

# CASE STUDY:

Malawi's Agriculture, Climate  
Change and Food Security  
Country Analysis and  
Programming Recommendations



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## About the Author

This Case Study is produced by Dr Natasha Grist, Research Fellow in Agriculture and Climate Change at the Overseas Development Institute, UK.



## Glossary

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**Adaptation.** The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to the expected change in climate and its effects. Recently, the definition of adaptation has differentiated between ‘incremental’ and ‘transformative’ – relating to whether it aims to keep existing structures in place or to make significant fundamental changes to these.

**Agriculture.** The science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool and other products. In this brief it includes fisheries but does not include forestry.

**Climate change mitigation** refers to efforts to reduce or prevent emission of greenhouse gases.

**Climate change.** A change in global or regional climate patterns. In particular a change apparent from the mid to late 20<sup>th</sup> century onwards and attributed largely to the increase in atmospheric carbon dioxide produced by the use of fossil fuels.

**Climate resilience.** The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

**Food insecurity.** Insufficient supply of food that may cause hunger (food deprivation), malnutrition (deficiencies, imbalances or excesses of nutrients) and famine.

**Food security.** A state or condition where all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

**Undernourishment.** Not having enough food to develop or function normally.

**Vulnerability.** This is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm, and lack of capacity to cope and adapt.



## Executive Summary

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This brief is a country case study of Malawi produced alongside the DFID Topic Guide on Agriculture, Climate Change and Food Security. It highlights how climate change affects food security and agriculture in Malawi. The aim is to provide country offices with a good evidence base and specific guidance on activities, barriers and opportunities for integrating climate change and climate smart agriculture approaches within the national context.

**Agriculture is vitally important to Malawi**, employing 80% of the workforce, producing nearly 35% of GDP and 80% of export earnings. **However, the food security situation is very unstable**: 9.5% of the population (1.8m people) were food insecure in 2013/2014; and just under 25% of Malawi's population were 'undernourished' between 2010 and 2012 (WB 2014). Food prices are volatile, Malawi is highly aid dependent, and the population is expected to more than double in the next 40 years. **Current and future food security are therefore critical.**

**Malawi's agriculture is predominantly smallholder – focussed, but exports are led by the commercial sector.** Government programmes in recent years have concentrated on fertiliser input subsidies in agriculture, but after success in the mid-2000s amidst strong economic growth (up to 7% GDP per annum), these have foundered. A new government installed in June 2014 will bring changes and potentially a refocus on agriculture and agricultural product processing. Agriculture is relatively well-researched, and there is potential for more irrigation from Lake Malawi. However, rainfed smallholder agricultural production, which is responsible for 80% of food production, has a low productivity due to poor incentives to invest in soil quality, technical issues, governance and other vulnerabilities. Commercial farming produces only 20% food but it contributes over 80% of agricultural exports. It is thus a critical part of the country's economy and key to its future growth.

**Malawi is highly vulnerable to climate change.** Due to its high levels of dependence on rainfed agriculture, Malawi is highly vulnerable to climate change, having experienced nearly 1°C increase in mean annual temperature already, and a 1.5-5°C increase expected by the 2090s. Inter and intra-annual precipitation is highly variable and predicted to become more so under the impacts of climate change – although changes in the total volume of rainfall is uncertain. **The impacts of climate change are likely to have a significant negative impact on an already food insecure nation. The maize based food systems might experience yield losses from 18-22% by 2050** (IPCC 2014). Malawi is a relatively low contributor to global anthropogenic carbon emissions, which arise principally from fuel wood burning and agricultural emissions. The focus of climate smart agriculture in Malawi should therefore be on adaptation and increasing productivity rather than on mitigation.

**Climate Smart Options for Agriculture in Malawi currently focus on hard technologies to improve resilience and food security at farm level.** Both the smallholder and commercial sector need to incorporate an understanding of the predicted impacts of climate change into their activities. The current utilisation of chemical fertilisers, do not support long term soil productivity and are therefore not sustainable over the medium and long term. Activities that support more sustainable approaches to agriculture are detailed in the Second National Communication on Climate Change and include seven main areas: **changes in cultivated land area and crop location; change in crop type and crop management; livestock management; fisheries stock protection; water demand management;**



**infrastructure investment, and forestry initiatives.** These are within the boundaries of ‘climate smart production systems’, and are mostly aimed at hard technological innovation.

**However, climate smart approaches to food security should also include analysis further up the agricultural value chain, to reduce post-harvest losses, and also build in commercial possibilities for smallholder agriculture to link to markets.** There is also a need for complementary action to support the scaling up of climate smart agriculture (CSA) in Malawi. These areas of support include: infrastructure, corruption and fraud, local institutional structures, policy, financing and capacity-building.

**Several initiatives on building resilience and climate smart agriculture are underway.** However, these are currently piecemeal and require better coordination and knowledge sharing. To support the wider scale up of CSA, greater international financial is needed and progress should be made on implementing the existing government policies on agriculture and climate change.

### **Recommendations for future programming for DFID:**

- 1. Increase food security and improve livelihoods for the farmers who are ‘hanging in’ – surviving on subsistence agriculture in rural areas:**
  - a) **Increase sustainable food supply** through implementing known sustainable agriculture techniques, encouraging positive government policy and implementation, supporting access to credit, and ensuring women and marginalised groups are included (see 4 below).
  - b) **Increase food availability** through supporting climate-adapted agro-processing industries to increase incomes, purchasing power and the strength and resilience of the country’s economy.
  - c) **Forestry and biofuels** – through supporting initiatives to curb deforestation, support reforestation and improve energy efficiency of fuel wood use.
- 2. Develop and support ‘stepping up’ CSA-appropriate strategies:** Create initiatives that will support farmers seeking to commercialise their produce and foster economic growth, using in country experience and lessons learned elsewhere.
- 3. Coordination in-country on CSA and assistance with Accessing Finance for CSA.**
- 4. Country specific programming.** The Enhancing Community Resilience Programme has made progress to date and demonstrated that communities need to be involved in managing risk. A comprehensive list of adaptation options is available now from the National Adaptation Plan of Action and the Second National Communication on Climate Change. CSA techniques were tested in a recent FAO project in Malawi. Important next steps for DFID or partners might be a series of initiatives in collaboration with government: a social cost-benefit analysis, a socially-realistic feasibility analysis, financial support analysis, and implementation coordination and support.





# SECTION 1

## Food Security within Malawi's Development Context

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**“Food security in Africa faces multiple threats stemming from entrenched poverty, environmental degradation, rapid urbanization, high population rates and climate change and variability” (IPCC Fifth Assessment Report, 2014 p.22)**

For more than 40 years, Malawi has emphasised food self-sufficiency as the main pathway towards food security (FAO 2002). Although agriculture is the backbone of Malawi's economy<sup>1</sup>, Malawi is highly food insecure as a nation. About 1.8 million people (9.5% of the population) were food insecure in 2013/2014 (WFP 2014). Just under a quarter of Malawi's population were considered 'undernourished'<sup>2</sup> in 2010-2012. As Malawi's agricultural sector is based mostly on small rain-fed farms, yields are reduced by droughts and floods and low use of agricultural inputs. Low yields cause a national level food deficit because low food stocks and unstable maize supply in turn generate price instability. Global markets have exacerbated this with price spikes and food price volatility, undercutting some of Africa's wider recent gains in food security (AR5, 2014). An example of this: maize prices were up by 162% on the 5 year baseline in February 2014 (WFP, 2014; Babu and Sanyal 2007). It is a critical situation, particularly against a backdrop of a projected huge increase in demand for food: population is expected to increase from 14.8 million in 2012 to 41 million in 2050 (UN 2014).

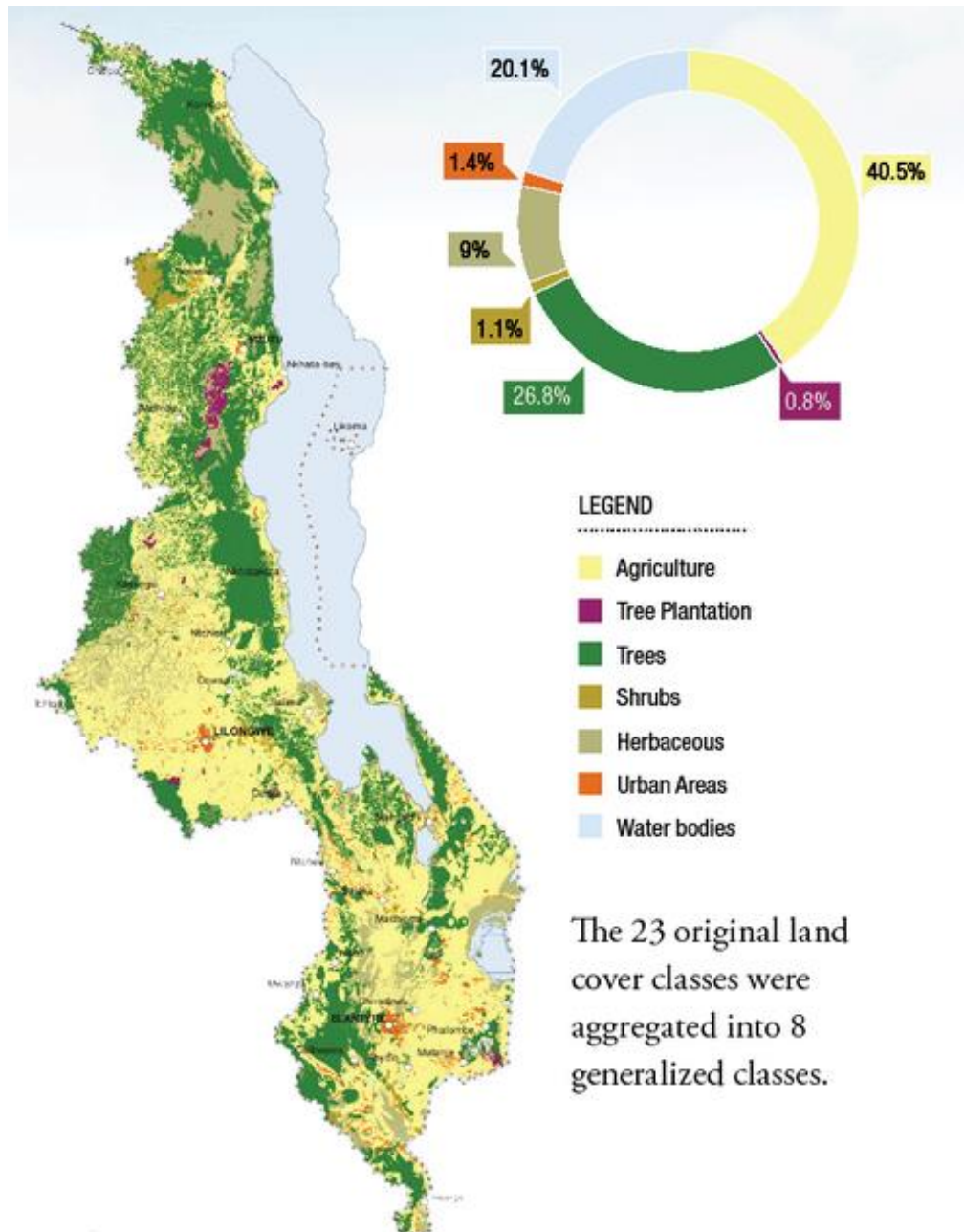
Malawi has tried to tackle this issue before. Despite farms covering 40% of Malawi's land area (see Figure 1), Malawi has suffered food challenges over the last two decades, including major droughts (Kaczan et al. 2013). Food security is central to Malawi's electoral politics (Chirwa and Matita 2012). In the 2000s the Government of Malawi took dramatic action, improving food production significantly in an unsustainable bubble. They achieved this with a 'green revolution' donor-supported Fertiliser Input Subsidy Programme that started in 2004 and which became so strong that it absorbed up to 75% of the agriculture ministry's budget, skewing the expenditure portfolio significantly (Chirwa and Matita 2012). Government corruption led to withdrawal of development assistance and general budget support in 2011. The grain surplus evaporated rapidly and hunger worsened (Tafirenyika, 2013; Chirwa and Matita, 2012). From a previous five year average of about 7% growth, Malawi returned to a state of food insecurity and occasional emergency, with a GDP growth rate in the last 3 years fluctuating from -9.5% (2010) to 5% (2013) (World Bank data 2014).

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<sup>1</sup> Agriculture employs 80% of the workforce, producing nearly 35% GDP and 80% of export earnings in Malawi (WB, 2011). These include tobacco, tea, sugar, cotton, maize, cassava and millet.

<sup>2</sup> Supplied with less than the minimum amount of foods essential for sound health and growth.

Figure 1 Map of Malawi's current land cover (FAO 2009)



In the wider context, smallholder agricultural productivity and food crisis in Malawi is related to a series of factors (Nakhumwa and Hassan, 2012; Chinsinga 2012; GoM 2011; Devereux 2002; Chinsinga 2012) (and see Box 1):

- **Technical issues** - weather, information limitations, low input access and import bottle necks, low use of improved technologies and mechanisation.
- **Governance** – misappropriation of funds, weak private sector participation and lack of access to credit in the agriculture sector, dependence on donors: 30% GDP was from donors in 2010-11 (DFID 2012).
- **Underlying vulnerability factors** - deepening poverty, declining soil fertility, erosion of social capital, women constituting majority of food producers (70%), neglect of smallholder agriculture over the years.



### Box 1 Challenges to smallholder agricultural productivity and food security in Malawi

- Pervasive inequality in women’s access to land and agricultural credit and inputs.
- Weak extension services: only 15% of male and 8% of female farmers access agricultural extension services.
- HIV/AIDS, with 11% adult prevalence rate.
- Small and fragmented land-holding sizes, often less than one hectare.
- Over dependence on rain-fed systems: 99% of all cultivable land is rain-fed.
- Land degradation due to continuous cropping.
- Limited access to financial services: only 12% smallholder farmers access credit.
- Post-harvest losses at 40% due to drought and floods.

Source: Lauterback and Matenje (2013)

All this needs to be understood against the backdrop of Malawi’s precarious wider development context. As one of the world’s least developed countries, over 50% of its population still live under the national poverty line, despite significant progress from the 65% of 1998 (WB 2014). It has few other natural resources apart from agriculture on which to draw an income<sup>3</sup>. And its high rate of population growth means a lot more food will be needed in the next few decades. Malawi is highly aid dependent: it received 37% (US\$1.02bn) of its total government budget in 2011 in aid, mostly in grants (Malawi Aid Atlas 2011). Following continued suspension of support to Malawi’s government by many donors following the “cashgate” incident in 2013, Malawi’s government is looking to procure its own revenue to ensure independence from donors for its central government functions (Yi Dionne, 2014; Chiyembekeza, 2014).

Malawi recognises the central need for food security for its population. The Democratic People’s Party took power in June 2014. In their election manifesto they gave the “**highest priority to agriculture as the basis for maintaining sustainable livelihoods and economic growth of our economy**”. This was based on: a national food security programme aimed at increasing food production, storage and distribution; support to viable agro-processing industries; and reform and expansion of a ‘cleaned up, non-corrupt’ fertiliser subsidy programme (see Annex 2) (DPP 2014). Others are also discussing the possibility of encouraging Malawi’s agricultural subsistence sector to embrace the possibilities of commercialisation as a route out of poverty (Chirwa and Matita 2013).

There are claims however, that commercial farm growers need larger areas for production to be viable (Nyondo, 2013), despite evidence that yields are much lower currently than they might be on both small and large farms. Traditionally the commercial ‘estate’ sector has been separate to the subsistence sector, receiving preferential treatment from government. Structural adjustment over the last 10 years and progressive government has meant that commercial opportunities are now open to the smallholder sector.

<sup>3</sup> Although oil prospecting is currently underway in Lake Malawi.



## SECTION 2

# Importance of climate change to agriculture and food security in Malawi: current impacts and emissions

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### *Impacts of climate change*

Climate change affects food availability, access and the much broader issue of food stability. Malawi is one of the 12 countries most vulnerable to adverse effects of climate change in the world, with very low resilience to climate change (World Bank 2010). The UNDP Climate Change Country profile for Malawi combines modelling data to report on current and future national impacts (Box 2):

#### **Box 2 Climate change impacts on Malawi (McSweeney et al 2010)**

- Mean annual temperature has increased by 0.9°C between 1960 and 2006.
- Frequency of hot days and nights have increased and will increase further.
- By the 2090s, mean annual temperature is expected to increase by between 1.5 and 5.0°C.
- Rainfall projections do not indicate great changes to the 2060s, though there is large variability in projections (-13% to +32%).
- Projections suggest decreases in dry season rainfall and increases in wet season rainfall.
- Projections show increases in how much of the overall rainfall comes in heavy rainfall events by the 2060s.

### *Impact of climate change on food security and agriculture*

The implications of reduced food security on nutrition are important. Although studies are limited, one shows that climate change would increase the percentage of children stunted in sub Saharan Africa by 31-55% by 2050 over a baseline scenario where there was no climate change in that period. Potential effects of climate change are shown in Table 1.



Food Security Component	Potential Effect of Climate Change
<p><b>Food availability:</b> supply through production, distribution and exchange.</p> <p><b>Food Access:</b> affordability, allocation and food preferences.</p> <p><b>Food Utilisation:</b> metabolism of food by individuals.</p> <p><b>Food stability:</b> ability to obtain food over time.</p>	<p>Climate change will lower absolute production and yields due to: increases in extreme events (flooding and drought); increased temperatures causing crop failure and animal stress; and increased incidence of crop and livestock pests and disease. Climate change is unlikely to affect distribution and exchange of food directly.</p> <ul style="list-style-type: none"> <li>• Maize based systems are among the most vulnerable to climate change, with estimated yield losses from 18-22% across sub Saharan Africa. Consistently negative effects on all major cereal crops are projected to 2050. Impacts on non-cereal crops are variable –more research is needed (IPCC AR5 2014: Africa chapter, p. 19).</li> <li>• Livestock will suffer from drier conditions and water insecurity. Little is known about the impacts of climate change on fisheries.</li> </ul> <p>In depressing local and regional yields through extreme events, climate change will exacerbate Malawi’s problem of food price spikes and decrease access to sufficient food. As the AR5 (2014, p. 23) notes, “the intensification of climate change impacts could become more important in the future in terms of exerting upward pressure on food prices of basic cereals, which would have serious implications for Africa’s food security”. Little affected by climate change, though food safety can be lowered in food crisis through improved food preparation and hygiene.</p> <p>Food stability is low in Malawi due to pre-existing vulnerabilities. Climate change exacerbates crop failure; increasing food price spikes and decreasing food stability.</p>

**Table 1 Effect of Climate Change on Food Security in Malawi**

Source: Author

The IPCC’s Fifth Assessment report’s Africa chapter (2014) also points to several further issues which are important to consider:

- Planning for current climate variability and near term climate change is improving; but this is not enough to deal with long term climate change.
- Climate change multiplies existing health vulnerabilities including disease frequencies and malnutrition.
- Most climate change initiatives are isolated, autonomous and often donor driven, and therefore not as effective as they could be.
- Conservation agriculture is proven to increase resilience and adaptation.

*Contribution of agriculture to Malawi’s carbon emissions*

Malawi’s overall carbon emissions were 25.49 MtCO<sub>2</sub> equivalent in 2000 (see Table 2 and Figure 2); compared to only the agriculture sector in the UK, which emitted 49 MtCO<sub>2</sub>e in 2009 (Defra 2011)<sup>4</sup>. Of these emissions, nearly all (96%) are from Agriculture, Forestry and other Land Uses. Although it is not easy to interpret the main source of emissions from the patchy data, it appears that most come from deforestation and the use of wood biomass for fuel. Supporting reforestation and agro-forestry is therefore an attractive option for Malawi.

<sup>4</sup> Note that the most recent (2010) WDI Figures show significantly lower CO<sub>2</sub> emissions for Malawi of 1.24 Mt in 2010. However, these figures do not include the emissions from agriculture and forestry, which comprise the most of Malawi’s emissions.

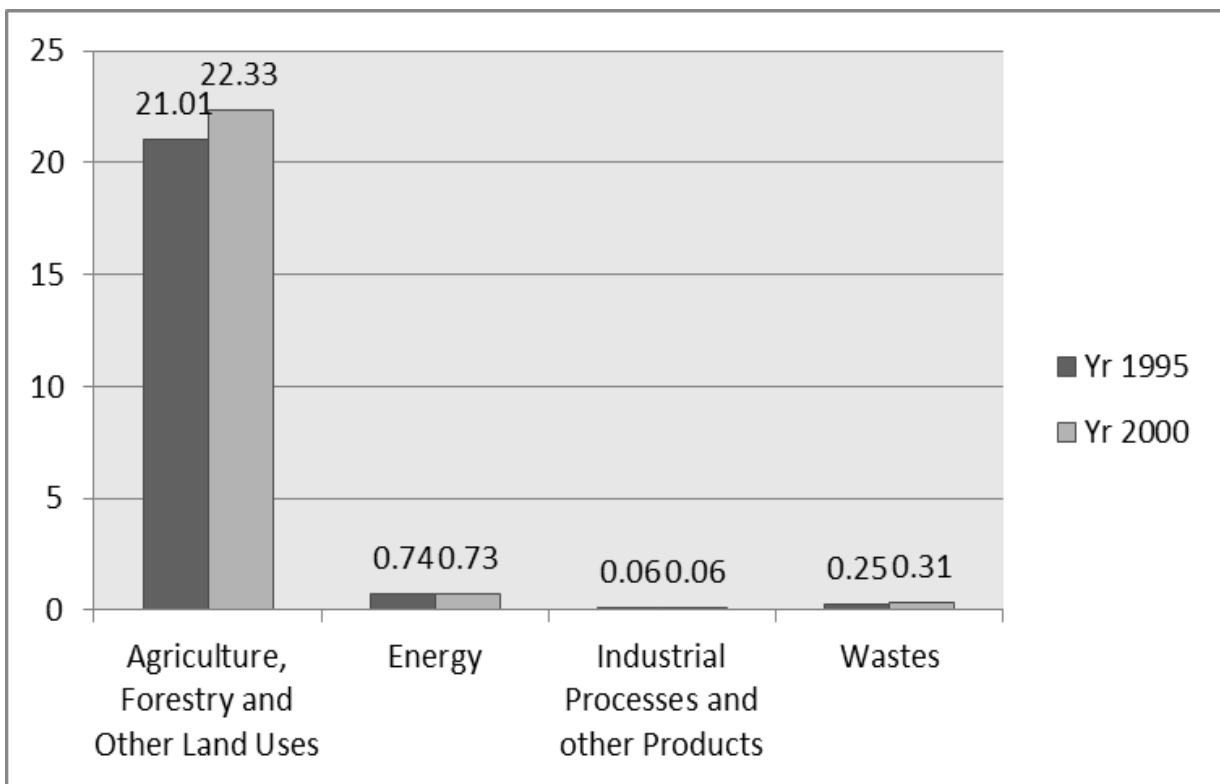
Looking at agriculture, the majority comes from enteric fermentation (animal gut processes) followed by agricultural soils and burning of savannas (Figure 3).

Sector	1995	2000	% change
Agriculture, Forestry and Other Land Uses	21.01	22.33	6.28
Energy	0.74	0.73	-1.35
Industrial Processes and other Products	0.06	0.06	24.00
Wastes	0.25	0.31	24.00
Unaccounted	1.99	2.00	0.50
'Total' <sup>5</sup>	24.05	25.43	5.74

**Table 2 Malawi emissions by Sector (1995 and 2000) in Megatonnes (Mt) of CO<sub>2</sub> equivalent**

Source: Modified from Malawi's Second National Communication to COP of UNFCCC MNREE (2011)

**Figure 2 Malawi Emissions by Sector (1995 and 2000) in Mt of CO<sub>2</sub> equivalent**



Source: Data from Malawi's Second National Communication to COP of UNFCCC MNREE (2011)

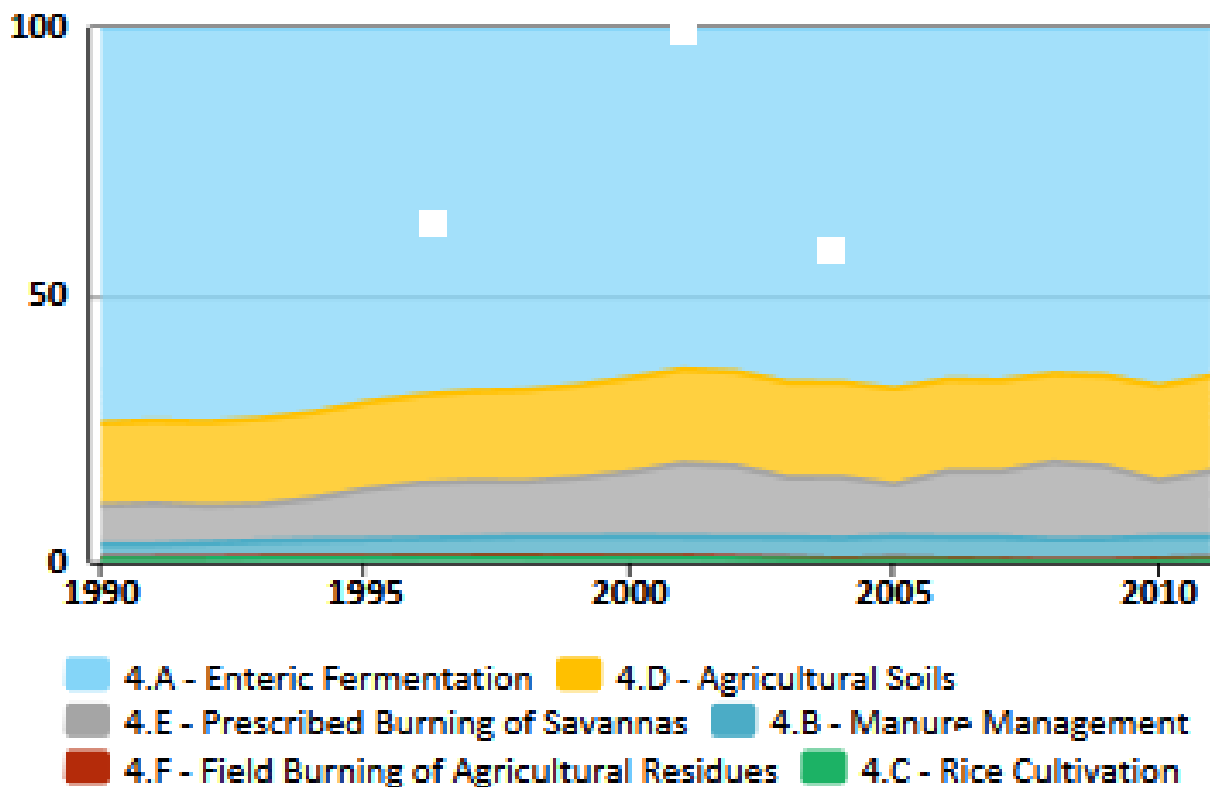
<sup>5</sup> We note some inconsistencies in figures reported.



Figure 3 Agricultural emissions from Malawi (CO<sub>2</sub> equivalent)

## GHG Emissions in the Agricultural Sector

% Share





# SECTION 3

## Climate smart agriculture considerations for Malawi: adaptation and mitigation

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Climate-sensitive approaches to agriculture, particularly those that focus on food security, agricultural productivity and increasing resilience to climate change, are essential given the implications of climate change for agriculture in Malawi. Most recently Climate Smart Agriculture has been adopted as a way to describe an approach that contributes to:

- Increasing food security / agricultural productivity.
- Increasing adaptation/resilience to climate change.
- Reducing greenhouse gas emissions in a sustainable way.

Whilst to date, there has been most focus on the technical agricultural practices side of CSA, policy and investment issues are critical:

“Climate Smart Agriculture is an approach to developing the technical, policy and investment conditions to achieve sustainable agricultural development for food security under climate change” (FAO 2013, ix)

More recently, climate smart approaches encourage a landscape-based approach (beyond just the farm level to wider natural resources). Malawi’s Second National Communication on Climate Change (2011) gives a comprehensive analysis of the situation and details both adaptation and mitigation options across all sectors, including agriculture. Many of the wider agriculture, forestry and other land use aspects not only contribute to food security/resilience building but would also contribute to mitigation.



## Adaptation/Resilience Building

Changes in land use	
Changes in cultivated land area and crop location	Expansion and reduction in land under cultivation. Rangeland and cultivation can be expanded in high altitude plateaus that are currently unfavourable temperatures for pastureland. In lower altitudes, excessive heat and/or drought may reduce ability to do successful crop cultivation unless irrigated (e.g. Shire Valley and some of Lakeshore Plain).
Changes in crop types	<ul style="list-style-type: none"> <li>• Warmth-loving crops / short season drought tolerant crops.</li> <li>• Genetically Modified to enhance adaptation to harsh or changing climate conditions especially water stress.</li> <li>• Adopt climate adapted crops to water stress – cassava, sweet potato, sorghum, millet.</li> <li>• Improve growth rates and water use efficiency of existing crops.</li> <li>• Screen for, and introduce, best crops for future climates in different regions.</li> <li>• Use of sustainable agriculture: contour farming, crop residue management, conservation farming, agroforestry systems, improved fallow periods.</li> <li>• Crop diversification – horticulture, livestock, fisheries, other cereals – for crops more e.g. sorghum.</li> <li>• Management for sustainable irrigated agriculture.</li> </ul>
Changes in land management practices to adapt to climate change	
Crop management	<ul style="list-style-type: none"> <li>• Irrigation water and integrated soil fertility management.</li> <li>• Insect pest, weed, disease control.</li> <li>• Control of erosion / soil drainage.</li> <li>• Changes in farm infrastructure (farm layout and agricultural support services e.g. marketing / credit).</li> <li>• Changes in crop husbandry and agronomic practices – tillage ploughing harvesting fertiliser amounts, crop diversification, planting dates, planting regimes.</li> </ul>
Livestock management	<ul style="list-style-type: none"> <li>• Drought tolerant pasture grasses.</li> <li>• Decrease young stock mortality rates.</li> <li>• Planned culling in certain areas where stocking is too high causing pasture stress.</li> <li>• Reproductive efficiency.</li> <li>• Growth rates in cattle.</li> </ul>
Fisheries	<p>Less information is known here in detail, but recommendations include:</p> <ul style="list-style-type: none"> <li>• Protection of vulnerable stocks with enforced regulations.</li> <li>• Restocking of vulnerable stocks.</li> <li>• Protected area enforcement – up to 10% of Lake Malawi conserved.</li> <li>• Aquaculture (pond fish farming).</li> </ul>
Water	<ul style="list-style-type: none"> <li>• Water demand management – improved water supply, piped water supply, boreholes.</li> <li>• Water infrastructure, small and large dams.</li> <li>• Water conservation – small reservoirs/ rain harvesting, large dams.</li> </ul>
Forestry	<p>As the source of nearly all energy used by households in Malawi, forests have been seriously dwindling in recent decades. In addition to current overuse, climate change is expected to cause stress to existing tree species and up to a 37% decrease in productivity. Adaptation to climate change will require:</p> <ul style="list-style-type: none"> <li>• Tree nurseries and planting drought tolerant species.</li> <li>• Focus on alternative/more efficient energy sources including: <ul style="list-style-type: none"> <li>i) cooking using grid electricity ii) efficient firewood cooking stoves iii) efficient lighting techniques (photovoltaic not paraffin) iv) solar electricity systems (where uptake has been low due to their cost).</li> </ul> </li> </ul>

**Table 3 Expert recommendations for resilience-building options to climate change in the AFOLU sector in Malawi (MNREE 2011)**



CSA technologies are in the main not new and exist and complement those adopted by sustainable agriculture and sustainable intensification practises. The main difference is that under the CSA approach they are evaluated to measure increases in productivity, resilience and mitigation.

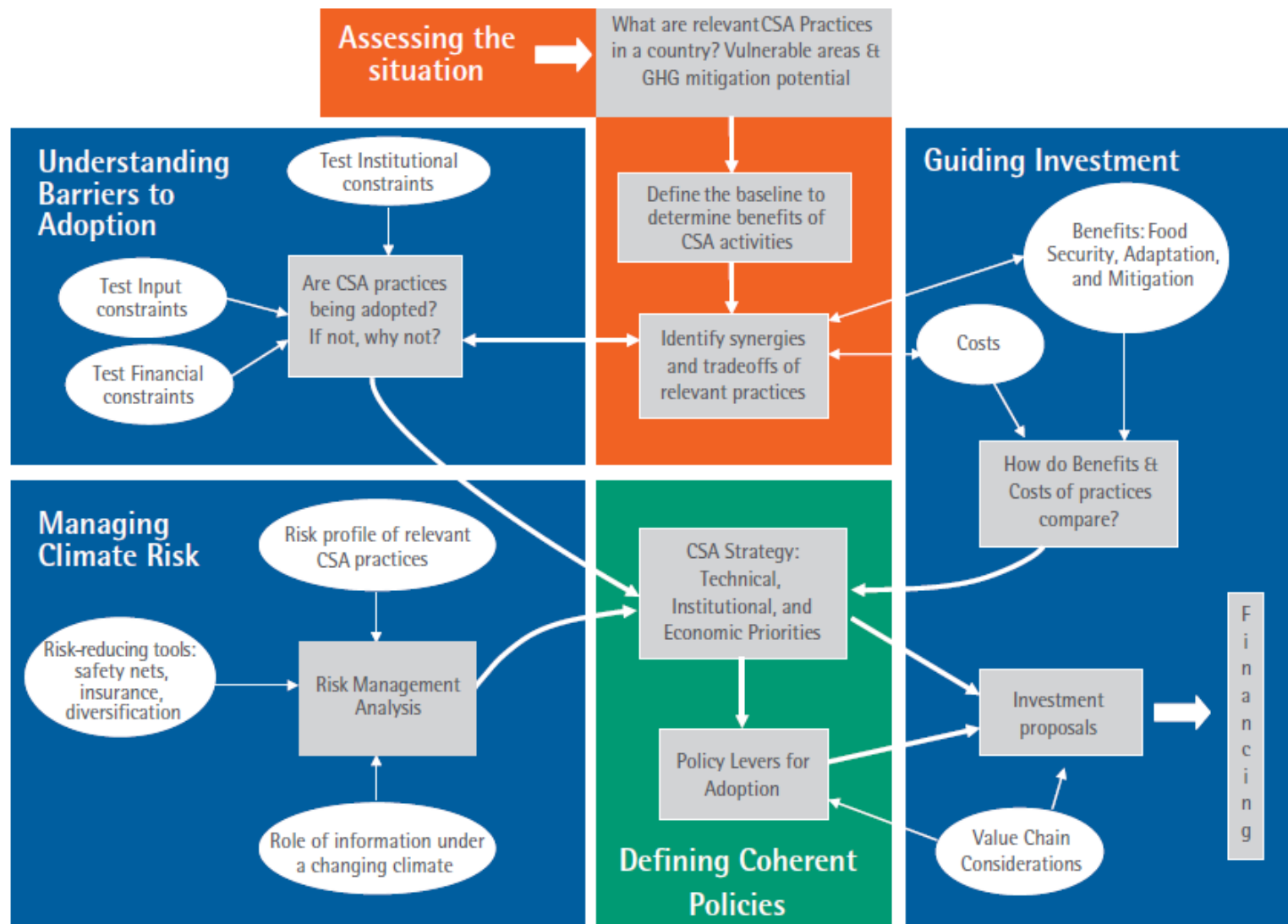
The Climate Smart Agriculture sourcebook produced by FAO provides detail for the components of climate smart agriculture:

- Managing wider landscapes for climate smart agriculture systems.
- Water, soil and energy management for resilience and mitigation.
- Genetic resource conservation as part of resilience building.
- Climate smart production systems: crops, livestock, forestry, fisheries.
- Food value chains that are sustainable and inclusive.
- Frameworks: local institutional structures; mainstreaming into national policy and programmes; financing; capacity development; monitoring and evaluation.

As part of a project focussing on Malawi and climate smart agriculture, Cattaneo et al. (2012) designed a framework for Developing a Climate Smart Agriculture Policy (see Figure 4). This model suggests a series of steps: assessing the situation and identifying relevant CSA priorities; understanding barriers to adoption; managing climate risk; guiding investment decisions; and finally developing policies on CSA that define technical, institutional and economic priorities. What is important to note is that this analysis may lead to conclusions that issues to resolve as a priority may be unrelated to CSA technologies. For example, conclusions may find that the problem identified is related to commercialisation bottlenecks or access to rural credit.



Figure 4 Framework for development Climate Smart Agriculture approach



Source (Cattaneo et al., 2012)



Certain aspects to this framework are important:

- **Micro level Climate Smart Agriculture** activities need to be evaluated and prioritised. Different activities are currently scattered in Malawi, without overall coordination and knowledge sharing, and there is little prioritisation.
- **Coordination of activities** is needed, including private sector (farmer adaptation), financial sector (credit for investment), government (policies) and research and extension (appropriate information on climate change). In Malawi there is little coordination, even amongst donors working on climate smart agriculture.
- **Increased investments are needed at farm level** to cover transition times to climate smart agriculture with financing incentives. Financing and credit is limited; most finance comes from remittances and off-farm income in Malawi.
- **Policy instruments** such as rural credit, input and output pricing, tenure, extension and safety net programmes will affect livelihoods and affect incentives for farmers to adapt to climate change. Refocussing on sustainable agricultural practices in policy and in the budget actually allocated to policy will assist this.

Currently, Climate Smart Agriculture approaches tend to focus on smallholder farming rather than commercial farming, and on the technological changes at the farm level for adaptation and mitigation. This has meant a lack of focus on:

- **The contribution of commercial farms or the potential of smallholder farms commercialising<sup>6</sup> to increase food security and agricultural productivity at a national level.** Commercialisation of the surplus producing smallholder farms is an important possibility (Chirwa and Matita 2013). However, there is a dearth of information about the impact of climate change on the commercial farm estates which produce significant proportions of GDP for the country and employ many of the poorest rural dwellers.
- **Wider food security issues such as agricultural value chains, processing, storage, distribution and policy incentives.** This is often overlooked in climate smart agriculture projects in Malawi, which are mostly farm-based and only recent focus on policy changes. The wider agricultural value chain is still ignored.
- **Gender and social equity issues (which are particularly important in African farming).** In Malawi, 70% of the agricultural labour force is made up of women, producing 70% of household food. Women have much lower access to inputs, technologies, extension services, credit and land than men, and a recent analysis of WB and AfDB projects showed that, despite rhetoric prioritising women, agricultural projects are not inclusive (Lauterbach and Matenje 2013).
- **Watershed level or landscape level issues for climate change and management.** Malawi has several projects working on watershed and catchment level initiatives for agriculture, but not for climate change specifically.

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<sup>6</sup> Intensification and commercialisation of smallholder activities is a strong possibility for encouraging agricultural growth in Malawi (Chirwa and Matita, 2012).



# SECTION 4

## Progress towards climate smart agriculture in Malawi to date

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### 4.1 State of Play with Malawi Agricultural and Climate Change Policy

**At the national level policy links are clearly made between agriculture and climate change.** Currently there is no specific climate change policy and legislation in Malawi; this is under development (MoECCM 2013). However, climate change was highlighted in the Malawi Growth and Development Strategy I and II (2011-2016), focussing on the need to mainstream mitigation and adaptation into all sectors to increase resilience and promote sustainable development. In addition, the National Environmental Policy (2006) highlights the need to reduce the impacts of climate change. Malawi has produced a National Adaptation Programme of Action (NAPA), and two National Communications on Climate Change to the UNFCCC, although none of the activities proposed have been implemented to date (MNREE 2011).

Malawi does not have a unified agricultural policy; this is still in draft. Instead there are several policies including: the Food and Nutrition Security Policy (2005); HIV and Aids in the Agriculture Sector Policy and Strategy (2003); National Land Use Planning and Management Policy (2005); and Malawi Irrigation Policy and Development Strategy (2000).

The Ministry of Agriculture and Food Security (MoAFS) works instead with a number of disparate policies, some of which integrate climate change, and some of which do not have sufficient funding or political clout for their full realisation. The Agricultural Sector Wide Approach (ASWAp) is one of the main policies. It is aligned to the previous donor-supported Agricultural Development Plan (ADP) as well as the wider regional Comprehensive Africa Agriculture Development Programme (CAADP) processes. FAO analysed this policy, concluding that “aspects of the ASWAp support adaptation and mitigation work, including maize self-sufficiency, production diversification, scaling up Sustainable Land Management practices and some weather risk management tools” (Cattaneo et al 2012, p.x). However, there are critiques that the ASWAp is heavily biased towards the Farm Input Subsidy Program (FISP). This has been criticised for having “very little long-term productivity enhancing impact” (Chirwa and Matita 2012; p. 13) and not being fit to facilitate the fundamental and sustainable agrarian transformation that is needed through fostering research and development, extension and rural infrastructure development in the country (Chirwa and Matita 2012). The new government has pledged in their manifesto to continue the FISP; it remains to be seen if they will add other aspects to the agriculture portfolio that are needed for this transformation.

The National Adaptation Plan for Action for Malawi highlights agriculture as one of the most important sectors, “including improving crop production through appropriate technologies, increasing resilience of production systems through the adoption of sustainable land management techniques, and afforestation and reforestation to improve fuelwood supplies and improved watershed protection” (Cattaneo et al 2012, p.x). A National Climate Change Response Strategy on Agriculture was produced in 2010.



A National Climate Change Investment Plan (NCCIP), the first of its kind in Africa was launched in April 2014, and will be used to seek donor funding. It identifies funding requirements for adaptation projects of USD 460m up to 2018 (MoECCM 2013). These represent the best thinking to date on Malawi's climate change planning and highlight a set of investments including:

- Adaptation investments (integrated watershed management; community resilience through agriculture production, climate proofing infrastructure, improved disaster risk management (DRM).
- Mitigation investments (REDD+; waste management; energy saving technology).
- R&D transfer (adaptation and mitigation technology development and transfer).

National Climate Change Steering and Technical Committees and meetings between Government and Donors have occurred. There are further plans to develop a climate change sector working group and improve district climate change coordination plans, civil society advocacy on climate change and communication between the private sector, development partners and civil society. Conceptual standardisation would significantly help these processes with understanding what Climate Smart Agriculture is, and is not (Ben Wood pers comm 2014).

The FAO is near completion with a Climate Smart Agriculture Institutional and Policy Change project that worked closely with the Malawian government departments to help integrate climate change and agriculture and assist development of an investment framework between the two.

## 4.2 Implementation (main initiatives)

### 4.2.1 Farm level CSA practices and uptake in Malawi

The main climate smart techniques that have been promoted to improve and sustain agricultural productivity in Malawi are agroforestry and conservation agriculture (FAO 2013). Irrigation potential is also high, with only 15-18% of land suitable for irrigation currently irrigated. FAO's (2013) study data in Malawi demonstrate significant positive impacts from CSA on farm practices including: conservation agriculture, water management, agroforestry and livestock (See Table 4).



CSA Technology/Practice	Measured Impact
Conservation agriculture – minimum soil disturbance, retain organic soil cover, diversify crop species: 6% of total maize are produced under conservation agriculture <ul style="list-style-type: none"> <li>• Reduced tillage</li> <li>• Reduced tillage and mulching</li> <li>• Reduced tillage and Legume integration</li> <li>• Reduced tillage and Herbicide application</li> </ul>	Yield increases 9-11% Labour costs reduced 25% over conventional agriculture
Agroforestry systems – mixed crop and tree species intercropping for fertility maximisation <ul style="list-style-type: none"> <li>• Fertiliser tree species e.g. Faidherbia albida, cajamas cajan</li> <li>• Some for fodder/soil fertility</li> </ul>	Yield increases up to 100%
Water retention structures <ul style="list-style-type: none"> <li>• Stabilisation of hedgerows with vetiver</li> <li>• Pit planting</li> <li>• Box ridges</li> <li>• Infiltration trenches, weirs and swales</li> <li>• Small scale irrigation systems</li> </ul>	Treadle pump gave 300% increase in net farm income from increased yields
Early-maturing, drought-tolerant crop varieties <ul style="list-style-type: none"> <li>• e.g. SC403/Pannar 67 and DK8033</li> </ul>	Unknown
Livestock feeding systems <ul style="list-style-type: none"> <li>• Intensive zero feed systems maximises weight gain and milk production in dry conditions</li> </ul>	Unknown

Source (adapted from FAO 2013)

**Table 4 CSA Technologies/Practices and Impacts in Malawi**

The findings suggest that agroforestry is a promising option for smallholders leading to greater yields and profit among adopters. The evidence on conservation agriculture is weaker but appears to be positive. The adoption rates are found to be higher than in other countries but not as high as might be expected given the level of promotion and the potential benefits.

A forthcoming analysis (McCarthy n.d.) on CSA adoption shows that sustainable land use practices increase maize yields. Sustainable land use practices increase when climatic variability increases and when there is delayed onset rainfall, where there are strong rural institutions and social capital in an area. Where climate variability is higher, there is lower use of modern inputs. Further modelling simulations demonstrate the effectiveness of CSA policies depends on: the agro-ecological characteristics of the area (marginal lands are tricky); how well linked in socially the community is; expected losses through disaster; and carbon sequestration payment potential.

#### 4.2.2 DFID's work on climate change and agriculture in Malawi

DFID is one of the main donors to Malawi's government, funding 11% of the total aid budget in 2011 (MoF 2011). DFID's main focus on climate change in Malawi is through a project called Enhancing Community Resilience, which works at community level on adaptation and resilience to climate change, and at national policy level with government ministries (MoAFS and MOECCM).



### Box 3 DFID Enhancing Community Resilience 2011-2016 (£18/21.5m)

The project seeks to help eradicate extreme poverty and hunger in Malawi by reducing the proportion of people living on less than a dollar a day. The intended outcome will be increased resilience of vulnerable communities to climate variability and change targeting 1.2 million people, 603,000 directly and 597,000 indirectly. The project aims to:

1. Increase the capacity of local authorities, communities and individuals to address the impacts of climate change. 400,000 individuals will be supported to develop more resilient livelihoods and 700 communities will be sensitised to Disaster Risk Reduction and Climate Change and will develop disaster preparedness and response plans.
2. Increase the capacity of communities and individuals to adapt their livelihoods to climate variability, climate change and disasters. 600,000 individuals will be supported to adopt at least three types of adaptation strategies, such as:
  - Solar power
  - Irrigation
  - Livestock
  - Conservation agriculture
  - Agro-forestry
  - Village Savings and Loans
  - Drought tolerant crop variety and type of crops
  - Post harvest management practices
  - Watershed management
  - Water harvesting.
3. Promote information sharing between stakeholders on Disaster Risk Management (DRM) and strengthen climate change adaptation.
4. Strengthen Early Warning System (EWS) for climate related disasters (for both slow and rapid onset disasters).
5. Strengthen disaster risk reduction and climate change policy and programmes and delivery structures of key Government Ministries and Departments.

A number of lessons are being learned as this project continues (ECRP 2013), including:

- Involving Village Chiefs as Lead Farmers is instrumental in mobilising, awareness raising and convincing farmers to start practising conservation agriculture.
- Joint planning meetings at community level are essential to enhance ownership and collaboration.
- Government extension workers can support programme implementation with good planning and information in advance.
- Information sharing through display posters is effective.

DFID also contributes to a number of other related projects including rural roads, and with AgDevCo they are supporting irrigation and other interventions in agriculture.



### 4.2.3 Climate Smart Initiatives in Malawi

#### *Climate change investments in Malawi*

A number of donor investments related to climate change exist in Malawi (see Table 5).

DONOR	NUMBER OF PROJECTS	NUMBER OF ACTIVITIES	CUMULATIVE COMMITMENT (CURRENT USD)	NUMBER OF CAPACITY DEVELOPMENT (CD) PROJECTS	NUMBER OF CLIMATE-ORIENTED (CO) PROJECTS	PERCENT OF CUMULATIVE COMMITMENT (CD/CO, CURRENT USD)	PERCENT OF ACTIVITIES (CD/CO)
USAID	134*	517*	\$783,907,152*	55	-	20.3	10.6
DfD	91*	380*	\$803,563,985*	39	24	3.7	16.6
Norway	70*	372*	\$201,568,181	73	72	27.0*	39.0*
UNDP	64*	159	\$80,589,289	24	11	11.4	22.0
FAO	49*	311*	\$25,807,768	122	35	66.3*	50.5*
JICA	47	79	\$110,289,276	15	1	22.9*	20.3
EU	46	227	\$906,167,082*	43	5	19.8	21.1
World Bank	25	139	\$660,833,216*	44	2	20.8	33.1*
AfDB	24	232*	\$402,985,378*	89	3	24.7*	39.7*
Ireland	23	69	\$17,475,455	10	15	41.1*	36.2*

Source: Baker et al (2013)

**Table 5 Climate change and capacity development projects by donor in Malawi**

In Malawi there is currently little central coordination around climate smart agriculture projects, most being funded by groups of donors and implemented by NGOs. Details of projects known to date were collected in mid-2014 by Ben Wood (see Annex 1). In summary they include

**Those that work at the policy level:** Examples include, a FAO project to bring together climate change and agriculture ministries and policy. UNDP and others – ASWAp; CAADP; integration of CC into agricultural policy considerations.

**Climate Smart Agriculture practices:** Whilst many of the projects do not mention mitigation, nearly all of them will mitigate climate change as part of the practices of conservation agriculture and agroforestry approaches. Examples include:

#### **CSA:**

- JANEEMO and Kusamala – climate smart agriculture technologies into communities.
- Clinton Development Initiative Anchor Farm – commercial farm enterprise, maize and soy seed inputs, loans and credit to associated smallholders – an increase of 5x income is reported as achieved.

#### **Agricultural Resilience and adaptation to climate change:**

- Enhancing Community Resilience to Climate Change, DFID.
- Lake Chilwa Adaptation Project, Norwegian Government.
- Promoting conservation agriculture in smallholder farming, National Association of Smallholder Farmers (NASFAM), Irish Aid.
- Shire River Basin Management Project (covers water/forest/agriculture), WB / UNDP.

**Mitigation and resilience:**

- Solar irrigation schemes in CSA, Nordic Climate Facility Fund.

**Mitigation/forestry:**

- Clinton Development Initiative: Trees of Hope, carbon finance, Plan Vivo.
- Bioenergy Resources limited: planting Jatropha using carbon finance.
- Kulera Biodiversity Project/REDD+: carbon finance forest reserve.
- Majete REDD+: donations and carbon market.
- Shire River Basin Management: two possible Clean Development Mechanism (CDM) projects.

## 4.2 Finance

Finance for climate-resilience-related agricultural projects in Malawi is in its infancy. To date, most finance in agriculture at the smallholder level has been from remittances and off farm income. Access to credit is low. Government finance has focussed almost entirely on the Farm Input Subsidy Programme (FISP). If CSA approaches are successful, uptake should occur independently of donor and aid programmes. To date, several projects on CSA and resilience are underway, primarily funded by international aid. However, in the past there has been very substantial investment in food security programmes within Malawi. An analysis of the efficacy of these similar projects would be useful before designing CSA programmes.

The National Climate Change Investment Plan has recently been completed. Malawi is in a good position now to develop CSA related investments within this framework. Part of the National Government Agriculture budget should be devoted to CSA due to its proven improvements to agricultural sustainability and potential to support broad economic growth.



# SECTION 5

## Successes and Limitations experience to date on CSA and food security

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Summarising the above, there are four main areas of experience to date on CSA and food security within Malawi:

1. Within agricultural policy as a whole, there is little coherence across individual policies currently in Malawi and it is challenging to mainstream climate change across these. However, climate change has been developed into national policy. Some work has been started to mainstream climate change into agricultural policy, but this is an ongoing task.
2. Coordination across ministries, NGOs and multilateral institutions working on climate change has been fairly piecemeal to date. This is improving but limited funding for coordination hinders this.
3. A number of NGOs have implemented pilots of Climate Smart approaches at field and farm level, and some are beginning to tackle market access and produce and processing further up the agricultural value chain. But this is very much incipient. Much more remains to be done to prepare Malawi's agricultural system to be more resilient to climate change. Related to this, research is limited and piecemeal with little co-ordination. A climate smart agriculture handbook is being modified for the Malawi country level by the FAO and further field level studies are under way by a number of research institutions and multilaterals. It is important that lessons learned are quickly disseminated to speed up the roll out of effective approaches.
4. In terms of finance, a strategic framework for finance is being developed at national level, but there is no regular finance to date for climate change and resilience in agriculture in Malawi.



# SECTION 6

## Key areas for further work – recommendations

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1. **DFID's policy to date has been to focus on increasing food supply and availability, for subsistence farmers.** The new government has a priority on diversifying agricultural primary production and improving food security and soil fertility. This means there is a strong opportunity to work closely with government on a number of areas:
  - 1a) **Increase Sustainable Food Supply**
    - **Integrate climate resilience into subsistence food crops** programmes.
    - **Ensure the next version of the Farm Input Subsidy Programme (FISP)** adequately targets and includes the poorest and most marginalised.
    - **Promote climate resilient and sustainable irrigation.**
    - **Support efforts to increase yields of subsistence crops through conservation agriculture and agroforestry methods.**
    - **Prioritise women** and their concerns and constraints around farming and changing farming practices.
    - **Support an improved understanding of the implications of climate change on health and malnutrition.**
    - Support an improved understanding of the long term impacts of climate change on food security.
    - Include consideration of wider development initiatives needed to support CSA, such as market access; credit; village savings and loans schemes.
  - 1b) **Increase food availability**

National government supports the ideas of agro-processing industries to increase incomes and increase agricultural growth and profit. DFID's climate smart approach could focus on considering the energy and water needs of agro-processing and its implications for other sectors and how to decrease the considerable post-harvest losses.
  - 1c) **Forestry and biofuels**

The analysis of Malawi's current land use situation demonstrated that deforestation and use of wood biomass for heating and cooking is a source of CO<sub>2</sub> losses. More importantly, deforestation caused by the use of wood for household cooking fuel is a 'time bomb' for Malawi due to lack of replenishment and a looming energy gap; DFID could consider investment in this area for poverty reduction and livelihood improvements.
2. **Develop and support 'commercialisation' of CSA**

DFID could use its expertise from other East African countries to support farmers who are 'stepping up' in agriculture and seeking to commercialise their produce and foster economic growth. A market and an effective value chain for agriculture was highlighted as essential for private sector engagement in a recent stakeholder workshop on agricultural futures in Malawi (FAO April 2014).

3. **National Coordination on CSA strategy development, activities, funding and knowledge sharing**

Coordination on conservation agriculture and climate change initiatives is currently desperately lacking in Malawi as the Climate Change ministry is not in control of this and the agriculture ministry's budget has been focussed elsewhere. Learning and solving barriers to scale up CSA is essential. FAO has developed an investment strategy for CSA, which was expected at the end of 2014. Within the range of interested stakeholders there is not sufficient coordination or knowledge sharing of activities. A central database for evidence and national level knowledge sharing forum is a first step that DFID could support.

4. **Country specific programming: Designing a CSA strategy for Malawi is important.** Currently a list of options is available now from the NAPA and the Second National Communication on Climate Change. FAO are in the process of developing an investment strategy. DFID could support creation of a costed social cost benefit analysis, together with feasibility analysis of the investment proposals.

5. **Research priorities could include:**

5a) **Role of the large commercial farms in food security and rural wellbeing, and their vulnerability to climate change.** Large estates (e.g. tea/tobacco) employ landless and poor rural farmers for seasonal wage labour. However, the impacts of climate change on these industries are currently poorly understood and yet, the effects on the poorest in rural Malawi may be significant.

5b) **Agricultural value chain assessment for CSA produce.** Research up the value chain in agriculture could demonstrate where the areas are which will have greatest impact on household resilience and incomes. For example, post-harvest food waste reduction efforts may be more effective in increasing the amounts of marketable crop than increasing yields through specifically applied fertilisers.

5c) **Long term climate impacts in different agro ecological regions.** There is still a lack of information of variability in climate impacts in the short and long term across Malawi's regions. Better downscaled data will improve the ability to plan for extreme events increased variability, and long term change.

5d) **Investigating what works for women in terms of extension services.** Studies have shown that women and men have different levels of engagement and access to: certain technologies, information, land, credit and decision making power.. Tailoring for women's needs, the majority of farmers, will assist the increased efficiency, production and resilience to climate change of farmed areas.

5e) **Health and malnutrition impacts of climate change by region.** These impacts are little known, and are important requirements for effective planning of health services and food security interventions.

5f) **CSA planning by disaggregating smallholders.** Smallholders' ability to respond to and uptake certain CSA practices, approaches and technologies varies according to their household's characteristics. It is important that CSA intervention strategies consider the potential uptake and impacts on the most marginal and vulnerable households, and those within them, as part of a poverty reduction strategy. Similarly, wealthier smallholder households may be able to increase incomes considerably through investment in specific CSA strategies and approaches. Research into a farmer-sensitive planning approach using a range of techniques across different types of smallholders, will provide better information about which approaches should benefit and be better suited to each smallholder group.

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## Annex 1 Climate Smart Agriculture Initiatives in Malawi – Development, Mitigation and Adaptation

(alphabetic by project title) (by kind permission of Ben Wood, 2014)

Project name	Sectoral focus	Duration	Location type (place)	Implementing Partner Type (name)	Funding source(s)	Community beneficiaries
<b>Climate-smart Agriculture for Rural Smallholders in Malawi</b>	Agriculture	2013-2016	Rural (Dowa and Lilongwe)	International Research Organisation (James Hutton Institute); International Consultancy (Climate Futures); Local NGO (Kusamala)	Scottish Government International Development Fund	1,500 farmers and their households
<b>DISCOVER Malawi (Part of Enhancing Community Resilience Programme)</b>	Forestry/ Agriculture/ Energy	August 2011- March 2016	Nsanje, Dedza, Salima, Karonga and Balaka	International NGO (Concern Universal); International NGO (Cooperazione Internazionale); Local Private Company (Clioma); Goal (International NGO); Self Help Africa (Regional NGO); Solar Aid (Regional NGO); Local Private Company (Cumio); Regional Advocacy Institution (CEPA)	UK, Norwegian and Irish Government (Joint Resilience Unit) grants; Climate Finance aspect being developed for the future	62,900 households
<b>Drought Mitigation Through Irrigation and CA Extension (DICE)</b>	Agriculture/ Forestry/ Energy	2012-2015	Salima, Dowa, Ntcheu	International NGO (Care International); National Government (through various Ministries and Departments); Local NGO (Total Land Care)	USAID grant	4,000 households
<b>Enhancing Community Resilience Project (Part of Enhancing Community Resilience Programme)</b>	Forestry/ Agriculture/ Energy	2011-2016	Karonga, Kasungu, Salima, Dedza, Balaka, Machinga, Thyolo, Mulanje, Mwanza, Chikhwawa and Nsanje	International NGO (Christian Aid); International NGO (Action Aid); International NGO (CARE International); Research Organisation (ICRISAT); Local NGO (CADECOM); Local NGO (MALEYSA); International NGO (Heifa International); Local NGO (ADRA Malawi); International NGO (Emmanuel International)	UK, Norwegian and Irish Government (Joint Resilience Unit) grants, USAID grant	61,000 households
<b>Food, Income and Markets (FIM) II)</b>	Agriculture/ Forestry/ Energy	2012-2015	Dowa, Lilongwe, Nsanje,	International NGO (Concern Worldwide); Local Government (Area Development Committees and District Executive Committees); Local NGO (NASFAM); CBOs	Irish Aid Grant; Accenture CSR	15,000 households
<b>Fuelling a Greener Future for Farmers in</b>	Forestry/ Agriculture	July 2008-	Rumphi, Mzimba, Kasungu, Nkotakota,	Local Private Company (Bio Energy Resources Limited)	Carbon Finance (Verified Carbon)	Tbc



Project name	Sectoral focus	Duration	Location type (place)	Implementing Partner Type (name)	Funding source(s)	Community beneficiaries
<b>Malawi through the use of Jatropha Curcas</b>			Dowa, Salima, Lilongwe, Ntcheu/ Dedza, Mangochi and Machinga and Lilongwe		Standard)	
<b>JANEEMO</b>	Agriculture/ Forestry/ Energy	2011-2014	Rural (Dowa and Lilongwe)	International Research Organisation (James Hutton Institute); International Consultancy (Climate Futures); Local NGO (Kusamala)	Scottish Government International Development Fund	700-800 smallholder farmers and their households
<b>Kulera Biodiversity Project/ Kulera REDD+</b>	Forestry/ Agriculture/ Energy	2010-2013; 2014-	Rural (Nyika-Vwaza complex; Mkuwazi Forest Reserve; Nkhotakota Wildlife Reserve)	Local NGO (Total Land Care); International Research Organisation (Washington State University); International NGO (CARE International); International Consultancy (Terra Global Capital); Donor Agency (USAID);	USAID grant; carbon finance (Climate, Carbon and Biodiversity Standard)	45,000 households
<b>Mainstreaming Climate-Smart Agriculture in Solar Irrigation Schemes for Sustainable Local Business Development in Malawi</b>	Agriculture/ Energy	2013-2015	Nsanje, Thyolo and Mzimba	International NGO (DanChurchAid); International NGO (Churches Action in Relief and Development); Local NGO (Christian Service Committee of the Churches in Malawi); Local NGO (Kusamala)	Nordic Climate Facility Funding; Other (to be identified)	15,000 households
<b>Mountain Biodiversity Increases Livelihood Security (MOBI+LISE)</b>	Forestry/ Agriculture/ Energy	2010-2013	Mulanje and Phalombe	International NGO (Concern Universal); Local Environmental Trust (Mount Mulanje Conservation Trust); Local NGO (Wildlife and Environmental Society of Malawi – WESM)	USAID grant	53,995 households
<b>Trees of Hope</b>	Forestry/ Agriculture/ Energy	2007-	Rural (Dowa and Neno Districts)	International NGO (Clinton Development Initiative); Local Government (Dowa and Neno District Agricultural Development Offices); Local Government (Dowa and Neno District Forestry Offices); National Government (Department of Environmental Affairs); International NGO (Energy for Sustainable Development in Africa)	Clinton Development Initiative Grant/ carbon finance (Plan Vivo)	1,148 smallholder farmers and their households





Project name	Sectoral focus	Duration	Location type (place)	Implementing Partner Type (name)	Funding source(s)	Community beneficiaries
<b>Environment and National Resources Management Project</b>	2011-2016	2011-2016	Malombe, Liwonde, Nkula, Tedzani, Kapichira, Balaka, Ntcheu, Mwanza, Blantyre	Government Corporation (ESCOM); National Government (Ministry of Energy and Department of Fisheries); Supranational Governance Organisation (World Bank); Donor Agency (JICA); Supranational Governance Organisation (UNDP); Supranational Governance Organisation (EU); Local NGOs (Tbc); Government Corporations (Blantyre water board, Southern	US Government and Millennium Challenge Corporation grants	Tbc
<b>Improved crop productivity and soil fertility management programme</b>	Forestry/ Agriculture/ Energy	2012-2014	Mzimba, Dedza, Thyolo households	Research Organisation (ICRAF); Local Government (Mzimba, Dedza and Thyolo District Councils and District Agricultural Offices)	Irish Aid grant	200,000 smallholder farmers and their
<b>Lake Chilwa Adaptation Project</b>	Forestry/ Agriculture/ Energy	2011-2014	Machinga, Phalombe and Zomba	International NGO (LEAD); International Research Organisation (WorldFish); Local Research Organisation (FRIM);	Norwegian Government grant	300,000 households
<b>Majete REDD+</b>	Forestry	2003-2028	Majete	African Parks (Regional NGO); Cirrus Group (Consultancy)	Private donations + voluntary carbon market	Tbc
<b>Promoting conservation agriculture in smallholder farming systems</b>	Agriculture	2008-2014	21 Districts (details tbc)	Local NGO (NASFAM)	Irish Aid grant	Tbc
<b>Shire River Basin Management Project</b>	Forestry/ Water Management	2012-2025	Mangochi, Machinga, Zomba, Blantyre, Neno, Ntcheu, Chikwawa, Nsanje	National Government (Ministry of Water Development and Irrigation with assistance from various other participating Departments)	World Bank grant	20,000 households



Project name	Sectoral focus	Duration	Location type (place)	Implementing Partner Type (name)	Funding source(s)	Community beneficiaries
<b>Sustainable Energy Management (SEM) Support to Malawi</b>	Energy	2013-2016	Karonga, Salima, Nkhota-kota, Rumphu, Nkhata-bay, Mangochi, Dedza, Ntcheu, Balaka, Zomba, Phalombe, Machinga, Blantyre, Chikhwawa, Nsanje	National Government (Ministry of Energy and Department of Energy Affairs)	UNDP grant	Tbc
<b>UNDP Sustainable Land Management in the Shire River Basin</b>	Forestry/ Agriculture	2012-2016	Balaka, Blantyre, Mwanza and Neno	Supranational Governance Organisation (UNDP); CEDRISA; NAREC; WWF; MIOMBO Network; CURE; Various NGOs, Government Departments, Academic organisations also involved	GEF funding (\$25000) + plans for 2 CDM projects	Tbc

**Further initiatives include:**

- Clinton and Dutch government funded Climate Smart Agriculture Initiative Anchor Farm Project <https://www.clintonfoundation.org/our-work/clinton-development-initiative/programs/anchor-farm-project>
- <https://www.clintonfoundation.org/blog/2014/04/23/four-questions-about-climate-smart-agriculture-malawi>
- <http://reliefweb.int/report/malawi/government-netherlands-and-clinton-foundation-partner-implement-climate-smart>
- FAO Climate Smart Agriculture Policy and Climate Finance in Malawi (and Zambia and Vietnam) <http://eldis.org/go/home&id=66714&type=Document#.U-uctU10zSU>
- Solar irrigation schemes in Malawi, Nordic Development Fund <http://www.ndf.fi/project/ncf-mainstreaming-climate-smart-agriculture-solar-irrigation-schemes-sustainable-local>
- CSA project for 1,500 farmers funded by Scottish government <http://www.kusamala.org/projects-partners/climate-smart-agriculture/>
- IFAD purely poverty smallholder agriculture projects (not CC) <http://www.ifad.org/operations/projects/regions/Pf/factsheets/malawi.pdf>





## Annex 2 DPP Government Manifesto on Agriculture – Summary Points

“Our collective vision is **our country transformed from being a predominantly importing and consuming country to a predominantly producing and exporting country**; and a **food self-sufficient country** where hunger is eliminated, and our agricultural primary commodities, other raw materials and minerals **transformed**, in the process creating jobs and new wealth for our people”. (DPP Manifesto 2014, p. 13)

Two Key pillars (amongst others):

- Diversify from primary agriculture to double exports in 5 years from tobacco primary production as mainstay of export economy to include tobacco processing, cotton investment and processing, sugar processing, tea industry, paprika, legumes
- Food security as priority; sustain fertilizer subsidy for all maize subsistence farmers

Specific objectives include:

- Support viable agro-processing industries
- National food security programme increasing food production, storage and distribution
- Retain food reserves
- Fertiliser Input Subsidy Programme anti-corruption subsidies
- Agricultural extension, livestock production, research
- Marketing agricultural produce
- Nutritional diversification
- Remove tax on staple foods
- Credit cooperatives
- Horticulture farming
- Fish farming
- Livestock breeding and multiplication
- Irrigation for 20km inland from Lake Malawi rice for export and food
- Extensive irrigation to reduce dependence on rain fed agriculture