentration:* Africa's banking systems are highly concentrated. Around 85 per cent of Mozambique's banking system assets are held by three banks.
- *Reach and size:* Patterns of provision vary across countries, but most of Africa's banking systems operate as small enclaves in the wider economy. In Mozambique and Tanzania, over half of the population has no access to financial institutions and financial services are dominated by informal providers. Access to finance typically differs in urban and rural areas.
- *The regulatory environment:* Governments use banking systems for a variety of objectives, not all of which are conducive to developing more efficient and equitable financial systems. In Ghana, commercial banks operate a highly lucrative trade in government securities, reducing incentives to seek investment opportunities in the private sector. In Ethiopia, banks are required to hold the equivalent of 27 per cent of their lending in national bank bills. The lower returns on these bills lead to banks raising fees and commission charges. In Zambia, the government holds a stake in 39 state-owned enterprises, most of which are unprofitable – and many of which borrow from commercial banks.
- *Macroeconomic conditions:* While macroeconomic management has strengthened, uncertain conditions do hamper financial transformation.

The report is blunt in recording that Africa’s smallholder farmers need access to seeds, fertilisers and technologies that boost productivity, and that flawed policies, including restrictions on regional trade, need to be revised.

Recommendations are to “*accelerate a uniquely African green revolution*”, by:

- implementing the Maputo Declaration commitment;
- strengthening the entitlements and rights of women,;
- reinvigorating the role of farmers’ cooperatives and associations;
- investing in agriculture research and innovation; and
- preventing “land-grabbing”.

Other recommendations for governments, all of which have some relevance, include the need to:

- stop the plunder of natural resources;
- invest in infrastructure and develop more inclusive financial systems; and
- mobilise resources for inclusive growth.

In regard to the latter, the report concludes that the singular challenge for governments is “to develop policies and financing instruments that mobilise the full range of domestic and external resources to underpin inclusive and transformative growth.”

4.3.2 The African Union

In July 2014, HE Professor Bingu wa Mutharika, President of Malawi, in his capacity as Chair of the African Union (AU) Assembly in July 2014, called for Africa and all cooperating partners to focus on improving agriculture and food security in the next five years.

The AU prioritises subsidies, budget allocations and significantly affordable information and communication technology to enhance agriculture. Particular emphasis is on facilitating smallholder and women farmers to enter the commercial sector. Typical subsidies are part of the AU vision, for fertilisers, improved seeds, pesticides, tractors and irrigation equipment, as well as support for extension services and marketing systems.

AU vision statements also highlight the urgency of reducing post-harvest food loss, which in sub-Saharan Africa is estimated at 40%. A major strategic opportunity lies in financing storage facilities, particularly in collateral management of such infrastructure. Storage infrastructure assists not only in loss reduction but can also facilitate new markets, such as logistics and processing.

4.3.3 NEPAD and CAADP

NEPAD's Agriculture and Food Security programme focuses on helping African countries improve economic growth through agriculture-led development. The Agency aims to improve access for smallholder farmers in Africa to markets, finance and technical support.

The Comprehensive African Agriculture Development Programme (CAADP) supports NEPAD's agricultural programme. CAADP connects key players at continental, regional and national levels, improving co-ordination and promoting joint efforts to achieve the CAADP goals. An Implementation Strategy and Roadmap guides and monitors the 2025 Vision of CAADP.

The CAADP envisions dynamic agricultural markets within and between countries and regions by 2015, and a continental goal of being a net agricultural exporter. Underlying visions include environmentally sound agricultural production and sustainable management of natural resources in Africa.

Specifically, the CAADP aims to raise agricultural productivity in Africa by at least six percent annually. However, this was premised (and dependent) on countries committing at least 10% of their national budgets to agriculture. Since 2003, thirty countries have signed up to the CAADP Compact, as yet only eight have met the 10% target.

It is encouraging to note that nine countries have exceeded the production growth target (Angola, Eritrea, Ethiopia, Burkina Faso, Republic of the Congo, Gambia, Guinea-Bissau, Nigeria, Senegal, and Tanzania) and another four have achieved growth of between 5 and 6 per cent. It is not clear if any of this is attributable to increased productivity.

There are a number of programmes under CAADP that are delivering tangible results. The Fertiliser programme aims to improve the quality of fertiliser policy formulation and implementation through peer review and sharing of country and regional experiences. There are a number of supporting science networks, such as the African Biosciences

Initiative (ABI), which promotes biological applications for improved agriculture productivity, and the Forum for Agricultural Research in Africa (FARA), which links country research and development institutions.

4.4 SADC

4.4.1 Overview

As a regional organ, SADC does not have any specific incentive schemes (or targeted subsidies) in the agriculture sector. However the recently approved Regional Agricultural Policy (RAP, 2014), provides for steps to be taken to promote the development of common guidelines on subsidies and levels of investment in the agriculture and related sectors. In terms of this, the Secretariat is currently developing a Regional Agricultural Investment Plan, which will be driven through incentive-based instruments. This should be in draft form by June this year, after which the capacity of SADC to shape country based incentive programmes will be tested. Yet inertia around existing practices and

resistance to new expenditure lines (especially over the past decade) limit the take-up of any new commitments. Even South Africa has not been able to demonstrate its fulfilment of the 10% budget allocation to agriculture.

As an example, Seychelles is one of the few countries to have undertaken a CAADP Stocktake (which also serves as a National Food Security Strategy and as a National Agricultural Investment Policy). This was finalised in 2008, and contains a clear commitment to addressing three factors affecting the costs of production:

- **The availability of agricultural inputs and supplies**, including animal feed and drugs.
- **Improved institutional support and policy**, which is described as follows:

The role of food producers will be recognised and incentives offered by Government to enhance the output of the sector. These include, tax exemptions, soft loans and possibly subsidies on agricultural inputs.

- **Expansion of agricultural infrastructure**, where it is noted that:

Growth in the agricultural sector, especially the livestock sector over the years, was not accompanied by a similar expansion of support facilities such as the abattoir, hatchery or animal feed production facilities.

Similarly, the crop production sector demands better irrigation, road access facilities and market support systems.

Nearly a decade later, there is no evidence of any of these commitments being fulfilled beyond what had been happening in 2008, and would otherwise have been happening in 2016.

Nevertheless, the agriculture sector remains of major social and economic importance in the SADC region, contributing between 4% and 27% of GDP in the different Member States and approximately 13% of overall export earnings. About 70% of the region's population depends on agriculture for food, income and employment.

Food security is a recurring theme in SADC policy visions, which typically focus their objectives on smallholder farmers and their access to factors of production and input and output markets. Less emphasis is placed on improving dual market efficiencies which are beneficial for increasing food availability.

“The availability and access to inputs continue to be the challenge to agricultural production in most Member States. This has a direct negative impact on agricultural production and food security in Member States. The key agricultural inputs include seeds, fertiliser, fungicides, insecticides, herbicides and veterinary drugs.”
(SADC Executive Secretary, 2013)

A positive development is the agreement in the SADC to promote trade of seed varieties between countries and to increase their availability to farmers. There are indications of successes in this regard, such as the SADC Seed Centre, at the SADC Plant Genetic Resource Centre (SPGRC) in Zambia, and the Centre for Coordination of Agricultural Research and Development in Southern Africa (CCARDESA) in Botswana. SADC support for these establishments constitutes important forms of regional agricultural support.

The Table below shows statistical indicators for SADC regarding agriculture, land use and food production. These show significant variations between countries, and also within countries over time. Some indicators do suggest the need for further exploration; for example the Democratic Republic of Congo claims only 11.4% of its land as being farmed, while agriculture contributed 43.7% of GDP in 2008. By contrast, South Africa, Lesotho and Swaziland indicate over 70% of land as agricultural, and yet GDP contributions are all below 10% - only 2.5% in the case of South Africa.

The Food Production Index, calculated by the FAO, is probably the most significant indicator of the changes that have taken place. Angola has increased its Index by nearly 500%; Malawi by 400%, Swaziland and Zambia by 300%. These are from a low base, but the increases are important signs of improvements in food production and agricultural

productivity. Regrettably, Namibia is the only SADC country to have shown a decline, and although small, it counters a very positive trend in most other countries.

Table 2: Selected SADC indicators related to agriculture

Country	Share of GDP		Agricultural land %	Food Production Index	
	2008	2013	2011	1980	2011
Angola	6.8	na	46.8	38.1	187.6
Botswana	2.0	na	45.6	70.0	141.6
DRC	43.7	na	11.4	88.5	112.3
Lesotho	7.4	7.5	76.2	87.0	105.7
Madagascar	24.5	26.3	71.2	71.8	122.6
Malawi	Na	29.9	59.2	44.1	159.2
Mauritius	4.0	3.3	43.8	91.2	107.2
Mozambique	27.9	27.1	62.8	58.7	158.3

Namibia	7.9	7.8	47.1	92.4	89.9
Seychelles	2.9	na	6.5	125.0	na
South Africa	2.5	na	79.4	68.1	112.4
Swaziland	8.5	na	71.0	78.0	218.7
Tanzania	25.7	na	42.1	46.6	130.5
Zambia	7.8	8.3	31.5	48.1	153.6
Zimbabwe	21.3	na	42.2	80.4	104.4

Sources: FAO, SADC Statistics Unit and National Statistics Offices

4.4.2 Food prices in SADC

A scan of meta-data across SADC countries has been conducted using World Bank data sets, FAO statistics, as well as dynamic crowd-sourced data. One simple but significant set of real-time, crowd-sourced data provides current prices for various food products. These show wide discrepancies across countries which should have relatively similar markets, and these differences may point to national policy choices.

Table 3: Crowd-sourced food prices in selected SADC countries

Price of basic food items (in US\$) and Ranked position of price among 17 African countries						
Country	Loaf of bread	Rank	1kg tomatoes	Rank	12 Eggs	Rank
Zimbabwe	0.98	3	1.47	4	2.08	3
South Africa	0.79	4	1.14	9	1.46	11
Zambia	0.76	7	1.00	11	1.36	13
Namibia	0.72	8	1.22	6	1.22	6
Tanzania	0.69	9	1.25	5	2.35	1
Botswana	0.60	11	1.15	7	2.01	4
Mauritius	0.52	13	2.25	2	1.99	5

In the countries under review, based on the aggregate price of bread, tomatoes and eggs, Zimbabwe rates highest overall, with Tanzania close behind. Comparable data for Malawi were not available, but prices seem to be similar to Tanzania. Prices in Zambia were significantly lower. These prices should be regularly monitored to identify trends and

perhaps identify underlying factors. The data is regularly updated on the website <http://knoema.com/zsnikdf/food-prices>.

The variability and volatility of basic food prices in SADC countries makes any analysis of relationships between input costs and market prices very complex. As a result, overall food prices seem to bear little or no relation to agricultural input subsidies.

It is difficult not to conclude that normal market determinants of demand and supply are not effectively at work in many of the agricultural markets in SADC. Additional factors, including socio-economic conditions and infrastructure, significantly impact on food prices. While there may be limited role for agricultural subsidies as instruments of price policy or even food security, there are indications that market assistance can assist other policy objectives.

4.4.3 The SADC Regional Agricultural Policy

The Regional Agricultural Policy (RAP) currently guides the SADC regional organ, and its FANR Directorate. It is an ambitious document, proposing diverse interventions, suggesting the RAP is perhaps more of an aspirational policy

statement. Despite ongoing monitoring, it is too early to expect major impacts arising from the relatively recent adoption of the RAP (2013).

The RAP focuses mainly on productivity enhancing inputs for crop and livestock development, as well as landscape management. According to the RAP, affordable, appropriate and cost-effective inputs include improved plant and animal genetic material, enhanced application of nutrients to correct soil fertility (RAP, para. 28). The RAP makes a number of bold policy statements for SADC countries, including enhancing access to yield enhancing inputs, sustainable use of materials and support of appropriate market infrastructure and services (See policy statements 10.1-10.3, RAP, 2013).

The RAP is significant in highlighting declining soil fertility in the SADC region. A number of factors, such as depletion of soil nutrients, poor land management and agricultural practice, emphasise the need for changed approaches. The RAP proposes raising the levels of organic and non-organic nutrient application together with “good agricultural practices including conservation agriculture (CA)” (para. 38).

Research and development is also a priority in the RAP's Policy Statements 11.1, which commits SADC members to "complement and support...measures designed to promote agricultural research and development in crops, livestock, fisheries and forestry". Policy statement 11.3 further supports this vision through the following interventions:

- training and skills development for all players in the agricultural value-chain;
- the strengthening of organisations of farmers and other value-chain actors;
- the promotion of smallholder scale economies;
- sharing best practice on sustainable credit systems; and
- developing a strategy for agriculture related transport and logistics infrastructure and services.

The RAP proposes to improve farmers' access to and participation in regional input and output markets through price risk management and stabilisation. However, there are some conflicts with Policy Statement 14.1, which commits the SADC to support reduction of non-tariff measures and barriers on trade of agriculture goods and services.

This apparent contradiction is partly reconciled in Policy Statement 14.2, where the SADC seeks to "rationalise external SADC tariffs and implement safeguard measures in agriculture". It notes that external tariff regulations such as import and export duties and taxes, lists of sensitive products, and other safeguard mechanisms are important

instruments to consider for agriculture and food security in the context of regional integration and trade relations with third parties.

The proposed interventions are therefore somewhat generic and rather muted. They include “fiscal reforms and improved revenue collection mechanisms”, but note the need to address the “different fiscal and socio-economic needs of different categories of population and economic players in the region”, leaving a lot of room for manoeuvre. It is however more assertive in regard to “Reducing external tariffs on selected production factors such as green technologies”.

Infrastructure promotion and improvement is a major RAP focus (see Policy Statement 15.1), using a “landscape approach” in which agricultural infrastructure include transport, storage and market logistics. Of particular interest is a focus on new infrastructure development in agriculture specific areas with regional/multi-country scope. These could include inter-country transport corridors, SPS facilities, regional commodity exchange networks and cross-border irrigation schemes.

In terms of value-chain promotion, the RAP takes a market approach to support an enabling environment for commercial farming and agri-businesses through promoting common guidelines and subsidies in agriculture related sectors. Public sector investment is also a focus through provision of financial and legal support and eliminating barriers to investment.

There is an important regional development in the SADC to promote the development of regional guarantee / insurance mechanisms and support national loan facilities that reduce overall agricultural financing costs. Supporting interventions include research, capacity building and improved data and information collection, and sharing systems.

The thrust towards private sector also cautions against the negative impacts of aid (including donor or state funds) on market development or crowding out of the private sector.

Finally, Policy Statement 19.1 commits SADC member states to improve capacity to adapt to and mitigate climate change and variability. Climate actions include:

- developing appropriate adaptation strategies for climate variability and change in the agriculture sector;
- enabling the agriculture sector to benefit from carbon trading;

- the provision of early warning weather information to farmers; and
- the incorporation of environmental impact mitigation measures in national and regional agricultural policies and programmes.

4.4.4 FANR and FANRPAN

The SADC Food, Agriculture and Natural Resources Directorate (FANR) is responsible for programmes in food security, crop and livestock production and fisheries.

The flagship Multi-Country Agricultural Productivity Programme (MAPP) is a 15-year programme, implemented by the FANR under the NEPAD and CAADP. The Programme focuses on agricultural research, and seeks to strengthen technology development, technology dissemination, and linkages among agricultural institutions in the SADC region. MAPP aims to develop market- and smallholder-responsive and accessible agricultural technologies, creating agricultural growth and increasing rural incomes.

Despite a 5 year cycle, there is no evidence of any MAPP evaluation or reporting. The 35th SADC Summit of August 2015 had no mention of MAPP.

The IDRC-funded *Strengthening Evidence-Based Climate Change Adaptation Policies* (SECCAP) project is led by the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), a subsidiary body of the FANR. This aim is to study climate scenarios in three countries – Swaziland, Lesotho and Malawi – and consider the feasibility of improving productivity through various cropping options.

The projections of the study estimate a decline of 20% in maize production across the three countries by 2050, with a 5-25% decline in land suitable to grow staple crops, together with reduced productivity. However, in Lesotho, maize yields are estimated to increase by about 7% as a result of rising temperatures.

The study concluded that adaptation choices are partly influenced by the perceived cost of the available options. In Malawi, 21% of farmers failed to use adaptation options involving fertilisers, due to expense, while 38% cited high labour costs of conservation agriculture and pit farming. Of concern is that around 50% of farmers in Malawi cited high costs as a key barrier limiting the use of chemical fertilisers and adoption of conservation agriculture practices.

By contrast, in Malawi, conservation agriculture recorded the highest profitability index of 2.07, followed by fertiliser application at 1.80, and irrigation at 1.72 (where an index of 2 indicates that farmers would earn twice their initial level of investment over a specific time period).

CHAPTER 5: AGRICULTURE INPUT SUBSIDIES IN SADC

5.1 Overview

Drawing definitive conclusions on the matter of agricultural input subsidies in SADC countries is complicated by two research impediments. One of these is the absence of recent and relevant data, and the fact that data are largely compiled by government agencies. In addition, although global figures are sometimes available, there is little disaggregation of the data (or the possibility of doing so given collection methods). Most records are paper based, so there is also little opportunity for trend analyses. So questions about who gets how much and what for are not always evident.

The data paucity is especially true on the matter of agricultural outputs, which are seldom recorded in a systematic fashion, since markets themselves are not always formalised. Again, country-level figures are available, but these make any direct correlation between input subsidies and production difficult to determine.

The second impediment is that subsidies are not always driven by tight policy and administrative procedures. The amounts are seldom predictable, and the criteria and selection of qualifying farmers can be erratic from year-to-year. External factors, other than purely economic reasons, are often the basis for the payment of agricultural subsidies. These are not dealt with in terms of any trade regulatory framework, and the assumption in many cases is that subsidies are undesirable.

As a result, parties are not always comfortable in discussing the issue, which has the potential to be (or may even have become) politicised. From the village level to the highest levels of governance, key decisions are being made about the allocation of limited resources, and there is inevitably contestation around these. The management of the subsidies therefore becomes a key issue: this has to be done in an open and transparent manner. This will form part of the key recommendations of the report.

What has become evident in all the research, desktop and on the ground, is that there is not yet sufficient consensus within SADC countries, or in the regional body, about the value and purpose of agricultural input subsidies.

A survey of the fifteen countries of SADC shows that none of them make use of input subsidies that are aimed at affecting either productivity or prices. Subsidies are used in some countries to reduce input costs, and these appear (and are claimed) to increase production of basic foodstuffs, which should have a downward effect on prices. However, market inefficiencies and poor data collection make this conclusion tenuous.

State-provided agricultural inputs come in many forms, and are difficult to quantify. Although donations of cattle, seeds or implements to communities can be costed, it is unclear how many farmers and what agricultural or other purposes are achieved. Most programmes target subsistence farming or low level commercial production, and should probably be discounted in terms of any price related effects.

Productivity growth is mostly the consequence of better seed (or livestock), and better inputs (fertilisers or feed). One of the few accurate and available sets of data are annual reports on fertiliser use in SADC countries, most likely due to commercial data collection. The AU has set a target of 50kg/ha (2006 Abuja Declaration), but only South Africa has met this. Yet the data show wide discrepancies across countries, suggesting that fertiliser use is also contingent on unpredictable factors.

Table 4: Fertiliser use (kg per hectare) – selected SADC and other countries

	2001 - 2005	2006 - 2010	2011 - 15
Malawi	29.5	39.9	43.2
South Africa	60.3	59.5	57.7
Tanzania	8.6	7.7	4.7
Zambia	46.1	33.9	42.1
Zimbabwe	29.5	29.1	36.8
Europe			>200
China			>360
South America			>500
Malaysia			>1700

5.2 Impact analysis

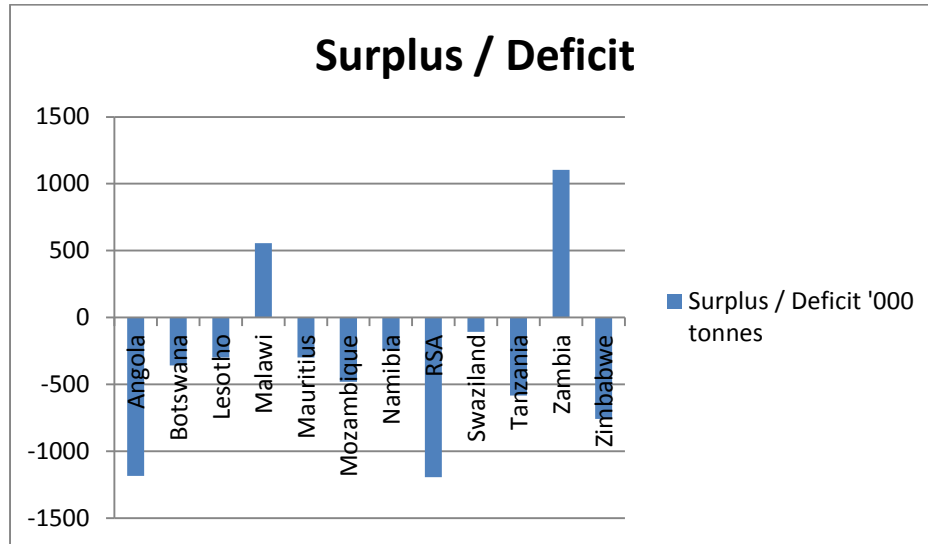
There are no easy correlations between the above figures and productivity, let alone with production levels. For example, notwithstanding continuing (and declining) low levels of fertiliser use in Tanzania, maize production rose from 150 000 tonnes in 2010 to 251 375 tonnes in 2012. Similar patterns in other countries suggest the influence of land expansion in driving production levels, rather than the productivity of existing lands. Better farming methods, such as judicious use of fertilisers with other organic nutrients, may also explain any productivity gains.

Similarly, there are claims that since the adoption of various agricultural commitments², most SADC member states have recorded better annual harvests. A 2011 report on the state of vulnerability to food insecurity and poverty in SADC notes that in addition to the generally good rainfall, a number of countries are implementing different types of programmes to increase yields. Strategies include investing in improved agricultural inputs, such as seeds and fertiliser, and targeted subsidy programmes that improve access to cheaper farm inputs.

The graph below shows that in 2012/2013, Malawi and Zambia had cereal surpluses. Since these two countries have consistently applied input subsidies, it appears these must have had some impact, although a direct correlation is not clear.

² Such as the Dar es Salaam Declaration on Agriculture and Food Security in 2004.

Chart 1: Cereal surplus or deficit by country for 2012/13



Source: SADC Annual Report 2012/13

While production is highest (and rising) in Malawi and Zambia, which do have input subsidy programmes, many other factors (including climate) play a role. For example, in the 2007/08 farming season maize production trebled from about 1.2 million tonnes to 3.4 million tonnes in Malawi. The average between 2010 and 2014 was 3.7m tonnes, with 3.929 m tonnes in 2014. However, 2015 only delivered 2.877 m tonnes – a 27% decrease. Without any price intervention mechanisms, the result is a price increase from 70 kwacha/kg in December 2014 to 150 kwacha/kg in December 2015.

5.3 CASE STUDIES

5.3.1 Country selection

Four countries have been identified for the study: Malawi, the United Republic of Tanzania, Zambia and Zimbabwe. Agricultural input subsidies, mostly for fertilisers and seeds historically exist in Malawi, Zambia and Zimbabwe. Tanzania will constitute a special focus, given recent developments in that country.

The 2014 CPIA Africa report (Chuhan-Pole, 2015) describes the progress of African countries in strengthening the quality of their policies and institutions. It scores 38 African countries that are eligible for support from the

International Development Association (IDA), the concessional financing arm of the World Bank Group. CPIA scores reflect the quality of a country's policy and institutional framework on a scale of 1–6, with 6 being the highest.

The average CPIA score for sub-Saharan African countries was 3.2 in 2013 and 2014, indicating the need for policy quality:

- **Malawi** ranks highest with a score of 3.2 with “policies for social inclusion and equity”, including gender equality and environmental stability. Malawi's financial management scores are also improving due to reporting related to planning, audit compliance, and budgetary practices. The country's Starter Pack program is improving access by smallholder farmers to inputs.
- **Tanzania** scores 3.8 for “economic management”, with fiscal and debt policy ranking highest. Tanzania utilises decentralised targeting, allowing for beneficiary targeting of input subsidies. However such targeting processes require continuous scrutiny, particularly in remote areas. Local elites often disproportionately benefit from vouchers in community-based targeting process. Tanzania also utilises a savings-based approach to assist farmers in getting inputs timeously for seed and agro-chemical purchase for cotton production. Credit equivalent to the subsidy at harvesting season is used in exchange for farmers' seed cotton. Evidence is, however, still weak regarding the impact of such approaches to delivering input subsidies.

- **Zambia’s** score of 3.4 for “structural policies” was highest for trade, finance, and business regulation, with similar progress in debt policy and management. Zambia is implementing e-voucher schemes, through delivery via text messages to mobile phones or the use of bank cards or electronic “smart cards.” Anecdotal evidence in Zambia indicates that e-vouchers significantly reduce administrative costs of subsidies.
- **Zimbabwe** scored 2.7 on “policies for social inclusion and equity”. Gender equality and institutions for environmental stability rank highest in Zimbabwe, which also led all countries with a large 0.4-point increase due to improvements in fiscal policy and debt management.

5.3.2 Zambia

Zambia has a long history of a relatively successful fertiliser support programme, which has raised overall production of staple crops. There are also a number of relevant agricultural projects in Zambia, grouped under the Agricultural Development Support Project (ADSP). The ADSP is an agricultural development project financed by the World Bank’s International Development Association (IDA) through a Sector Investment Grant of US\$37.2 million.

The ADSP objective is increased commercialization of smallholder agriculture through improved productivity, and improved quality and efficiency in food value chains. The aim is to improve access to markets and agricultural competitiveness. Beneficiaries include smallholder farmers, agribusiness, and large-scale estate / commercial farmers.

Of particular interest is that the Farmers and Agribusiness Enterprises (FAE) component of the ADSP that comprises: a Supply Chain Credit Facility (SCCF), a Market Improvement and Innovation Facility, and a Rural Roads Improvement Facility. The aim of the SCCF is to provide a credit, on a demand driven basis, to support investments for improving supply chains of existing and emerging contract farming systems. This may enable agro-enterprises, and commercial farmers working with smallholders, to borrow foreign exchange to finance capital investments, seasonal inputs and export activities. Regrettably, “institutional issues” have meant funds have been reallocated.

Between 2000 and 2009, agricultural subsidies in Zambia consumed on approximately 60-75 percent of the annual agricultural budget (GDI, 2011). However, large government support for maize production through the Fertiliser Support Programme (FISP) may impede CSA practices, such as crop rotation, by omitting crop diversity, and adaptation to changing climates (Umar et al in Andersson et al, 2014: 118).

5.3.3 Malawi

Malawi has a Farm Input Subsidy Programme (FISP) with an innovative ICT component that issues e-vouchers to smallholder farmers to improve farm input efficiency and distributive effectiveness. The e-voucher was introduced via the local mobile money provider, known as Zoono, to curb corruption in the FISP.

Malawi distinguishes between general and targeted subsidies. The distribution of seed-packs has substantially increased output, but the architecture for marketing is absent, and transaction costs are high. As a result, informal markets are the instruments of trade, with little or no recording of data.

A 2013 study by the Overseas Development Institute (ODI) evaluates the benefits of the 2006/7 Malawi Government Agricultural Inputs Subsidy Programme that aims to promote access to and use of fertilisers in maize and tobacco production. The subsidy includes a coupon system to be redeemed by the recipients for fertiliser at approximately one-third of the normal price. The ODI concludes that the voucher or coupon system can be effective to ration and target

subsidy access, and increase production and economic gains. However many practical and political challenges remain in the program design and implementation that affect efficiency, costs, patronage and fraud.

5.3.4 United Republic of Tanzania

Tanzania is well endowed with important and high-agricultural potential land and water resources. 72% of the population lives in rural areas, and the agriculture sector is key to overall economic development, generating 24.1% of GDP and 30% of export earnings. The 75% of the population engaged in agricultural labour are predominantly woman and smallholders (farm sizes of between 0.2 and 2.0 hectares) (URT, 2013).

In the national development agenda, agriculture is expected to lead the growth and structural transformation of the economy. However, significant improvements in the agriculture productivity are necessary to raise average real incomes of Tanzanians.

Since 2006, Tanzanian yields have been mostly stagnant and agricultural productivity gains are generally based on the expansion of cultivated land, one of the major drivers of deforestation and land degradation in the country. The

Tanzania Meteorological Agency (TMA) also shows that previously productive areas such as the Southern and Northern Highlands will experience declining rainfall, frequent droughts and increasing variability of rainfall with major implications for seeds, pesticides and types produce (URT, 2009).

Despite the economic and social role of agriculture in Tanzania, critics note that the country is yet to achieve the 10% goal of the Maputo Declaration, with current budgets at around 7% of GDP. Many of the ambitious targets set by government, such as 1 million acres under irrigation, yielded only 43 000 hectares in 2015.

Maize, and more recently rice, are the staple foods for the majority of Tanzanians. Most maize is produced by small-scale farmers, usually under low input, rain-fed conditions. It is both a subsistence and cash crop. The maize value chain is fragmented and poorly coordinated. There are many layers and inefficient connections between producers and consumers. Considerable uncertainty often discourages investment by both resource-poor, risk-averse small-scale farmers and commercial investors. Due to poor market stimulation, 80 percent of all maize in Tanzania is consumed by producing households. Changes are needed to help millions of subsistence small-scale farmers to become profitable in the market.

Maize disincentives discourage many Tanzanian farmers. The Monitoring African Food and Agricultural Policies Project (MAFAP) suggests that the sale of subsidised maize by the National Food Reserve Authority, and excessive marketing costs are major disincentives for maize market economies of scales. The report also suggests there is a bias within government to keep maize prices low, disadvantaging farmers. During years of maize exports, the United Republic of Tanzania's erratic trade policy (with frequent export bans) prevented prices recovering in regional markets. Moreover, lack of storage capacity results in low export prices in good years and high maize domestic prices in lean years (Berreri-Hurle, 2012).

In 2011, an estimated 6.59 million metric tonnes (MT) of maize was grown in Tanzania. Of that, 6.4 million MT was consumed and 114,100 MT was exported. Approximately 12,000 MT was imported and 73,800 MT used for the following season's seed. These figures show a marked increase on previous figures. It is expected that domestic and regional demand will significantly grow in the coming years, with additional demand for yellow maize for stock feed. The environment appears ripe for interventions, which if appropriate and sufficiently supported, are major opportunities to develop the maize sub-sector.

However, maize production in Tanzania has varied dramatically over the years (see table below). A small negative trade balance until 2010, in the face of an almost decade-long export ban for maize, is typical after a poor harvest and/or price peaks. Export bans are usually imposed to avoid production being diverted to Kenya, where prices are significantly higher. However, the maize export ban generates uncertainty for economic agents, particularly if implementation is unclear, impacting investments and price incentives (World Bank, 2009).

Table 5: Maize production in Tanzania 2000-2011

Year	Maize production (million tonnes)
2000	1.965
2001	2.652
2002	4.408
2003	2.613
2004	4.651
2005	3.131

2006	3.423
2007	3.659
2008	5.949
2009	6.130
2010	6.303
2011	6.594

Fertiliser subsidies in Tanzania (primarily for maize production) have increased from US\$7.1 million in 2005/6 to US\$63.6 million in 2010/11, largely donor funded. Government estimates current spending is around US\$30 million per year, suggesting minimal increases in real or nominal terms. Most of the maize produced by subsidised rural households is for subsistence use, although the marketed share seems to be increasing to around 40 percent.

A rather pessimistic report undertaken by the FAO concludes as follows:

“Official statistics on maize production and marketing have not been very accurate. There are several reasons for this. First, the different sources do not correlate or crosscheck their numbers. Second, there has

been little demand for up-to-date reliable information from the authorities in decision-making. Third, there is significant illegal trade through Tanzania's porous borders that escapes being counted.

The links between the potential demand, processors and producers is constrained by structural, political and administrative factors. As a result, there is little 'pull' in the value chain to stimulate improvements in production. At the political level, the Government is simultaneously trying to ensure adequate returns for maize producers while maintaining low prices for consumers. The focus on domestic self-sufficiency and affordable prices for urban consumers has blocked the vision of a more productive and profitable commercial maize sub-sector that looks to develop and expand markets, and 'pull' further growth in production.

Maize marketing is characterized by a lack of trust, information and goodwill between producers and traders and processors. Although, there are some successes there is little sign of a new overall way of looking at the relationships between farmers, traders and processors. These groups are more often in conflict than working

in competitive harmony. And while price, quality and quantity are issues that need competitive discussion, this can best be done within a fair and open framework. This is not currently the situation.”³

The report concludes as follows:

“Current constraints include uncertain land tenure, little access to affordable finance, poor rural infrastructure, periodic bans on cereal exports, corruption, local taxes on farm production, the limited availability of improved seed, weak business skills and inadequate institutional and technical capacity. Many constraints are now being tackled on a sector-wide level.

Of special importance to maize will be improving linkages between producers and processors. There are opportunities to help large-scale millers develop better, more equitable commercial links with farmers' groups, and to support the further development of Warehouse Receipt Systems (WRS). Formalisation and increased efficiencies in small-scale millers are also needed.”

³ R Trevor Wilson and Lewis J, The Maize Value Chain in Tanzania, FAO, 2015

The report calls for private sector support to ensure that well-meaning interventions from the Government, donors and international foundations do not stifle private sector initiative in the field. It also calls for the development of new markets – both domestic and export – and for encouraging environmentally friendly 'Green Growth' options.

5.3.4.1 Market policy

Since 2008, Tanzania has focused on developing an efficient agricultural marketing system as a pre-requisite for fostering agricultural development. The Agricultural Marketing Policy (AMP) serves to “guide the operations of the agricultural marketing systems” through ensuring coherence, profitability and sustainability (2008). The AMP also recognises the need to facilitate financing, improve marketing infrastructure, and provide information on the management of risks. However, significant impacts of the AMP are not yet evident.

The maize marketing system continues to comprise many small traders operating from both the main centres of production and major urban areas. Marketing channels include lengthy brokerage services at village, district and national markets. Public interventions in the market remain low, and produce is generally taken to primary markets directly by farmers or middle men. Post-harvest losses are also significant.

Market margins along the value chain are generally quite high, suggesting inefficiencies. Prices vary greatly between seasons, and only those with access to storage facilities and financial services are able to take advantage of the price fluctuations.

5.3.4.2 Government programmes

The Government of Tanzania recently adopted a Climate Smart Agriculture Programme, identifying six strategic priorities as pro-growth and pro-poor development agendas:

- improved productivity and incomes;
- value chain integration;
- improved institutional coordination; and
- research and innovation.

Tanzania's Climate Smart Agriculture Programme identifies the low use of appropriate inputs, especially by women and smallholder farmers, and increasing access to, and wise application of, fertilisers, pesticides and seeds, medicines

and veterinary services. The programme also identifies the need for marketing and business support services, by both the public and private sectors. This suggests a highly amenable climate in Tanzania for investments into sustainable agriculture.

5.3.4.3 Remote crop monitoring

Tanzania recently introduced remote technologies to monitor crops (The Guardian, February 21-27, 2016, p4). The Ministry has partnered with local and international universities to use remote sensing applications to monitor crop conditions in real-time. This will be used to compile a Food Security Index, which will be updated monthly.

5.3.4.4 The Southern Agricultural Growth Corridor of Tanzania

The Southern Agricultural Growth Corridor of Tanzania (SAGCOT) is an inclusive, multi-stakeholder partnership to rapidly develop the region's agricultural potential. SAGCOT's objective is to foster inclusive, commercially successful agribusinesses that will benefit the region's small-scale farmers, and in so doing, improve food security, reduce rural poverty and ensure environmental sustainability.

SAGCOT was initiated at the 2010 World Economic Forum (WEF) Africa summit, with the support of farmers, agribusiness, the Government of Tanzania and the private sector. Development partners have signed a joint financing and cooperation arrangement which ensures that all funding contributes towards the common objective of transforming agriculture in Tanzania's Southern Growth Corridor. The risk-sharing model of a public-private partnership (PPP) approach has been demonstrated to be successful in achieving these goals and SAGCOT marks the first PPP of such a scale in Tanzania's agricultural history.

A "Green Growth" Investment Blueprint has been developed, which will require annual inputs of \$15 million, provided by the Government of Tanzania, development partners and fees paid by its partners. The SAGCOT Greenprint presents a "Green Growth" investment framework for achieving productive, sustainable agricultural development throughout Tanzania's Southern Corridor. Recognising that the ambitious goals of SAGCOT cannot be met without careful attention to the management of land, water, soils, forests, biodiversity, and climate change, the Greenprint proposes a set of "Agriculture Green Growth" (AGG) strategies that will increase yields, increase crop production per unit input, reduce waste and pollution, increase farm profitability, and conserve the natural resource base upon which agriculture depends. If properly implemented over the next 20 years, the Greenprint strategy is expected to increase food production in the Southern Corridor by more than 2.2 million tons per year while reducing

deforestation, water use, and net greenhouse gas emissions compared to a conventional agricultural development trajectory.

The funders believe that these investments will trigger a major increase in agricultural production in the Southern corridor and improve the productivity and incomes of farmers. SAGCOT envisions that USD \$2.1 billion of private investment can be mobilised over a twenty-year period, alongside public sector grants and loans of USD\$1.3 billion. The impact will be a tripling of the area’s agricultural output and income improvement for millions of Tanzanians.

SAGCOT identifies Conservation Agriculture (CA) oriented extension services as the single most important and cost-effective strategy in achieving its goals. It declares that this “knowledge resource” should be “complemented by supportive government policies (such as input subsidies) to encourage CA adoption”. It advises that work be done with agro-dealers on input supply chains to ensure that agro-dealers carry the kind of seeds, herbicides, and equipment needed to implement CA,.

5.3.4.5 FSDT Overview

The FSDT offices in Tanzania note that the agricultural sector in Tanzania continues to face substantial growth limitations, including a lack of financing. Private agricultural finance in Tanzania largely provides credit, insurance and payment facilities to large agricultural producers and processors, and there is little will to extend these services to small-scale farmers.

The FSDT is therefore mandated to facilitate increased access to financial services in the agriculture sector; with the primary need in Tanzania for agricultural finance across the food value chain. This includes monetising of surplus agricultural production, increased investment in productivity improving technologies, and the development of risk management tools specific to agriculture, including weather indexed insurance cover. Once refined, all of these will have value to the region as a whole.

The FSDT draws attention to the results of the Agricultural Finance Markets Scoping Study of 2011, which identified other factors affecting agribusiness in Tanzania, apart from financing. Top of this list was the state of infrastructure (roads, connectivity, water etc), followed by access to well-functioning markets. Access to information was key, in terms of market data, as well as agricultural advice. Networks, most often through farmer's organisations, also had an impact.

The FSDT is implementing various programmes, in partnership with AGRA and others, to address the above factors. These programmes seek to promote the idea of agriculture as a commercial venture deserving investment, and to increase the reach of financial services to remote and rural areas through a blend of retail microfinance and wholesale methodologies.

5.3.4.6 Stakeholder perspectives

Senior officials from the Crop Development and Inputs Units from the Ministry of Agriculture, Food Security and Cooperatives of the United Republic of Tanzania confirmed that maize and rice seed as well as fertiliser input subsidies continue to be supported by the government. They indicated that subsidies should be well managed and reach the intended target group, but acknowledged that neither of these conditions was being fully met at present.

As background, they indicated that from 2003 to 2007, Tanzania subsidised the costs of transport for agricultural products, which resulted in significantly lower costs to farmers. Input subsidies were first introduced in 2008, as a pilot project in four districts, intended to run for only three years. The model was adopted from neighbouring Malawi,

and the aim was twofold: to popularise the use of fertilisers (which was not common then), and to promote food security in the country.

By the end of that year, political pressure had been brought on government to make these universal, despite the absence of either resources or administrative systems and capacity. The scheme has also continued since then, with little political appetite to change anything. This costs around US\$30 million per annum, and is justified not only on the economic returns (which are indeterminate but significant), but also on the broader social context, where food security and rural livelihoods are critical for the development of the country.

Elaborate systems have now been established, comprising “Village Voucher Committees”, who decide on eligibility, and Village Executive Officers, who receive, distribute and administer the vouchers. Maize consumes some 75% of the subsidy, with rice at 25%, but this proportion is growing with initiatives to stimulate rice production using less water.

The criteria for receiving a voucher are stringent:

- Farmers must hold less than 0.4 hectares of land;

- they must be full time farmers;
- they must grow maize or rice;
- they must be able to pay the 50% difference between the price of the input and the voucher value; and
- they must be willing to co-operate with field offices.

As a result, only 1 million out of 6 million farmers receive subsidised inputs. Commercial farmers have been discouraged from growing maize as a result of the export bans, which have been in place periodically. There is no export ban at present (for the second year running), and a good crop is expected in 2016. However this has not changed the situation, and government indicatively states, “smallholders feed the nation”.

An evaluation of the programme by government concludes that the voucher subsidy scheme has ensured food security (in respect of staples – maize and rice) at a household level, and hence at a national level. This was one of the objectives, based on the approach that holds that national food security does not reside in the hands of the National Reserve Agency, but in the hands of farmers who are able to produce.

The impact on production (let alone productivity) is difficult to measure, since a large amount of seed is privately procured, without subsidies. It is acknowledged that increasing overall production may be more a symptom of other factors than input subsidies. Continual seed development programmes overseen by the Ministry will also be a major contributor to this.

In terms of future prospects, there is a sense in government that the system is (at least) not perfect, and that refinements to (as well as significant redesign of) the instruments are needed. However, the political constraints are significant, as the system has become highly institutionalised and any changes will have to be very well sold to both communities and politicians. Notwithstanding these challenges', thinking along new lines is taking place within government in relation to two areas for intervention, namely:

- The abuse and corruption that is “still prevalent”; and
- The economics of the problem, in a time of fiscal constraints

As regards the former, and like many other countries (Nigeria being their model), Tanzania is actively exploring the use of cellphone technologies for allocating vouchers, in collaboration with the Agricultural Council of Tanzania (see below). With over 34 million subscribers, they believe that every farmer has access to a phone, and this is highly

feasible. They acknowledge that this does not deal with the decisions about who is a recipient, but does ensure that once agreed, the money is correctly received. Government also favours the immediate feedback and reporting that becomes possible, with real-time information on take-up. This also allows for re-allocations where required.

The more exciting initiative is formulated around the overall economics of the agricultural sector. The door was opened when evidence emerged that private suppliers in neighbouring Burundi were importing fertilisers through Dar es Salaam, transporting it to the country, and still selling it at prices near to the subsidised price in Tanzania. The difference was that whereas the Burundian products were “bonded” and exempt from duties, Tanzanian fertilisers became the subject of numerous taxes and surcharges, including transport and carbon levies. Given that 90% to 100% of the fertiliser used is imported, including over 60% of the seed requirements, this dramatically affects the overall price.

Although the price of fertilisers has dropped on international markets, subsidy amounts continue to increase, and local prices have not changed, since the landed price is only a part of the final cost to the farmer. Officials estimate that if these surcharges could be scrapped, the price of fertiliser could be reduced by about 35% - almost equivalent to the

value of the subsidy. More importantly, they note, this benefit would be universal (for all farmers and all crops), and not the 1 in 6 currently being assisted.

This is undoubtedly radical thinking, and the Ministry knows there is a long road ahead in selling such an option particularly since other Ministries will likely protect their own income streams. The possibility of new thinking is nevertheless significant in terms of more fundamental changes and a recognition that the economic challenges of developing a vibrant agricultural sector do not lie within the sector itself, but with the enabling landscape of infrastructure and public administration.

The government is well aware that there is now an urgent need to complement production incentives like input subsidies with better post-production agro-processing and marketing systems. The problem now is not producing food, but in getting it to the market and selling it for a fair price. Much of the national maize surplus of 2014/15 did not get to markets, and was either wasted or used for livestock feed. Storage facilities and other infrastructure are critical factors in taking agriculture to the next level. With a perfect market, government contends, there will be no need for any subsidies.

The private sector

The views of the private sector were obtained in meetings with the executive director of the Agricultural Council of Tanzania (ACT), and with the national co-ordinator of the Tanzania Agricultural Partnership (TAP), an associate body of the ACT. The ACT is a private sector “Apex Organisation”, representing role-players across the agricultural value chain. The ACT is the central body, and the TAP was formed through an EU grant to take forward the programmatic work of the ACT.

The ACT indicated that they supported the voucher subsidy scheme, but acknowledged that there has been no formal evaluation of the programme. It seems official statistics in regard to production levels are not available, even to the ACT, signifying a structural problem in terms of their status in the sector. The ACT, however, asserts that the overall production of maize and rice is increasing, although concluding this cannot be attributed only to the subsidy programme. Many farmers have also bought seed on regular markets, which has added to production. The ACT is nevertheless convinced that where the subsidy has taken root, productivity levels have increased as well, due to the increased use of fertilisers and better seed varieties.

Notwithstanding their support, the ACT expressed concerns about the administration of the scheme, and suggests there is “room for improvement”. They indicated that small-scale farmers are not always the ultimate beneficiaries, despite the intentions of the government. Although formally excluded, they allege that large-scale commercial farmers also manage to buy seed and fertiliser under preferential conditions, which results in the perversion of the subsidy, and significant profit margins for these producers. The ACT therefore calls for a much more sophisticated targeting of intended beneficiaries, so that the subsidy achieves its goals of increasing food production and boosting agricultural productivity. Maize production is on average around 1 tonne per hectare and the aim is to raise this to at least 5 tonnes per hectare.

In pursuit of an improved system, the ACT is currently piloting a technology-based option for the payment of subsidies. The programme commenced recently, and is operative in the Kilombero Valley District. Farmers receive an “e-voucher” by sms, which is then read and honoured by seed and fertiliser suppliers. The effect is the same, but the administration is highly simplified, without lengthy paper trails. For monitoring purposes there is immediate electronic reporting on how much has been paid out, to which farmers and by which suppliers. It is expected that by the end of

the summer (May 2016), the project will have its first output data, which will start to correlate the value of inputs with outputs. If successful, the ACT will promote wide-scale use of the model.

Tanzania is also highly conscious of the threat of climate change and weather variability, especially in the drier northern areas. The country has pioneered a Climate Smart Agriculture (CSA) Programme, which serves as a guiding framework for sustainable conservation agriculture initiatives. The ACT has initiated a programme in support of CSA, with training and capacity building for farmers in five districts of the country. After training, farmers are linked with service providers under an “aggregation” model, in which few resources (like tractors) are shared across a number of farmers. Production methods such as no (or minimal) till planting, and the use of animal drawn implements, are used on demonstration plots to show what is possible.

Rice production has been a particular target, given the amount of water required under conventional approaches. However, the intensification of rice production has allowed for a dramatic reduction in water wastage, as well as huge gains in production even during dry years, and farmers are actively seeking involvement in the programme. Comparative lessons can be drawn to India’s experience of irrigation efficiency programmes. As yet, there are no

funds which follow such practices in the form of incentives or subsidies, but it does appear that the productivity gains that result are sufficient to encourage farmers to take up some of these farming methods.

The Southern Agricultural Growth Corridor of Tanzania

SAGCOT is headed by a former senior Ministry official and their investment framework reflects close co-operation with government and similar thinking.

SAGCOT primarily focuses on principles of inclusivity and sustainability, and are implementing a number of climate smart initiatives among smallholder farmers, building on “what has worked”. Interestingly, SAGCOT notes that some conservation methods are counter-intuitive to farmers, and go against traditional practices, so their task is to build a business case for new technologies. In particular, recommendations are for farmers to “save on labour, money, time and resources”.

A research and development project with the Clinton Foundation promotes minimum tillage approaches, the use of organic composts, and liming for weed control, and is already showing evidence of higher yields – from 3 tonnes per ha to over 8 tonnes.

Infrastructure and other landscape challenges are also tackled by SAGCOT around a large (1 000 hectares) commercial maize farm. In 2015, two maize and soya smallholders were linked to the main farm, to benefit from technology transfers and other cooperative processes. In 2016, over 4 000 small-scale farmers have signed up for the partnership, and it is expected that country-wide there should be over 20 000 by 2021.

At the Kilombero Farms, 7 000 partners, with less than 3 hectares each, have increased rain-fed rice productivity from less than 1 tonne per ha to over 5 tonnes. By combining their efforts, the 5000 ha of the main farm have been supplemented by another 21 000 ha under production. SAGCOT also insists that the social capital between the now more equal partners is also critical.

The argument of SAGCOT is that the provision of subsidies is a correct approach, but that these serve a somewhat limited purpose – more social than economic. The real challenge of developing a vibrant, market-driven agricultural sector requires interventions, in other areas.

Farmers

The Tanganyika Farmers' Association Limited (TFA) is closely tied to the history of Tanzania, and the TFA has been one of the major stakeholders and most effective players within the agricultural sector in Tanzania since 1935. Initially established as a division of the Kenya Farmers' Association, the TFA was registered as a separate entity in 1955. TFA has more than 4,800 members representing a cross-section of the Tanzanian farming community, from small landholders to large commercial farmers, from villagers' to government farms, from family-owned farms to co-operative societies.

The TFA has been a major beneficiary of the subsidy voucher scheme through their own sales outlets. However, in 2012, their Annual Report shows a drop in sales of 30%, attributed by the TFA to “our inability to make sizeable sales under the Government sponsored voucher based subsidy scheme for farmers”. The report then notes that the “Government was planning to make a wholesale review of the operation of the scheme but up to this point in time not much has been made in this regard”.

This does suggest that the “patronage” which has been engendered under the subsidy voucher scheme is diminishing, again suggesting a more favourable environment for the introduction of new approaches. However the TFA is not aware of any thinking in regard to these, either within the organisation or in government.

The story of three Tanganyika Farmers Association farmers



Farmer A has a six hectare smallholding, and 8 years ago, on the advice of government, planted coffee trees for the commercial market. He spent his own money to ensure adequate water and fertiliser, and his first crop was a good one. He then invested heavily in the labour costs of hand-picking. However when the beans were ready for sale, the

market had collapsed to an extent where he earned about 10% of what he had invested. His trees still grow, and bear some beans, but he sells locally at poor prices, making little, but investing even less.

Farmer B had 32 hectares – large by Tanzanian standards. He planted maize two years ago, and harvested around 6 tonnes. He was unable to pay the costs of transport to market, so decided to store it himself. 90% of the maize was destroyed by rodents.

Farmer C took a long term view, and planted pine trees in his land. As a firebreak, he planted avocado trees around the pines. On the advice of the local extension officer, he planted Hass avocados which could be marketed at a high end. Limited resources have prevented him from reaching these markets, and he is forced to sell locally. However locals do not want the “small” Hass avocados – they can buy a big one for the same price!

The common thread seems to be that farmers are willing and able to make the transition to commercial farming. All the above are commercial farmers, who grow a crop with the sole aim of selling it, but the scale and level of the markets, and the constraints of transport and other infrastructure, do not allow for growth or expansion. In effect, they are subsistence commercial farmers – surviving, but not growing.

Other perspectives

Discussions with the **South African High Commission** confirmed the intentions of the Tanzanian government to increase investments in agriculture, demonstrated by their offer of agricultural land for investments by South Africa.

Despite these intentions, agricultural investments are hampered by a degree of policy uncertainty, including the export ban on maize, which could be reinstated at any time. Increased investment in sugar production is reportedly also possible, but this is subject to production caps and quotas, which act as a deterrent.

Final insights

Tanzania has recently adopted a Climate Smart Agriculture (CSA) Programme for 2015-2025, co-ordinated at the level of the Vice President's Office. The programme targets improved productivity and incomes, and commits to "investments in productivity", including those that do not "jeopardise soil quality or groundwater resources." It also

seeks to “Build resilience and associated mitigation benefits” of CSA practices, to achieve sustainable development and poverty reduction.

The programme identifies the low use of appropriate inputs (especially by women and smallholder farmers), and proposes increased access to fertilisers, pesticides and seeds, as well as medicines and veterinary services. Importantly, it simultaneously commits to ensuring their “wise application and use”. The programme also identifies the need for marketing and business support services, and indicates that these should be provided by both the public and private sectors. This suggests a highly amenable climate in Tanzania for investments into sustainable agriculture.

However, this must be weighed against the fact that Tanzanian farmers have been mostly receiving disincentives for maize production. An analysis of incentives and disincentives for maize in the United Republic of Tanzania, undertaken by the Monitoring African Food and Agricultural Policies Project (MAFAP) suggests this has been due to the sale of subsidised maize by the National Food Reserve Authority, and excessive marketing costs along the value chain.

The MAFAP further suggests that the government is more interested in keeping maize prices low than in assuring a more remunerative price for farmers. During the years when The United Republic of Tanzania could export maize, the erratic trade policy (with frequent export bans) prevented farmers from getting better prices in regional markets. Moreover, lack of storage capacity makes The United Republic of Tanzania export maize at low prices in good years and then face high maize domestic prices in lean years.⁴

5.3.5 Zimbabwe

Zimbabwe's agricultural sector is the subject of much debate in lieu of the country's political and macroeconomic challenges. The general trend in Zimbabwe is a deterioration of the agricultural sector, reaching a negative growth rate of -13.3% in 2008 (Nyamazana, 2013). There are significant impacts on national food security since 80% of smallholder farmers comprise Zimbabwe's population (Ibid).

February 2016 also saw Zimbabwe declaring a state of emergency due to the country's drought as a result of climate

⁴ Barreiro-Hurle, J. 2012. Analysis of incentives and disincentives for maize in the United Republic of Tanzania. Technical notes series, MAFAP, FAO, Rome.

change. The Zimbabwean presidency is appealing to local businesses and charities for approximately US\$1.5bn to mitigate against starvation (The Guardian, 2016). In addition to supplementary basic food stuff, future agricultural investment will need to focus on infrastructure that will sustain the agricultural sector in the long-term. Climate smart support for small-scale schemes, divesting from the traditional large-scale approach, small grains and community resilience are likely necessary (Ndlovo, 2010). Interestingly, community assistance and drought relief packages, which may also include local early warning systems and insurance support, may support Zimbabwe's agricultural sector that has seen major shifts in light of political land reform projects.

5.3.5.1 Land reform

Zimbabwe's experience of land reform is a fundamental layer in understanding the country's agricultural context and assistance.

During the period of import substitution and heavy sanctions, Zimbabwe's agricultural sector grew rapidly and diversified away from the main export crop, tobacco (Anderson et al, 2007). Land reform from 1980 proceeded gradually, until the 2000 constitutional referendum of Fast Track Land Reform Programme (FTLRP).

The bimodal design of agrarian reform in Zimbabwe promotes small-scale family farms (A1) and medium- and large-scale famers (A2) (Moyo, 2011: 497). Through the FTLRP, land was redistributed from the large, typically commercial A2 farms to small A1 producers, which currently constitute approximately 70% of the country's agricultural land (Moyo, 2011: 499). The resulting declines in the commercial agricultural sector, shrinking from 32 to 8% between 2000 and 2002, led to rapid declines in Zimbabwe's overall agricultural base (Anderson, 2007).

The intention of the 2000 FTLRP was to reallocate Zimbabwe's land more equitably. With reductions in the commercial farms, a new breed of small-scale farmers emerged to alter the composition of the agricultural sector. From approximately 4000 commercial farmers, Zimbabwe's agricultural sector currently comprises approximately 460 000 A1 smallholder and communal farmers (Nyamazana, 2016)

In the attempt to promote A1 farms, the government of Zimbabwe initially provided direct support to farmers through subsidies and provisions of inputs prior to production (Nyamazana, 2016). An important feature of Zimbabwe's early assistance strategy was the use of Agricultural Marketing Boards (AMB) that manage the pricing, marketing and trade of agricultural production. For instance, until 2009, maize and wheat and to some extent, other commodities were officially only traded through the Grain Marketing Board (GMB).

Easy agricultural finance during the FTLRP: The Grain Marketing Board

The GMB was originally designed to maintain a strategic reserve of major grains, maize and wheat, through restricting trade and controlling a uniform price. No movement of major grains was initially allowed, with the exception of small quantities of farmer-to-farmer sales. In 2009, the GMB was liberalized from one of monopoly purchasing, importing and selling of maize and several other grains to that of buyer of last resort to help maintain floor prices for maize and protect domestic producers (Kapuya et al in Anseeuw et al, 2012)

During the early stages of Zimbabwe's FTLRP, agricultural assistance constituted between 10% and 15% of the state budget. However, political and macroeconomic factors undermined government's capacity to subsidise agriculture

through state revenues (Nyamazana, 2016). Specifically, macroeconomic imbalances resulted in a monthly inflation of 79.6 billion per cent, and a drop in GDP of 40% (Hanke & Biti in Nyamazana, 2013). In addition, the government of Zimbabwe's high budget deficits and external payment arrears reduced state agricultural support (Hanke & Biti in Nyamazana, 2013).

5.3.5.2 Filling the state void

With a suffering state reserve, the global development and donor committee emerged to provide *de facto* agricultural assistance. A major focus of donor support in Zimbabwe is the household level, through provision of inputs, fertiliser, seed and chemicals to subsistence farmers (Nyamazana, 2016).

To some extent, the influx of donor funds into Zimbabwe fills the void of European capital during the post-2000 sanctions. For instance, donor funding during 2009-2010 was in excess of 50-100 million Euros (Nyamazana, 2016). Much of this foreign aid is geared to food security outcomes, with some support for agricultural unions (Nyamazana, 2016).

5.3.5.3 The Zimbabwean Agricultural Development Trust (ZADT)

The ZADT is a product of various international donors resuming a role in Zimbabwe. ZADT farmer support is not direct, but rather focuses on supporting services in the agricultural value chain such as input suppliers, packaging, transporters, chemicals, agronomy and crop protection.

Since 2012, the ZADT has disbursed US\$19.8 million to finance working capital and expenditure requirements to the agricultural value chain (ZADT, 2015). Significantly, the value chain links smallholder farms (around 32 000) to other agricultural stakeholders, including businesses, banks and technical and bank intermediaries (ZADT, 2015). ZADT works through a Credit for Agricultural Trade and Expansion (CREATE) fund from which any eligible farmer can borrow at a concessionary rate of 4% to 5% versus the market rate of 10%. CREATE facilitates capital raising and lending to Zimbabwean agricultural value chain actors through three channels.

The CREATE fund

The routing of CREATE's capital is through selected financial institutions that maintain business relations with

smallholder farmers. Allegeable borrowers can borrow funds based on input (production and distribution), output/marketing (processes such as harvesting and marketing) and storage/processing (safekeeping and processing of produce).

Source: ZADT, 2015

While any allegeable borrowers can approach banks to apply for funding from ZADT, the challenge in Zimbabwe is access to liquidity (Nyamazana, 2016). The deficit of capital in Zimbabwe is currently an outstanding \$50 million (Nyamazana, 2016).

5.3.5.4 Diaspora support

Some liquidity alleviation is provided by Zimbabwe's diaspora, through individual investments and remittances from South Africa, North America, the United Kingdom and Europe. In light of internal capital deficits, Zimbabwean diaspora maintain a significant flow of currency to support their farmer connections. Estimates for 2013 reveal Zimbabweans living abroad remitted approximately US\$1.6 billion (Nyambabvu, 2013). While cash remittances do exist, there is a preference to receive non-cash remittances, significantly for basic foodstuff such as maize-meal, sugar, salt and cooking oil as well as agricultural inputs and building material (Maphosa, 2005).

The different forms of non-cash remittances to Zimbabwe indicate an important trend of cross-and trans-border “in-kind” support for the agriculture sector. Maphosa notes that the preference for such support may be due to the non-existence of banking facilities, highlighting both the specificity and informality of agricultural support, e.g. the delivery of livestock or machinery through personal channels, particularly in rural areas (2005).

5.3.5.5 E-vouchers

Due to challenges facing Zimbabwe’s banking sector, an emerging trend is the use of E-vouchers as an agricultural and credit facilitation tool. In Zimbabwe, E-vouchers are essentially a voucher card mechanism to support classical input subsidies and extension services (FAO, 2012). The E-voucher scheme is run by the Government of Zimbabwe, through the Ministry of Agriculture, Mechanization and Irrigation Development (MoAMID) in partnership with the FAO, USAID and EU (FAO, 2012).

While the E-voucher scheme is still a pilot programme, reviews indicate that for farmers, e-vouchers reduce incidences of corruption, while for retailers, there are significant improvements in linking retailers, farmers and

wholesalers (Mazvimavi et al, 2013). A major opportunity for the E-voucher scheme in Zimbabwe is to further coordinate with the local mobile cellular network, ECONET Zimbabwe, particularly in rural areas with poor network coverage (Ibid).

The lack of collateral security among agro-dealers is the major challenge to the E-voucher scheme as there is reluctance to supply production in bulk and a tendency of price hikes for agricultural inputs and tools (IRIN, 2012). A related issue is the need for wholesaler insurance to ensure wholesalers are assured of compensation in the event that agro-inputs are not purchased (Mazvimavi et al, 2013). Risk-bearing and credit facilities for both retailers to stock and trade agricultural inputs and farmers to access credit are also investment opportunities (Ibid).

5.3.5.6 Contract farming

Contract farming commits growers to produce a certain commodity at a certain time for an agreed price, and, in return, the firm undertakes to market the commodity and provide extension services or facilities to satisfy production requirements (Woodend, 2003). In Zimbabwe, major agro-processing firms contract farmers directly, usually the larger commercial farmers in addition to the new resettlement farmers (Nyamazana, 2016).

The interest of contract farmers is commercial or private revenue, versus broader macroeconomic development, and in Zimbabwe, is typically for the tobacco, cotton and dairy sectors (Nyamazana, 2016). Contract farming is significant in Zimbabwe because of major investments from China in supporting the tobacco sector. Support from China for Zimbabwe's tobacco is largely for export purposes, as China is the largest importer, making large investments in both production and processing (Mukwerezada, 2008).

The heavy international assistance to Zimbabwe from China is therefore largely beneficial in commercial terms for the tobacco sector, with some support for cotton. Both cotton and tobacco are deemed favourable investment sectors because they are not consumed at a household level and marketing is predetermined through contract farming (Nyamazana, 2016).

Chinese support to Zimbabwe

Chinese companies funding inputs and capital for Zimbabwean cotton and tobacco recover money during marketing. Chinese companies comply with the same regulations as local companies: providing each contracted farmer with

adequate inputs for the contracted area; providing proof of access to offshore funds for purchasing the crop; and obligated to sell a specified quantity of the total crop to the local industry. Chinese contracting companies buying local tobacco tend to offer the local industry higher prices in comparison to other destinations. This has had the general effect of raising the average price of tobacco, benefitting Zimbabwe's commercial market significantly. (Source: Mukwereza, 2013).

However, there are important political subtleties that underlie Chinese support to Zimbabwe. Zimbabwe's 'Look East Policy', through which China contributes significant loans and other forms of investment aid, is largely a response to the flight of Western capital (Mukwereza, 2013). In 2005, shortly after many Western investors withdrew from Zimbabwe, Foreign Direct Investment (FDI) from China into Zimbabwe stood at US\$41.6 million and in 2006, there were capital injections of US\$200 million into local agricultural, manufacturing and mining sectors (UNCTAD, 2006, Besada, 2008).

The role of China in financing agricultural inputs and commodity exports in tobacco and cotton is significant in terms of the comparable insights for food-based agriculture. Investment from China, and emerging interest from Brazil, is anchored on private commercial arrangements together with aid protocols signed at the government level

(Mukwereza, 2013). The gradual commercialisation that may emerge through contracts between private sector counterparts in other countries, highlights the potential of agricultural support on similar cooperative commercial-public bases.

5.3.5.7 Credit schemes

Findings for Zimbabwe indicate the propensities of farmers to access basic inputs and expand commercially result from intersecting structural and liquidity changes to the agricultural sector. For instance, Zimbabwe's new sector of smaller and communal farmers, who generally depend on rain-fed farming, also have the least access to already limited agriculture finance (Moyo, 2011: 520).

While direct state subsidies for agricultural inputs have largely evaporated in Zimbabwe due to budget deficits, credit schemes are emerging as a form of market support for the agricultural sector. In Zimbabwe, agricultural credit schemes differ by support paid on delivery, delivery of produce and post-harvest payments, and are used to subsidise inputs, generally livestock and maize due to the livelihood role thereof (Nyamazana, 2016).

The major players of agricultural credit support in Zimbabwe are Micro King Finance, a subsidiary of Zimbabwe's Kingdom Bank, and USAID.

Donor credit support in Zimbabwe: A Case Study

Micro King Finance, a subsidiary of Zimbabwe's Kingdom Bank, manages a USAID-funded credit guarantee scheme that provides subsidised credit to entrepreneurs to create markets for smallholder farmers. The loans are subsidised at a rate of 12%, while the market rate is 25% per annum. For an average smallholder farmer, Micro King allows loans ranging from \$2000 to \$5000, payable in six months, in order to finance agricultural inputs. The scheme works in part because of contract farming, where banks typically function as an administrator of credit.

5.3.5.8 State subsidies and market forces

In response to agricultural declines following the FTLRP, the government of Zimbabwe provided subsidies to farmers through quasi-fiscal payments that amounted to 19% of GDP in 2005 (Andersson 2007: 208). The state budget deficit reduced official agricultural subsidies to almost near zero, while macroeconomic distortions mean that any available subsidies, largely fuel and credit support, are often used for arbitrage purposes rather than agricultural production (Ibid).

Any remaining official / government provided subsidies are targeted and exist in two forms:

- Targeted subsidies for vulnerable households in the form of free inputs or input vouchers from NGOs and the donor community, including the church; and
- targeted subsidies in the form of free inputs from the “Presidential Input Scheme”, where the selection criteria used in the administration of these subsidies is not clearly defined but it is mainly for political mileage.

Yet in terms of policy there are no deliberate efforts to support agriculture input purchase at national level.

Agricultural support is therefore largely market-determined, with a major role-player being the Agriculture Marketing

Authority (AMA) that collects and distributes price information to the greater public. While initially introduced during the liberalisation era prior to the FTLRP, marketing boards in Zimbabwe still have a role as a buyer of last resort, particularly since independent traders are unlikely to go to remote areas (Nyamazana, 2016).

From a developmental perspective, a number of recent developments indicate Zimbabwe's marketing boards are beginning to assume new roles. For instance, while COTCO replaced the Cotton Marketing Board (CMB), the Zimbabwean government has recently bought back CMB. Although this may indicate a reversion to the original system – where seed cotton farmers are required to sell through official chambers and a stop order system – the idea is for CMB to trade alongside other independent boards (Nyamazana, 2016).

Independent buyers are emerging in Zimbabwe's other major agricultural sectors, to indicate some future competition for state monopolies. Independent buyers are playing alongside the previous monopoly, the Grain Marketing Board (GMB) that buys grain and sells to millers. In the meat sector, independent meat trades are surfacing in addition to the Cold Storage Company, the Zimbabwean parastatal for marketing and meat and related products (Nyamazana, 2016).

In light of these new trends, it is significant that the Ministry of Finance in Zimbabwe indicates some recovery is occurring in the agricultural sector. Table 1 shows that from the negative growth rate in 2008, the agricultural sector may be recovering, although checks are necessary to verify such data and the dimensions productivity.

Table 6: Annual Real Gross Domestic Product (RGDP) by Sector

RGDP Sector (%)	2008	2009	2010	2011	2012	Average*
Agriculture	-13.3	14.9	33.9	7.4	11.6	17

(Source: Source: Central Statistics Office, National Budget Statement Ministry of Finance (2010, 2012)
*Average growth rates between 2009 and 2012)

The Zimbabwean Ministry of Finance, in partnership with agricultural marketing boards, is the primary body that compiles agricultural data in relation to economic growth. While the agencies in the other SADC countries under review face somewhat different data reporting environments, including the format and standard thereof, there are insights for comparative agricultural performance over time.

Zambia's Central Statistic Office (CSO) reports a declining contribution from agriculture to overall GDP growth from

16% in 2001 to 12.6% in 2012 (See inserted figure below). Stagnant agriculture may be widening inequality and deepening food insecurity in a primarily agrarian economy (Tembo & Sitko, 2013). As Tembo et al reflect, the historically strong support for classic agricultural input subsidies in Zambia alone is insufficient to boost agricultural productivity across the value chain and contribute to the GDP.

Figure 6. Contribution of Agricultural Sector to GDP, 2012

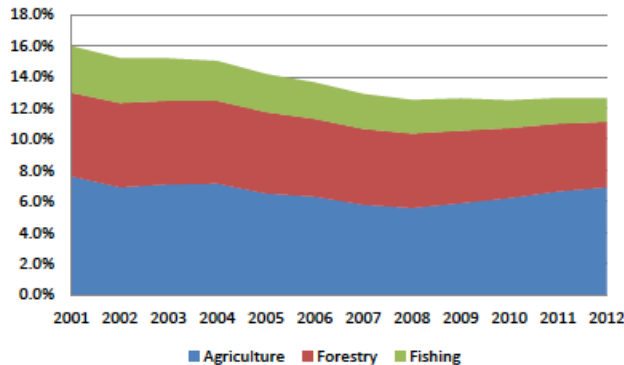


table
of

Comparable data from the National Statistics Office in Malawi are only available until 2010 (see below). The trends indicate that since the drought 2005, agriculture’s contribution to overall GDP

Source: Central Statistical Office data 2012.

growth is on an upward trend. While this is positive, the benefit is largely in terms of food security due to the overwhelming focus on fertiliser inputs in Malawi. Provision of food is critical yet different from integrated economic strategies, such as research and extension series, that may emanate from a landscape approach to agricultural development (Kumwenda, n.d)

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
Agriculture overall		3.9	2.8	-7.8	-4	11.2	4.2	13.1	2.0
<i>01 Crop and animal production, hunting and related service activities</i>		3.9	2.8	-8.8	1.0	12.6	3.4	13.4	1.7
<i>02 Forestry and logging</i>		1.6	5.6	-15.9	-12.1	1.0	12.6	6.5	6.5
<i>03 Fishing and aquaculture</i>		11.5	-1.4	46.3	-17.0	-15.8	19.6	10.8	6.4

2011 to 3.4% (see table below).

Table 7 GDP Growth rates in per cent from previous year 2002-2010 (NSO, 2013)

Finally, in Tanzania, it is good to see more recent reporting by the National Bureau of Statistics (NBS). The NBS group's GDP contribution for agriculture with forestry and fishing, as an overall category, which has declined from an all-time high of 17% growth for

Table 8 Annual growth rates of GDP by Agriculture, Forestry and Fishing

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Agriculture, Forestry and Fishing	2.4	2.4	7.5	5.1	2.7	17	3.2	3.2	3.4
<i>Crops</i>	-1.4	-1.5	7.8	5.5	3.7	4.8	4.3	3.5	4.0
<i>Livestock</i>	7.4	7.8	8.1	5.3	1.4	1.6	1.8	2.0	2.2
<i>Forestry</i>	7.4	6.0	3.8	5.1	3.4	3.3	3.5	4.7	5.1
<i>Fishing</i>	2.8	0.9	7.2	0.5	0.9	2.6	2.9	5.5	2.0

Disaggregating the above data shows that most agricultural or agribusiness sectors have experienced slower growth, although 2014 appears to be indicating an uptick. The effects of the 2008 financial crises were particularly acute for

Tanzania's agricultural sector (USAID, 2016), although a 2014 report by the UNDP in partnership with the government suggests there may be a wider structural shift underway given increasingly positive GDP contributions by industrial and service sectors (UNDP & URT, 2015). The issue in Tanzania is that agriculture still employs approximately 70% of the population indicating that despite economic successes in other sectors, agriculture is crucial to counter jobless growth (UNDP & URT, 2015: xv).

5.3.5.9 Final insights

A number of conclusions emerge that emphasize the importance of Zimbabwe's historic and changing agricultural sector. Formally large farms (A2) may benefit from existing agricultural infrastructure and inputs, particularly for contract farming arrangements in tobacco and cotton. However, it is clear that due to Zimbabwe's FTLRP, smaller A1 farms and smaller producers comprise a growing share of the Zimbabwean market. From a historical perspective, this implies that state support to A1 and A2 beneficiaries may actually be proportional (Moyo, 2011: 497).

The retreat of capital has, however, greatly contributed to the Zimbabwean government's incapacity to support agriculture. Indeed, private investment into assets such as irrigation facilities, electrification, farm infrastructure and machinery has remained low compared to before the FTLRP. Yet there are indications that investment into Zimbabwe's agricultural sector is on the rise. While China assumes a major role for tobacco, there are positive shifts in international support for food tradeables. Zimbabwe is also a CAADP signatory, committing to the 10% of revenue to agriculture in various policy statements. Policy visions include enabling "the necessary fiscal and non-fiscal measures to support the country's agricultural sector", and "reducing the cost of fertilisers and making irrigation affordable" (Minister Chinamasa, 2013).

The major challenge and opportunity for Zimbabwe remains a gap in agricultural finance and insurance. In particular, there is a demand for affordable and flexible solutions, such as loan and savings products to cover the purchase of seasonal inputs (fertiliser, seeds, labour) and fixed assets (tractors, implements and irrigation equipment) (FinMark, 2011). Zimbabwean quasi-fiscal financing is a last, and perhaps least attractive remedy, subjected to tight foreign exchange controls, as well as marketing and price controls.

There is room to expand the current funding space through credit facilitation tools and value chains, particularly since donor and independent market players are beginning to resume a role in partnerships with progressive state visions. An urgent issue is how to capitalise on a seemingly positive turnaround in the agricultural sector, whilst adapting to climate conditions that threaten major crops and food security. If agricultural financial assistance can feature as a drought adaptation strategy by stipulating conservation agriculture or insuring against disaster, there may be new value chains to drive both sector growth and sustain food security.

CHAPTER 6: FINDINGS

Two major findings can be drawn from the data collected in the study. One is that should countries decide to increase investments in agriculture, there are significant opportunities for doing so. There are spaces at every level of the value chain for interventions and support, some of which are necessarily state-driven, while others are of more interest to the private sector, or to the international donor community. These opportunities are shown below:

Table 9: Investment opportunities for SADC countries

	Production	Productivity	Market access	New Markets	Climate change
Tool	Input subsidies	Input subsidies Farming approaches	Agricultural information Financial services	Agricultural information Interest rate and tax-based incentives	Donor funding
Policy	Market and budgetary assistance	R&D	Credit / insurance strategies	Finance strategies	Investment diversification

			Agro-marketing PPP and local partnerships	Agro-marketing PPP and local partnerships	
What to finance	<i>Infrastructure</i>	<i>Extension services</i>	<i>Financial services</i>	<i>Biofuel crops</i>	<i>Infrastructure and financial services</i>
			<i>Technology: mobile options</i>	<i>Regional integration</i>	<i>Conservation Agriculture and Climate Smart Agriculture</i>

The second major conclusion is that investments in agriculture need to be well designed (“fit-for-purpose”), and effectively implemented. This study shows that there are at least three dimensions to making this work:

- The use of “smart” subsidies;
- incentivising sustainability through climate-smart or conservation approaches’; and
- making use of blended approaches.

Each of these dimensions is described below.

6.1 Smart subsidies

Smart subsidies target policy objectives in relation to specific farmers, products, or regions. Smart subsidies are ways of using market related mechanisms to affect prices or the practices of producers and consumers in particular ways. Although smart subsidies require an initial market distortion to achieve a necessary goal, the approach must be market-based and have an exit strategy. In addition, subsidies should seek to crowd-in the private sector and the donor community, and encourage investment rather than displacing it.

Farmer organisations pleaded that subsidies should not be subjected to capture by political economies, where decisions are bound by interests other than those of agriculture. There were suggestions that some subsidies had benefitted elites rather than the poorest – if not by design than as an unintended consequence.

Smart subsidies – transparent and efficient - should avoid this pitfall. Takeshima (2012) identifies a number of “Instruments to Target Agricultural Subsidies to Desired Beneficiaries”. He notes important issues which need to be considered, and some proposals to deal with these. They include:

Efficiency vs. equity

Takeshima notes that “Balancing efficiency in the provision of the subsidy with equity in the distribution of the benefits farmers as a whole receive from the subsidy is generally difficult. Trying to achieve both may often end up in achieving neither efficiency nor equity. It is therefore advisable to focus primarily on one of these two principal goals.”

Geographic targeting

While one of the less costly means of targeting subsidies, effectiveness is generally low using geographical targeting with high levels both of under-coverage and leakage.

Community based targeting

This targeting method has been used repeatedly across sub-Saharan Africa, but has been shown to be quite ineffective due to political favouritism or misunderstanding by community leaders of the criteria through which they are to identify beneficiaries to receive the subsidised inputs.

Takeshima proposes the use of Vouchers, for security reasons, or the use of a Savings Passbook, which enables farmers to bank the output in the first cropping season in order to receive a subsidy on inputs for the next season. He also favours Demonstration Packs, which he says are best used when a combination of inputs is required for improved production practice. He notes that delivering small quantities can help reduce leakage to unintended beneficiaries. Finally, Takeshima notes that timing is critical to the success of any subsidy program, and that a number of schemes fail in this regard.

It has been suggested by farmer organisations that (re)consideration also be given to the formation of Marketing and/or Control Boards to advise on the use of agricultural investments, including subsidies, and to oversee their implementation. Such structures could best facilitate the combining of state and donor support streams, and maximise the benefits of each.

6.2 Conservation agriculture and climate-smart approaches

Increases in food and fertiliser prices have underlined the vulnerability of poor urban and rural households in most SADC countries, and this is projected to increase dramatically under current conditions. This has renewed a public focus on the need to increase staple food crop productivity, and various models and approaches have been used. The

classical approach has been that of fertiliser and seed subsidies, which provide (either through state schemes or market based approaches), low cost fertilisers and seeds for farmers.

Globally, it is recognised that subsidies can also act as drivers for a sustainability transition in agriculture. Promotion of climate resilience through “Climate Smart Agriculture”, and agroecology in general, are agreed on as mutually beneficial principles for the envisioned transition. Support for this should include public subsidies for actions that promote productivity and overall production, and which are sustainable, such as the World Food Programme (WFP) new scheme “FoodSECuRE”, a fund financially and programmatically supporting community action for climate resilience (WFP, 2016). Support for research and development is also available.

It should be noted at present that much of the support for sustainability-specific programmes in the SADC countries under review appears to be donor-funded rather than state subsidised. This is not a bad sign - state policies tend to follow those of agencies, and current programmes can test various models and demonstrate good practice in advance of government adoption, although substantial, donor supported programmes can only hope to serve as catalysts for systemic change.

6.3 Blended approaches

The evidence suggests that a blended approach to agricultural support is most desirable, including both upstream and downstream support. The blending can relate to the purposes of the support, as well as to the source of funds, which may include state, donor and private sector investments. Years of support to agriculture without demonstrable impacts have shown that country circumstances, as well as dynamic weather and market conditions, require a range of flexible instruments. These must be predictable and informed by a clear set of purposes, but they also need to be responsive to change.

CHAPTER 7: RECOMMENDATIONS

The following recommendations are made to FinMark Trust:

7.1 Recommendation 1

That FinMark Trust prepares and submits a policy paper to SADC on agricultural investments, which is currently under preparation in terms of the Regional Agricultural Policy. This policy paper may require some “disruptive thinking” in order to challenge some of the highly institutionalised structures and processes around the payment of subsidies.

7.2 Recommendation 2

That FinMark Trust should express the following views in such a paper:

- That agricultural subsidies are a necessary and valuable instrument for countries to use, especially at early stages of development, in accordance with world trade agreements;
- That subsidies should be smart in nature, including conservation oriented or climate-smart subsidies;
- That a blended approach to subsidies be promoted, using a variety of instruments that are fit-for-purpose in context, and drawing on the various opportunities that are outlined below;
- That the subsidies should be subjected to stringent monitoring and evaluation, in order to determine the impact.

7.3 Recommendation 3

That FinMark Trust uses the policy submission to SADC to promote a consideration of the use of output subsidies by countries. By their nature these are measurable, and would have the effect of promoting agricultural productivity. Because of the need for these to be processed through formal marketing systems, these would also have the consequence of developing greater market efficiencies.

Preliminary research should be undertaken to consider the viability of such a mechanism, including data and monitoring requirements. The potential impact on agricultural productivity and efficiencies is also a key consideration in light of the challenges with subsidy management and agricultural monitoring arising from informal markets and politics.

7.4 Recommendation 4

The research has uncovered a number of areas that can be considered for possible programmatic interventions by FinMark Trust. These include public and private initiatives within the two broad themes that are emerging – namely increased market access and increased production efficiencies in agriculture.

It is therefore recommended that FinMark Trust consider support for the development, refinement, and/or promotion of the following imperatives:

- Diverse and relevant financial instruments for farmers and producers, especially lower cost risk insurance;
- Development of market enhancement strategies and programmes;
- Upstream support for production related infrastructure development; and

- Support for the application of new technologies in agricultural finance.

7.4.1 Financial instruments and insurance

The intersection of food security concerns with uneven market access is a recurring global policy theme. The overwhelming finding from African peer-reviewed processes is that the majority of small-scale agricultural producers lack access to financial services or experience market restrictions. This requires shifts from an unsupportive policy environment to one that facilitates agricultural markets⁵, and markets in general. In Zambia, the ratio of private credit to GDP is 20 per cent, compared to 31 per cent in lower to middle income countries. The Zambian government dominates state-owned enterprises, backed by government guarantees and profit/rent-seeking markets, while commercial banks have a weak presence. Similarly, more than half of Tanzanians have no access to financial institutions.

Market issues are often geographically skewed, such as in Nigeria where rural banking coverage is less than half of urban coverage, placing disproportionate burdens on smallholder farmers. Due to such issues, financial services are often provided informally or through microfinance companies, rotating loans and loan groups. A scan of market support for agricultural subsidies across the continent indicates that there is a need for further research to understand how informal support occurs, and the size of this market, as this could be a major factor determining the policy space in developing countries.

Provision and access to insurance cover is also a critical factor determining agricultural support. Access to formal insurance is often limited, especially where it is most needed. In Tanzania, only 1% of farmers purchase agricultural insurance (APR, 122-122: 2014). Global dialogues are understandably calling for subsidies that lower the costs of finance and insurance, and these have been amplified by the onset of climate variability and climate change.

The Africa Progress Report 2014 highlights the role of inclusive finance in development. Without access to financial services, it argues that poor people and small enterprises have to rely on their own limited resources to invest in entrepreneurial activity, or to insure themselves against risk. More importantly, uninsured risk is part of the poverty trap in which millions of smallholder farmers are caught. For instance, while credit facilitation and capital lending is a

major challenge for the Zimbabwean agricultural sector, increased capacity for loans is an equally important objective. The CREATE fund in Zimbabwe is an example of supporting capital in the entire agricultural value chain that is also broadening the basis for lending based on collateral.

Overcoming the finance trap therefore rests on changes to financial regulation and investing in the new opportunities created through technological innovation, such as mobile or electronic banking. Supporting financial services through technology, capital lending and collateral terms for the entire value chain are therefore crucial interventions to be supported by FinMark Trust.

The “Making Access to Financial Services Possible” (MAP) programme is a multi-country initiative to support financial inclusion through a process of evidence-based analysis feeding into a financial inclusion roadmap jointly implemented by a range of local stakeholders. It was initiated in a partnership between Cenfri, the United Nations Capital Development Fund (UNCDF) and the FinMark Trust. In each country, MAP brings together a broad range of stakeholders from within government, the private sector and the donor community to create a set of practical actions aimed at extending financial inclusion tailored to that country.

Thus far, MAP has been rolled out under a pilot programme in Botswana, Côte d'Ivoire, Ethiopia, Democratic Republic of Congo, Laos, Lesotho, Malawi, Mozambique, Myanmar, Nepal, Swaziland, Thailand and Zimbabwe. The current initiative to encourage providers of financial services to share credit information in order to deliver products and services to those segments of the population that are currently under-served is to be commended, and the MAP programme should be intensified in the SADC region, with the support of countries.

FinMark Trust would do well to build on this expertise and experience, including the collaborative approach, to develop and promote appropriate financial instruments to meet the needs of farmers and the agro-industry.

7.4.2 Market enhancement

It is clear that a significant cost driver for the agricultural value chain is the absence of efficient markets. Strategies should therefore be pursued to promote the establishment and viability of local markets. Informal markets are opportunities and there is a need to more formally integrate these, in terms of space and operation, record-keeping, and systems for co-ordination, to sustain and grow these markets.

For FinMark Trust, pilot programmes could focus on a small number of informal markets in selected countries, which are transformed into formal markets that leapfrog into new value chains – agri-businesses, extension services and sustainable operations that limit waste and reduce costs to farmers and consumers.

Policy approaches could also be pursued with countries: The Social Development Agency in the USA provides food vouchers to the poor, which are redeemable only at local farmer’s markets. These have had the effect of ensuring demand and incomes for farmers, without the substantial costs of marketing through retailers. Those countries which have social assistance or feeding schemes (like South Africa) should consider approaches which promote local food production and suppliers, which will serve to stimulate and formalise local markets.

7.4.3 Support for infrastructure development

Research shows that the disincentives arising from poor and inefficient infrastructure costs the agricultural sector as much as any support programmes. Attending to these would be a substantial financial benefit and FinMark Trust could facilitate to farmers. Without reliable and affordable infrastructure, farmers lack many of the key agricultural inputs such as water (via irrigation), power (via electricity network) or transport (via roads / rail), and this has consequences for the large rural populations of most SADC countries.

Country and regional policies call for increased investments and lower costs of infrastructure development for agricultural support, and the evidence suggests increasingly higher subsidies and policy incentives for this. There have, however, recently been indications that the poor economic conditions have put a hold on many projects, which will need to be monitored.

Our research proposes expanding this analysis of infrastructure through a CSA lens. While the financing of infrastructure is a recurring subsidy goal linked to agriculture, this is often directed to systems that erode climate resilience. For instance, fertilizer subsidy schemes (Zambia, Malawi) are linked to high input infrastructure such as large-scale irrigation systems that promote mono-cropping, degrade the soil and intensify land use. Consideration should therefore be given to sustainable types of infrastructure (either supported by existing subsidies or that are envisioned as new infrastructure investments), such as sustainable irrigation systems or integrated water management models.

Any support needs to be assessed in terms of how it might sustain key agricultural inputs. Obama's Power Africa and various investments by the African Development Bank contain worthwhile analyses of this.

For FinMark Trust, a role could be played in encouraging integrated spatial planning, that takes account of local communities rather than one-dimensional planning, for example, exclusively international transport routes or urban development. Transport networks need to serve the agriculture industry; water infrastructure must be built for food production, and not just for consumption. Transparent, consultative planning processes around infrastructure developments will contribute enormously to changing the lives of rural farmers, and the economies of those countries which depend on agriculture. FinMark Trust is strongly recommended to invest in spatial planning data collection that integrates community knowledge with the data, modelling and analysis that will facilitate a landscape approach to agricultural development in the entire value chain.

7.4.4 Application of new technologies

Innovations in applied technology feature increasingly as forms of agriculture support across the globe. With its growing mobile technology sector, Africa is well positioned to take advantage of these, and to leapfrog some of the regular stages of agricultural development. Technological innovations often combine Research and Development (R&D) support and investments in improved access to markets, insurance support and agricultural inputs. (APR, 116, 2014). Examples of such support are provided in the section of SADC countries, below, and **FinMark Trust is urged**

to either lend support to these (to avoid duplication of design and effort), or to replicate these in areas which are not covered.

Tanzania is experimenting with a number of technology applications that provide online and offline agricultural information to farmers and communities. Due to challenges faced by farmers in gaining access to information about agricultural markets, technology support appears to focus on the agro-marketing and trade industry. Mobile technology is a form of agricultural support as a communication and information sharing platform, correlating to increased access to mobile phones. Mobile phone services for agriculture include applications that communicate information about input and prices, industry and trade updates. Findings, however, show these services are often in isolated sectors, likely because the agricultural market in Tanzania is dominated by a few major corporations. There is substantial research to support a FinMark endeavour into technological assistance for agriculture, such as the World Bank report by Qieng et al (2011) *Mobile Applications for Agriculture and Rural Development* and Furuholt & Matotay's (2011) report on mobile technology.

Mobile technology has been identified as a key form of agricultural support, and is being used (albeit often in limited fashion) in most SADC countries. South Africa has a robust, internet data system, which is subscriber based, and used by provincial agriculture departments in providing extension services.

The E-voucher system in **Zimbabwe** assists small-scale farmers to access agricultural inputs through mobile money vouchers. Initiated as a pilot project, E-vouchers provide support to the summer cropping programme through the Zimbabwean Ministry of Agriculture in conjunction with the Food and Agriculture Organization of the United Nations.⁶ The pilot includes over 4 000 farming households, with a plan to scale up to 18 000 households. Farmers can redeem E-vouchers at competing rural agro-dealers for seeds, fertilisers and lime, agro-chemicals, implements and spare parts for farming equipment.⁷

Like many other SADC countries, there are also a number of private sector partners in Zimbabwe, such as the Esoko Corporation, which focuses on electronic markets for smallholder farmers. Partnerships between private sector actors and governments indicate that collaborative engagement is feasible and fruitful. The Department of Agricultural

⁶ FAO, 2012

⁷ FAO report on E-Vouchers in Zimbabwe as a major source of data (2012)

Extension Services utilises Esoko's TEXTS (Technology for Extension to Smallholders), to provide regular information on four staple crops and four livestock value chains. The program is FICA funded and intended to improve agricultural practices as well as markets. There are currently over 18,000 lead farmers profiled in Esoko, along with the entire Government extension workforce of 2,100.

In **Zambia**, E-vouchers were introduced as a corruption measure within the FISP as well as to improve access to financial services. However, since the *Zambian Cabinet* only approved the use of E-vouchers in August 2015 (MoAL, 2015), analysis of this addition to the subsidy programme may be limited. Given that comparative cases such as Kenya and to some extent, Nigeria, have more experience in this respect, it is likely that some comparative lessons are available in African contexts.

CHAPTER 8: CONCLUSION

Should SADC countries decide to increase their levels of investment in agriculture, in accordance with the CAADP commitments, there are significant financing opportunities for agricultural support programmes, especially where these are oriented to sustainability principles such as conservation and efficiency. Funding sources include several donor countries and private sector players.

The EU-Africa Infrastructure Trust Fund (EU-AITF) is described as “the first EU blended instrument”, with the aim of promoting infrastructure projects in sub-Saharan Africa. In this case, blending means combining long-term investments from development finance institutions (loans, risk capital, etc) with grant monies, to gain financial and qualitative leverage as well as project sustainability. The EU-AITF offers grant support from two envelopes: The Regional envelope promotes regional infrastructure projects (energy, transport, water, ICT), including cross-border projects, while National projects with a demonstrable regional impact on two or more countries are funded separately (EU-AITF 2015).

The Lending for African Farming Company (LAFCo) was established in 2015 by Root Capital, together with Germany's KfW Development Bank and agriculture impact investor AgDevCo. LAFCo provides a \$15 million facility for working capital loans to small and mid-sized businesses that supply and buy from Africa's smallholder farmers. Three of the four countries under review (Malawi, Tanzania, and Zambia) are included in the initial targets "where AgDevCo and Root have overlapping operations" (Price 2015).

The Green Climate Fund and Green bond market channel their resources to projects and programmes which undertake climate change projects and programmes. The aspiration of the GCF is to expand its investment portfolio to \$2.5 billion in 2016. Further sustainability and climate financing channels are likely to emerge following the UNFCCC COP 22 process in late 2016.

The International Finance Corporation has prioritised agribusiness and seeks to improve yields, and support financial institutions dedicated to serving farmers and agribusiness Enterprises. (IFC(A) 2016). The IFC offers numerous financial services, including loans, equity, trade and supply-chain finance, syndications, treasury client solutions, and venture capital.

The Global Agriculture and Food Security Program is a “multilateral mechanism to assist in the implementation of pledges made by the G20 in Pittsburgh in September 2009”. It currently funds public sector projects in three countries within this study: Malawi, Tanzania, and Zambia (GAFSP 2016). Similarly, there are significant opportunities to secure sustainable insurance cover, at various levels. These include the following:

- The Africa Risk Capacity Initiative (ARC), with the mission to help AU member states improve their capacities in planning, preparing and responding to extreme disasters caused by climate change. Funds linked to early warning systems and national response mechanisms offer a solution for protecting agriculture from short-term shocks and facilitate longer-term investments in increasing food security.
- The financial affiliate of the ARC, the ARC Insurance Company Limited, carries out commercial insurance functions of risk-pooling and risk transfer. It is located in Bermuda, pending a favourable legal and regulatory regime exists in an AU Member State. (ARC 2016). \$150 million has been earmarked for the Agency, and by 2020 the ARC has a plan to cover 30 African states with funds of up to 1.5 billion dollars for coverage against drought, floods and cyclones. (allAfrica 2015). Both Malawi and Zimbabwe have signed MOUs with the ARC (ARC 2016).

While seeming to be valuable instruments, the OECD does provide a cautionary note.: “Agricultural risk management policies should focus on catastrophic risks that are rare but cause significant damage to many farmers at the same time. Subsidised insurance is one way of providing disaster assistance but it tends to crowd-out the development of private insurance markets and has not been successful in preventing additional ad hoc assistance being granted after the event” (2011).

Government policies should take a holistic approach to risk management, assessing all risks and their relationship to each other, and avoiding focusing on a single source of risk such as prices. OECD studies show that risks in agriculture are interconnected, sometimes compounding, and sometimes offsetting each other. It is the net risk effect on income that matters, and income variability can be significantly reduced thanks to these interconnections.... ” (OECD 2011).

Countries may also be assisted in accessing donor funds by the Climate-Smart Agriculture Prioritization Framework (CSA-PF), which guides stakeholders in optimising national and sub-national climate change and agricultural planning. CSA investment portfolios measure their potential to sustainably increase productivity, strengthen farmers’ resilience, and reduce greenhouse gas emissions. For national governments, the CSA-PF is an opportunity to promote

a productive, resilient, and low-emissions agricultural sector through increased adoption of CSA. Donors make use of the CSA-PF to identify entry points for investment, as robust impact assessments and trade-off analyses help them make better investment decisions (CGIAR 2015).

The launch of the West Africa Alliance for CSA in June 2015 demonstrates one example where “action is being coordinated to mainstream CSA through National Agricultural Investment Plans (NAIPs), National Adaptation Plans (NAPs), and other regional and national policies and plans.”

The final statement on the matter must be succinct, but forceful. It is the message to SADC countries that agricultural input subsidies are necessary, lawful and appropriate, and should be utilised for particular purposes and at particular times. Subsidies should be effectively and transparently managed, in accordance with the particular purpose, and rigorous monitoring must be done, together with regular evaluations of the impact.

Should the above be the case, countries do have access to low-cost funds to support such programmes, and should exploit these opportunities in the interests of national food security and rural economic development.

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Note: For more from the OECD, see Managing Risk in Agriculture: A Holistic Approach published in 2009. See also: FAO reports entitled, Innovative agricultural insurance products and schemes (2007) and Risk Mitigation and Management for Agricultural Investment: Investment and Resource Mobilization (2008)

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