



**NATIONAL CLIMATE CHANGE RESPONSE**

**DRAFT WHITE PAPER**

**MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE MANAGEMENT**

**ENVIRONMENTAL AFFAIRS DEPARTMENT**

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	4
LIST OF ABBREVIATIONS AND ACROYNMS .....	5
EXECUTIVE SUMMARY .....	7
1.0 INTRODUCTION .....	9
2.0 NATIONAL CLIMATE CHANGE RESPONSE IN THE GLOBAL AND NATIONAL POLICY CONTEXT .....	11
2.1 Global Policy Context and legal obligations .....	11
2.2 National Policy Context .....	13
3.0 NATIONAL CLIMATE CHANGE RESPONSE OBJECTIVES AND PRINCIPLES .....	15
3.1 Response Objectives .....	16
3.2 Principles .....	16
4.0 NATIONAL CLIMATE CHANGE RESPONSE STRATEGY.....	17
4.1 Overall Approach.....	18
4.2 Strategic Priorities .....	19
5.0 ADAPTATION .....	20
5.1 Overall approach .....	20
5.2 Agriculture and Food Security.....	22
5.3 Human Health .....	23
5.4 Energy.....	24
5.5 Biodiversity and ecosystems .....	25
5.6 Forestry .....	26
6.0 MITIGATION .....	27
7.0 CAPACITY BUILDING EDUCATION AND AWARENESS.....	28
8.0 POPULATION AND HUMAN SETTLEMENTS.....	30
9.0 RESEARCH AND SYSTEMATIC OBSERVATION.....	30
9.1 Overall Objective .....	31
10.0 MAINSTREAMING CLIMATE CHANGE RESPONSE IN NATIONAL DEVELOPMENT .....	33

11.0 INSTITUTIONAL FRAMEWORK FOR CLIMATE CHANGE MANAGEMENT.....	34
12.0 RESOURCE MOBILISATION .....	38
13.0 JOB CREATION.....	39
14.0 MONITORING AND EVALUATION.....	39
15.0 CONCLUSION.....	40
16.0 REFERENCES.....	41

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## LIST OF ABBREVIATIONS AND ACROYNMS

AES	Alternative Energy Sources
AFIDEP	African Institute for Development Policy
AFOLU	Agriculture Forestry and Other Land Use
CARLA	Climate Adaptation for Rural Livelihoods in Agriculture
CDM	Clean Development Mechanism
CEPA	Center for Environmental Policy and Advocacy
CH4	Methane
CNA	Capacity Needs Assessment
CO2	Carbon Dioxide
COP	Conference of Parties
COVAMS	Community Vitalisation and Afforestation in Middle Shire
DCCMS	Department of Climate Change and Meteorological Services
EAD	Environmental Affairs Department
FOREP	Forest Replanting and Tree Nursery Project
GBI	Green Belt Initiative
GHG	Greenhouse Gas
GOM	Government of Malawi
IFMSL	Improved Forestry Management for Sustainable Livelihoods
INC	Initial National Communication
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
LEAD	Leadership for Environment and Development
MAREP	Malawi Rural Electrification Programme
MDG	Millennium Development Goal
MGDS	Malawi Growth and Development Strategy
MNCCP	Malawi National Climate Change Policy
MNCCP	Malawi National Climate Change Policy
N2O	Nitrous Oxide
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plans
NAPA	National Adaptation Programmes of Action
NCSA	National Capacity Self-Assessment
NEP	National Environmental Policy
NGO	Non-Governmental Organizations
PAI	Population Action International
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SNC	Second National Communication
SWAp	Sector Wide Approach
TCCC	Technical Committee on Climate Change
TPMCSOES	Tree Planting and Management for Carbon Sequestration and Other Ecosystem Services
UNCED	United Nations Conference on Environment and Development
UNDAF	United Nations Development Framework
UNEP	United Nations Environment Programmes
UNFCCC	United Nations Framework Convention on Climate Change

UNIMA	University of Malawi
USCP	United States Country Programme

## EXECUTIVE SUMMARY

Rapid Climate change is scientifically acknowledged as a measurable reality. The impacts of climate change are already being felt in Malawi, which along with other developing countries, is especially vulnerable to its impacts. This White Paper presents the Malawian Government's vision for an effective climate change response that addresses the needs of its people, especially the poor and disadvantaged, through the development of an economy, a population and an environment that is resilient to climate change and promotes low carbon growth. Malawi's response to climate change has three objectives:

- Effectively manage the impacts of climate change through interventions that build and sustain the social and ecological resilience of Malawians; and
- Contribute towards the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate system within a timeframe that enables social, economic and environmental development to proceed in a sustainable manner;
- Integrate cross-cutting issues including climate financing, capacity building, research and technology, population, gender, HIV and AIDS through an appropriate institutional framework.

Malawi Constitution, the United Nations Framework Convention on Climate Change and the Kyoto Protocol have been used to extract guiding principles for this policy. These principles as detailed in section 3.2 are: Protection of Human Rights and Freedoms, Common but differentiated responsibilities and respective capabilities, Gender Equality, Sustainable Development, Equitable development, Polluter pays principle, Precautionary principle, Informed participation, Intra- and Inter-generational sustainability, Uplifting the poor and vulnerable, Special needs and circumstances, Economic and, social and ecological pillars of sustainable development.

The overall strategic approach for Malawi's climate change response is to be: (i) equitable and meets the needs of Malawi; (ii) developmental; transformational, empowering and participatory; (iii) evidence-based; balanced and cost effective; (iv) integrated and aligned; and (v) well communicated and explained. Section 4 provides details on the elements of the response.

Subsequent sections deal with Adaptation (section 5), Mitigation (section 6) and critical operational elements that need to be in place to ensure a coherent policy, namely capacity building, education and awareness (section 7), population and human settlements (section 8), research and systematic observation (section 9); mainstreaming climate change within development (section 10), institutional framework (section 11), resource mobilization (section 12), job creation (section 13) and monitoring and evaluation (section 14).

Malawi Government realizes as a matter of urgency that it must adapt to and mitigate the impacts of climate change. For this, the country must harmonize efforts in all sectors and

make strong commitments of action. The adoption of a national climate change policy will be the right step for Malawi towards compliance with its international obligations. This is also beneficial to Malawi as it provides an opportunity for cooperation in scientific, technological, technical, and socio-economic programmes at regional and international levels. Malawi needs to ensure that the policy it adopts is well aligned with its specific national development priorities. This is especially so considering that the UNFCCC and the Kyoto Protocol recognize the fact that measures to combat climate change should minimize adverse impacts on the poorest countries and the most vulnerable sectors of society. Climate change poses challenges to Malawi, but also opportunities which will require the country to adopt adaptation and mitigation measures to ensure that its populations and the environment are managed sustainably. It is in this context that Malawi has developed the Climate Change Policy.



## 1.0 INTRODUCTION

This white paper and its associated draft policy have been prepared in response to the increasing impacts that climate change is having on Malawi's ecology and society.

Climate change is a long term shift in weather conditions, persisting for an extended period, typically decades or longer. It is well documented that the earth is currently undergoing a long term increase in temperature, so-called global warming. It is further well documented that this is in large part due to the increased emission of so-called 'greenhouse gases', which in turn is a result of human activity. These gases intensify a natural phenomenon called the 'greenhouse effect' by forming an insulating layer in the atmosphere that reduces the amount of the sun's heat that radiates back into space and therefore has the effect of making the earth warmer (IPCC 2007).

Greenhouse gases notably include carbon dioxide, which is a by-product of the burning of fossil fuels such as coal, oil, petrol and natural gas. The burning of these fuels has been responsible for most of the energy required for global economic development since the industrial revolution of the mid-19<sup>th</sup> century. As economic development and industrial growth has expanded across the globe in recent decades, together with a significant increase in population and energy use, so the rate of greenhouse gas emissions has increased, with a consequent increase in global temperatures.

A number of natural phenomena also release carbon dioxide and other greenhouse gases into the atmosphere, but an equilibrium is maintained as there are natural processes for absorbing them, so-called 'carbon sinks'. Among the most significant of these are forests and other vegetation, which absorb carbon dioxide in order to grow. Large bodies of water, such as freshwater lakes, can also act as carbon sinks. The global challenge is that the recent significant increase of greenhouse gases due to human activity has thrown this system out of equilibrium and into rapid global warming, with an attendant variability and frequency of intense weather systems,

Evidence of rapid climate change, including more frequent and intense weather systems and greater climate variability, has already been observed and includes:

- increases in the average global temperature; with the past decade being the hottest on record
- rises in the average global sea level due to melting of the polar ice caps
- changes in average rainfall patterns, with some regions experiencing higher rainfall (e.g. Northern Europe, Eastern North America and Eastern South America, North and

Central Asia) and other areas experiencing drying (e.g. the Sahel and southern Africa, the Mediterranean and parts of South Asia)

- increase in extreme weather events such as tornadoes, hurricanes and cyclones
- increased frequency of heavy rainfall and floods
- more intense and longer droughts, particularly in the tropics and subtropics.

In addition to the production of greenhouse gases, human activity, such as forest clearing and unsustainable agricultural practices, can also limit the earth's ability to absorb greenhouse gases, further exacerbating global warming.

The rate of change to the earth's climate is exceeding the ability of all types of ecosystems to adapt as well as compromising their ability to function as they have in the past. Ecosystems provide important services to society, such as the formation of soil; the provision of food, fresh water, wood, fibre and fuel; the regulation of climate, floods and the spread of disease; protection from storm surges and floods; and a range of cultural, spiritual, educational and recreational services. The protection of biodiversity, habitats and ecosystems is essential to the maintenance of these services, which is a key pillar for sustainable development. The challenge to achieve this and in an equitable manner is exacerbated by the high poverty levels in Malawi and the dependence by much of the population on subsistence agriculture.

Many of Malawi's ecosystems, like those of other developing countries, are proving vulnerable to climate change and associated human activities and this has manifested itself most alarmingly by an increase in both natural and man-made disasters. Over the last four decades, the number and the impact of both natural and man-made disasters have significantly increased. Disaster situations impact intensely on poor people as they have the least capacity to cope and recover from the effects of such disasters, and do not have adequate security and protection in order to defend their rights to a dignified life. Access to basic needs, such as food, water, shelter and health services is often denied and livelihoods are destroyed. Disasters are often associated with disease outbreaks and epidemics that further hit the poor the hardest. Some groups are more vulnerable than others, especially when stratified by gender, ethnicity or disability. For example, women and girls are affected differently than men, and have different recovery patterns. It is women, girls and children who are in many cases denied opportunities and basic rights, often having less access to any available assistance.

At country level, studies undertaken by Department of Climate Change and Meteorological Services (DCCMS) show increase in long-term temperature for the country as a whole, changes in long-term rainfall patterns and an increase in extreme weather events and a noticeable shift in climate patterns in some areas, with a marked increase in intensity since the 1980s. This has had devastating effects on the national economy and development sectors including water, biodiversity and agriculture. The Government of Malawi (GoM)

through its Second National Communication to the United Framework Convention on Climate Change (UNFCCC) confirmed that Malawi is faced with climate change related impacts (GoM 2011). In Malawi Climate Change is known as “Kusinta wa Kunyengo” in the local language, which translates into “Changing of times”. Over time, climate change and climate variability have changed the livelihoods of many in rural and urban Malawi.

Communities in Malawi are highly vulnerable to different climate risks including flooding, shorter rain periods, dry spells, unpredictable onset of rainfall, drought, strong winds and hail storms. Major impacts of these risks on agricultural production include crops drying before maturity; crop damage (due to floods), soil degradation (soil erosion, loss of soil fertility, siltation of fields), shortage of water, loss of land, destruction of infrastructures (roads, bridges, houses), challenges to pest and weed management, reduction in yield and consequently food insecurity. The unreliable rainfall pattern is increasingly putting viability of upland field cultivation at risk, with most of agricultural activities being undertaken within fragile ecosystems. Farmers and experts alike face difficult decisions of what and when to plant as a result of uncertain onset of rain and seasonal spread.

The Government of Malawi recognises the significance of climate change through this policy it aims to address the particular challenges facing Malawi, given the vulnerability of its ecosystems and its population, especially the poor and disadvantaged, to the adverse impacts of climate change. It seeks through the policy to better coordinate its approach to climate change across different ministries and sectors and to better integrate adaptation and mitigation to climate change into its growth and development strategy, for the benefit of its people.

## **2.0 NATIONAL CLIMATE CHANGE RESPONSE IN THE GLOBAL AND NATIONAL POLICY CONTEXT**

### **2.1 Global Policy Context and legal obligations**

Malawi is party to various international treaties and instruments which oblige her to develop climate change policies and legislation. Key among these treaties is the United Nations Framework Convention on Climate Change (UNFCCC) which arguably represents a key global legal response to the problem of climate change. Malawi also acceded to the Kyoto Protocol to the UNFCCC on 26<sup>th</sup> October 2001 and the Protocol came into force on 16<sup>th</sup> February 2005. Apart from setting “an overall framework for intergovernmental efforts to tackle the challenge posed by climate change,” the UNFCCC provides the basis for concerted international action to mitigate climate change and to adapt to its impacts.

Article 3 of the Convention contains a number of principles that guide state parties when implementing the provisions of the Convention. These include sustainable development,

equity, common and differentiated responsibilities and cost effectiveness. The article also contains the precautionary principle and the principle of cost effectiveness.

Malawi signed the UNFCCC on 10<sup>th</sup> June 1992 and ratified the same on 21<sup>st</sup> April 1994. The Convention entered into force on 20<sup>th</sup> July 1994. As a party to the UNFCCC, Malawi is obliged to fulfil, to the fullest extent possible, its commitments under the Convention pursuant to the provision of financial resources. To this end, the Government of Malawi has repeatedly expressed its commitment to meeting the goals of the Convention. Specifically, the government has expressed its commitment to limit global greenhouse gas emissions and address the impacts of Climate Change. However, given its minimal contribution to global climate change, limited capacity to reduce emissions, and its vulnerability to the impacts of Climate Change, Malawi must place emphasis on adapting to global Climate Change.

Despite this understanding, African countries are beginning to reconsider that adaptation should go hand in hand with mitigation, tapping on the latter as a measure for achieving a low carbon sustainable development. Moreover, countries like Malawi could gain from the spill-over effects of climate change mitigation such those associated with Clean Development Mechanisms (CDM) and Carbon Financing Initiatives.

The Kyoto Protocol to the UNFCCC was adopted on 11<sup>th</sup> December 1997 and came into force on 16<sup>th</sup> February 2005. The Protocol commits developed countries to quantified emission reduction targets and a timetable for their achievement. Article 3 commits these parties to ensure that their “aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts.” The ultimate objective was to reduce their “overall emissions of greenhouse gases by at least 5 percent below 1990 levels” between 2008 and 2012, which was the protocol’s first commitment period.

Under the provisions of Articles 4, 5, 6 and 12 of the UNFCCC as well as Article 10 of the Kyoto Protocol, Malawi already has existing international legally binding obligations to:

- Formulate, implement, publish and regularly update policies, measures and programmes to mitigate its emission of GHGs and adapt to the adverse effects of inevitable climate change;
- Monitor and periodically report to the international community the country's GHG inventory; steps taken and envisaged to implement the UNFCCC; and any other information relevant to the achievement of the objective of the UNFCCC, including information relevant for the calculation of global emission trends;
- Sustainably manage, conserve and enhance GHG sinks and reservoirs, including terrestrial and marine ecosystems, biomass and forests;
- Develop climate change response plans to address integrated water resources, agriculture, and land protection and rehabilitation;

- Mainstream climate change considerations into social, economic and environmental policy;
- Promote and cooperate in the development, application, diffusion and transfer of GHG emission mitigation technologies, practices and processes;
- Further develop and support research and systematic observation organizations, networks and programmes as well as efforts to strengthen systematic observation, research and technical capacities, including promoting research and systematic observation in areas beyond national jurisdiction; and
- Develop and implement education, training and public awareness programmes on climate change and its effects to promote and facilitate scientific, technical and managerial skills as well as public access to information, public awareness of and participation in addressing climate change.

Related to the UNFCCC, is the United Nations Convention to Combat Desertification (UNCCD), which Malawi signed in 1992. The objective of the UNCCD is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective actions at all levels. Achieving this objective will involve long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the local level.

The adoption of a national climate change policy will thus be the right step for Malawi towards compliance with its international obligations. This is also beneficial to Malawi as it provides an opportunity for cooperation in scientific, technological, technical, and socio-economic programmes at regional and international levels. The policy seeks to identify the specific policies and strategies Malawi should adopt in the light of the principle of common but differentiated responsibilities and given that Malawi does not significantly contribute to GHG emissions globally. Similarly, Malawi needs to ensure that the policy it adopts is well aligned with its national development priorities. This is especially so considering that the UNFCCC and the Kyoto Protocol recognize the fact that measures to combat climate change should minimize adverse impacts on the poorest countries and the most vulnerable sectors of society.

## **2.2 National Policy Context**

The Government of Malawi has already taken several country-specific steps to address climate change in response to its international obligations

- The development of Climate Change Investment Plan whose overall goal is to address the current and potential adverse impacts of climate change and extreme weather events. The proposed investment areas have been categorized into four

thematic areas and these include Capacity Development and Institutional Strengthening, Adaptation, Mitigation and Carbon financing. The Investment Plan, when finalized, will be used to solicit financial and technical support from Development Partners, bilateral and multilateral agencies.

- A review of its National Adaptation Programmes of Action (NAPA) that was developed in 2005, develop a National Adaptation Plans (NAPs) and Nationally Appropriate Mitigation Actions (NAMAs).
- Addendum on Climate change developed in 2008 to the Malawi Growth and Development Strategy (MGDSII)
- Establishing the Green Belt Initiative (GBI) - Government has embarked on an initiative to utilize water from lakes and perennial rivers to enhance the country's production of a variety of crops, livestock and fisheries. The purpose is to bring food security to the nation and compliment other programmes to bring development to the rural areas.
- Establishing a National Framework for Managing Climate Change in Malawi.
- Implementation of the Climate Adaptation for Rural Livelihoods and Agriculture (CARLA) Project aimed at supporting rural communities with strategies and technologies to cope with adverse effects of climate change
- Establishing an inventory of on-going and planned Climate change- related activities in Malawi.
- Implementing a Sustainable Land Management programmes in the Middle Shire – designed to promote soil and water conservation and reduce climate-related impacts
- Establishing the Small Grants Programme designed to promote sustainable livelihood practices
- Formulating, implementing, publishing and regularly update policies, strategies and programmes that aim to promote adaptation and mitigate its emission of GHGs
- Developing climate change response plans to address integrated resource utilization and management

The above elements all require coordination and integration within an overarching policy and strategy. Furthermore, knowing that climate change is a cross cutting issue it is imperative that all key sectors of the economy evaluate impacts of climate change and develop strategies towards adaptation and mitigation. This policy will provide the framework that will guide the integration for key policies and laws in addressing climate change related impacts. In particular, attention will be on policies dealing with disaster risk management, agriculture and food security, natural resource, environment, population, waste, transport, industry and other sectors.

Malawi has several legal and policy frameworks that are directly or indirectly dealing with climate change, economic development environment and natural resources. These include:

- The National Environmental Policy (2004)
- National Forestry Policy (1996)
- Wildlife Policy (2000)
- National Energy Policy (2003)
- National Water Policy (2005)
- National Land Policy (2002)
- National Land Resource Management Policy and Strategies (2000)
- Mines and Minerals Policy (2007)
- National Fisheries and Aquaculture Policy (2001)
- Food Security Policy (2006)
- Draft National Agricultural Policy
- Environmental Management Act (2006)
- Disaster Preparedness and Relief Act (1991)
- The National Parks and Wildlife Act (2004)
- The Road Traffic Act (1997)
- Water Resources Act (1969)
- Mines and Minerals Act (1981)
- Energy Regulation Act (2004)
- The Local Government Act (1998)
- Forestry Act (1997)
- The Fisheries Conservation and Management Act (1997).

In particular, the policy will build on the National Environmental Policy (NEP) that deals with issues of air quality, reduction of green house gas emissions and supplement several guiding principles in the policy. It will compliment other policies such as those of energy, water, agriculture and forestry that are relevant in climate change issues.

The Climate Change Policy will serve as an overarching reference document for policy makers in Government, the private sector, civil society, and donors concerning climate change as a priority development issue. It will feed into the Sector Wide Approaches (SWAs) to inform strategic government programming, including in relation to the MDGs. It will also support broader guiding legislation, policies and strategies, such as the constitution of the Government of Malawi, Vision 2020, the Malawi Growth Development Strategy and United Nations Development framework for Malawi (UNDAF).

### **3.0 NATIONAL CLIMATE CHANGE RESPONSE OBJECTIVES AND PRINCIPLES**

### 3.1 Response Objectives

Malawi will seek to effectively enhance and build the climate resilience of the country, its people and the economy. This response will enable the country to address both regional and international obligations and commitments while at the same time addressing its overriding national development strategies and goals for sustainable development, aiming to reduce both urban and rural poverty while improving the social equality among Malawians. Thus its main objectives are to:

- Effectively manage the impacts of climate change through interventions that build and sustain the social and ecological resilience of Malawians; and
- Contribute towards the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate system within a timeframe that enables social, economic and environmental development to proceed in a sustainable manner;
- Integrate cross-cutting issues including climate financing, capacity building, research and technology, population, gender, HIV and AIDS through an appropriate institutional framework.

### 3.2 Principles

The policy would be guided by principles set out in the Malawi Constitution, the United Nations Framework Convention on Climate Change and the Kyoto Protocol. The principles among others will include:

**Protection of Human Rights and Freedoms:** The Constitution of Malawi affords protection of human rights and freedoms. Malawi's climate response strategy should therefore take a human rights approach,

**Common but differentiated responsibilities and respective capabilities** – aligning our domestic measures to reduce the country's GHG emissions and adapt to the adverse effects of climate change with our unique national circumstances, stage of development and capacity to act.

**Gender Equality:** This is a principle in the Constitution. Women are disproportionately affected by climate change and are more vulnerable to the impacts therefore; gender equality must be promoted as a response.

**Sustainable Development-** Malawi's development should help reduce poverty and improve living standards, while at the same time uphold the three pillars, social, economic and environment, of sustainable development;

**Equitable development:** No development would be sustainable in the long run if it does not address Poverty reduction and equity. Participation of vulnerable groups including the disabled has to be ensured.



**Polluter pays principle:** those who are responsible for polluting the environment should pay the cost of mitigating the effects and supporting consequent adaptive response

**Precautionary principle:** Malawi must take a cautious approach, taking into account limitations in knowledge, as decisions may have unintended consequences for the environment and economic development

**Informed participation:** public participation in developmental activities is essential and the general public must be aware of climate change causes and impacts and how they will effect development in Malawi

**Intra- and Inter-generational sustainability** – managing our ecological, social and economic resources and capital responsibly for current and future generations.

**Uplifting the poor and vulnerable** – climate change policies and measures should address the needs of the poor and vulnerable and ensure human dignity, whilst endeavouring to attain environmental, social and economic sustainability.

**Special needs and circumstances** – considering the special needs and circumstances of localities and people that are particularly vulnerable to the adverse effects of climate change, including vulnerable groups such as women, and especially poor and/or rural women; children, especially infants and child-headed families; the aged; the sick; and the physically challenged.

**Economic, social and ecological pillars of sustainable development** – recognising that a robust and sustainable economy and a healthy society depends on the services that well-functioning ecosystems provide, and that enhancing the sustainability of the economic, social and ecological services is an integral component of an effective and efficient climate change response.

#### **4.0 NATIONAL CLIMATE CHANGE RESPONSE STRATEGY**

The Government of Malawi will strive to respond to impacts of climate change through (i) mitigation by aiming at reducing the atmospheric concentrations of greenhouse gases (GHGs) and (ii) adaptation through responding to the adverse effects of climate change. Several response measures will be put in place that will facilitate the management of unintended negative outcomes of climate change policies and measures. The country response to climate change effects will require economic, social, environmental interventions that will integrate mitigation and adaptation elements within a development framework.

The climate change response strategy will allow the country to manage, monitor and evaluate of measures taken by the country as well as being able to respond to both

anticipated and unanticipated events. The climate change response should be categorised in three time planning horizons to assist strategic planning, monitoring and evaluation, namely (i) short term- 5 years (ii) medium term- 10-20 years and (iii) long term- beyond 20 years. The strategic approach for Malawi is to put in place a strategy that will promote “climate resilient development’.

#### **4.1 Overall Approach**

The overall approach of the Government of Malawi is undertaking all interventions that will address both adaptation and mitigation to achieve social, environmental and economic resilience to the adverse effects of global climate change, while achieving economic growth and development in a sustainable manner. A strategic approach will be used that is:

- **Equitable and meets the needs of Malawi.** A wide range of approaches will be used to target adaptation to, and mitigation of, climate change taking into account critical cross-cutting issues. These will be aligned to the principles outlined in section 3.2. They will be undertaken in a manner that meets the needs of different sectors, communities and stakeholders involved, with a strong emphasis on addressing the needs of those communities and individuals most vulnerable to the negative impacts of climate change.
- **Developmental.** Malawi will promote interventions that have adaptation and mitigation benefits while also promoting sustainable economic growth through capacity building, job creation, improved public health, social security and poverty alleviation, combined with clean industrial development, effective agricultural practices, effective use of natural resources and sound environmental management. Climate change management will be integrated into national development plans.
- **Transformational, empowering and is participatory.** Actions will be promoted at a scale that enables a true transformation of Malawian society towards climate change resilience through sustainable and clean development mechanisms that emphasise an awareness of the need to maintain ecosystem services and a low carbon economy. These actions will be undertaken through empowering and promoting the participation of all citizens and communities so that they can achieve improved and more sustainable livelihoods through actions and behaviour that increase their resilience to climate change, including improved early warning and disaster management
- **Evidence-based.** Policy and action will be informed by best evidence and practice, mindful of the precautionary principle. Malawi will also seek to enhance its capacity base in climate change knowledge and research and enhance its national data base relevant to climate change through an improved national strategic observation network. Malawi will advocate for further research and consultancy to develop and demonstrate the detail of additional policies and measures consistent with the provisions of this policy, for implementation in the short-, medium- and longer-term, as and when ready; Extensive monitoring and evaluation will be undertaken on

implementation measures and programmes to improve them through adjustments or, if necessary, to discard those that are ineffective.

- **Balanced and cost effective.** A balanced approach will be taken that addresses both adaptation and mitigation responses, while taking fully into account critical cross-cutting issues. This approach will be mindful of the need to (i) ensure good cost benefit; (ii) to prioritise interventions and focus efforts to achieve desired outputs and outcomes; and (iii) to ensure appropriate resource allocations are adequate and feasible.
- **Integrated and aligned.** There are many different elements within the climate change policy and many stakeholders in the public, private and civil society sectors. Climate change is cross-cutting in nature and both impacts on, and is dependent on, the activities of multiple developmental sectors. It is therefore critical that climate change policy is integrated into, and aligned with, all relevant policies, legislation and strategies and that there is strong interaction between all stakeholders at national and district levels of implementation. This requires a good institutional framework
- **Well Communicated and explained.** There is a need for strong communication and education to bring about coherence and alignment across stakeholders. Information and messages must be clear and consistent, especially at community level, where participatory approaches are critical to the successful implementation of adaptation and mitigation approaches and where local people, especially the poor and disadvantaged, are the ultimate beneficiaries of this policy

## 4.2 Strategic Priorities

Government of Malawi has outlined the following priorities:

- Integrating climate change, natural resources and environment management issues into national and sectoral development plans and policies (i.e. agriculture sector, water sector, energy, public health, fisheries, wildlife, forestry and others);
- Limiting the emission of greenhouse gases and enhancing carbon capture through appropriate forest management and cultivation;
- Improved forest management
- Conducting public awareness campaigns on climate change and the environment;
- Strengthening institutional capacity for climate change, natural resources and environmental management, including at local level;
- Strengthening and harmonizing the policy and regulatory framework for climate change, natural resources and environment management;
- Supporting community preparedness and adaptation measures to address climate change and build local and national resilience
- Promoting better early warning and disaster management and emergency response in all prone areas;
- Promoting production and marketing of alternative renewable energy technologies and development of low carbon development pathways

- Intensifying measures to monitor the weather trends and early warning systems of adverse climatic changes;
- Improving the capacity for adaptation and mitigation actions to the impacts of global climate change including full implementation of NAPAs, NAPs and NAMAs;
- Appropriate land management, including its ownership and leasing, to promote sustainable use and sustainable economic development
- Intensifying development of research and adoption of new technologies and practices to enhance the resistance of certain crops and animal breeds to the impacts of climate change.

## 5.0 ADAPTATION

### 5.1 Overall approach

Africa is often identified as the continent most vulnerable to climate change impacts because of its resource constraints (UNDP, 2007). Within Africa, financial resources to adapt to and militate against the impacts of climate change vary from country to country. For instance, Malawi is one some of the most resource-poor countries in Africa and are therefore highly vulnerable to the impacts of climate change. Apart from being resource poor, an understanding of climate change issues appears to be limited in Malawi. Resource and knowledge constraints are the two major barriers that frustrate efforts to integrate climate change issues in national development plans (UNDP, 2008).

Malawi experiences frequent episodes of droughts, floods, dry spells strong winds thunderstorms, landslides, hailstorms, mudslides and heat waves. These episodes impact negatively on key sectors of agriculture, energy, forestry, fisheries, wildlife, water, gender, health and education. Recognizing the impacts of climate change highlighted above and also the decision adopted at the 7<sup>th</sup> Conference of Parties of the UNFCCC in Marrakesh, Morocco in 2007, Malawi developed the National Adaptation Programmes of Action (NAPA) in 2006 to meet the following objectives:

- To identify a list of priority activities
- To formulate priority adaptation options
- To build capacity for adapting to longer-term climate change and variability
- To raise public awareness on the urgency to adapt to the adverse effects of existing weather events.

The MNCCP will use the NAPA (under review) as the platform for the adaptation strategy especially that it was developed through nation-wide consultations with inputs from the public and private sector organizations, including local leaders, religious and faith groups, academicians, non-governmental organizations, and civil society organizations. The objective of these consultations was to identify the relative vulnerability of key economic sectors in Malawi and also to inventorize adaptation needs. In total, thirty-one adaptation

options were identified from the eight sectors of agriculture, water, fisheries, wildlife, energy, gender, health and forestry to address urgent adaptation needs, with emphasis on vulnerable rural communities of Malawi.

Objectives of the adaptation to climate change are to make sure that the nation is able to adjust to several changes as result of climate change. Malawi will then develop adaptation responses that will address both short and long term development goals. The responses will have a much stronger specific local autonomous adaptation context that will promote conservation of natural resources, improvement of food security and rural livelihoods, creation of jobs (Green jobs) and addressing other challenges such as rural-urban migration.

The adaptation strategy will further improve community resilience through catchment management, forest restoration, infrastructure development to reduce flooding, siltation and property loss while improving agricultural production under erratic rains. The adaptation strategy will aim to allow the nation improve its preparedness to cope with episodes of drought and floods, understand long term climate projection that define the range of future climate conditions, while improving climatic monitoring to enhance early warning capabilities and decision making towards sustainable utilization of water and land resources. The adaptation response will be embedded into the national development goals to achieve both MDGs and MGDS.

The MNCCP will strive to address policy-driven adaptation and autonomous locally driven adaptation especially in the ways in which these play out in the context of environmental changes more broadly. The policy will address the complexity of adaptation across levels and scales such that appropriate adaptation is to be supported over long term. The adaptation will aim to reduce risks in both short and long term thereby reducing exposure of both humans and natural resources to climate change related risks. Within the adaptation response, Malawi will make sure that adaptation is reinforced by research, capacity development, and technology development, and to respond to the needs of disaster risk reduction in the short-term, and integrated resource and development planning in the medium- and long-term. The policy will build on what government departments and development partners are already implementing especially those that aim to create jobs, protecting and supporting vulnerable groups. The policy will further facilitate mainstreaming of several adaptation responses into sectoral plans. The identified adaptation strategies and key priority areas will be integrated into key sectors and plans including National Water Development Program, Health Sector Strategic Plan, National Education Sector Plan, Disaster Risk Reduction Plans, Poverty Reduction Strategy, National Biodiversity Strategy and Action Plan, Urban Planning and Agriculture Sector Wide Approach. Finally, the adaptation response will promote bottom-up approaches that will promote participation of all groups of people including local communities and local traditional structures.

## 5.2 Agriculture and Food Security

Agriculture is the main source of income and food for Malawi; more than 80 percent of rural Malawians being self employed in the sector. The sector contributes over 38.6 percent of the country's GDP (GoM, 2006; World Bank, 2006b). In Malawi, droughts and floods are the two major weather extremes impacting most negatively on agriculture. In Malawi, the worst cases of floods and droughts occur in Chikhwawa and Nsanje to the extent that in 2008 alone, about 7,000 hectares of crops were damaged (Anonymous, 2008). The number of farmers affected by floods and droughts has increased between the years 1970 and 2006 (Action Aid, 2006). Furthermore, 45 percent of Malawian farmers were affected by drought between 1999 and 2000 (Makoka, 2009). Indeed, a study by the World Bank (2006b) showed that the 2004/2005 drought reduced the food staple harvest to only 37 percent of the country's total food requirement.

In economic terms, Malawi loses millions of US\$ due to droughts and floods. As indicated by Dankova *et al.*, (2010), average annual loss for maize was US15Million but maximum annual loss can be up to US190 Million. Currently, other agricultural related policies such as National Land Resources Management Policy (2000) and Food Security Policy (2006) do not explicitly address climate change issues.

To guide strategies and actions to address climate change, Malawi has drafted a national agricultural policy. The policy strives to:

- Recognize that enhancing the resilience of the country's agricultural sector is critical to increasing the country's prospects of achieving Millennium Development Goals
- Recognize that the link between climate change and agricultural production requires measures to adapt to climate change.
- Seek to promote adaptation and mitigation technologies and interventions to minimize future adverse effects of climate change on agricultural production and rural livelihoods.
- Encourage vulnerability assessments to provide early-warning on food security
- Promote development of community based storage systems for seed and food
- Provide for improvement crop and livestock production through the use of appropriate technologies

In order for Malawi to build resilience to climate change and reduce any negative impacts that climate change might have on agriculture or agriculture could contribute to climate the priorities for agriculture are:

- Integrate agriculture into climate-resilient rural development planning to address job creation, food security and livelihoods with a particular emphasis on building climate resilience through leveraging synergies between adaptation and mitigation

- Based on scientific evidence through vulnerability studies and assessments, develop short and long term adaptation scenarios to identify climate –resilient land uses and promote climate change agriculture
- Improve integration of socio-economic and political participation and protect rights of vulnerable households as that is critical to securing resilient livelihoods outcomes
- Advance research and technology that will explore new crops and livestock breeds that will easily adapt to climate change and promote practices that will reduce impacts of climate change on existing potential agricultural systems.
- Increase investment in agriculture, in particular low-input, agro-ecological approaches, and rural development
- Develop and invest in rural based agricultural markets and provide timely information of agricultural related interventions to farmers including sources of inputs.
- Developing mechanism that will utilise early warning systems on adverse weather, pests and diseases occurrence. It will also provide up-to-date information and decision support tools to assess the vulnerability of farmers and inform farm management decisions.
- Promote and invest in education and awareness programmes for extension workers, farmers and rural communities in order to allow both small and commercial farmers understand, respond and adapt to challenges of climate change.
- Support research programmes into soil and water conservation, plant and animal breeding, livestock feeds and feeding, practices that lower emissions and those that will boost agricultural yields.
- Address inequitable access to resources (land and water) to improve climate resilience.

### **5.3 Human Health**

Climate change endangers human health, affecting all sectors of society. The human health sector is directly affected by climate change because environmental changes are directly responsible for changes in the prevalence of malnutrition, malaria, cholera and diarrhoea. Cholera and diarrhoea result from contaminated water supplies, a common result of flooding. Malaria is expected to spread to upland areas because of an increase in temperature that favours mosquitoes. The creation of dams associated with water management and irrigation schemes may also enhance the spread of schistosomiasis through water snails. Due to its negative impacts on agriculture, climate change can enhance problems of malnutrition. Good nutrition is especially critical for those suffering from HIV and AIDS.

Studies have shown that the prevalence of malnutrition is proportional to the deviation of annual rainfall from the mean. It is also reported that climate change may be associated with staple food shortages, malnutrition and food contamination.

Over the time, the country has witnessed increased incidences of health related challenges. This has impacted on the poor including those living in slum conditions where overcrowding and close proximity to domesticated animals promotes disease transmission. It is expected that the spread of vector borne diseases may spread due to climate change. This will require huge investment in the health sector. The disturbance of the environment due to several factors is also a contributing factor to health challenges in Malawi. Studies have also shown that there is a strong linkage between extreme weather events such as droughts and flooding and the incidences of water borne diseases and epidemics, notably cholera, especially in urban areas.

The Malawi government will integrate climate change considerations into the health sector plans to:

- Recognising that the nutritional status of individuals is key to building resilience to environmental health threats, ensure that food security and good nutritional policies for part of an integrated approach to health adaptation strategies.
- Put in place a national awareness campaign on health risks associated with changes in climate and weather variability
- Support research programmes that will strengthen information dissemination especially on the linkage between disease occurrence and climate change
- Develop and enhance a health data management support system to facilitate the delivery of health services nationally.
- Facilitate the review of education programmes and curriculum to incorporate issues of climate change and human health
- Strengthen awareness programmes on Cholera, Malaria and other diseases that are directly or indirectly linked to climate change.
- Support research that will examine the relationship between human development and adaptations to climate change such as agriculture changes that may affect food availability, increased use of pesticides and prevention of leaching from toxic waste.

#### **5.4 Energy**

In Malawi, 97% total primary energy supply is from biomass, out of which 59% is used in its primary form as firewood (52%) and residues (7%), while the remaining 41% are converted into charcoal (Kambewa and Chiwaula, 2010). Biomass energy mainly comes from charcoal and firewood, while hydropower is generated mainly from Shire and Wovwe Rivers. Hydropower, a clean alternative to biomass energy, has been seriously impacted by floods and droughts. Floods have disrupted water flows and contributed to the build-up of siltation, damaging hydro turbines. Droughts have reduced water levels, making minimum dam water levels difficult to maintain. In the Shire River, water hyacinth is also blamed for causing damage to hydro power generation by clogging the equipment. Alternative energy sources such as wind and solar contribute to a very small percentage in the energy mix of the country. It is to be noted that without alternatives, Malawians will continue to make



choices of using biomass for fuel and therefore a holistic approach is needed to ensure that populations can jump the energy ladder to more sustainable and cleaner sources of energy. This approach includes poverty reduction, education and making available sustainable sources of energy.

The Malawi Government will integrate climate change considerations into the energy sector through:

- Incentivising alternative energy sources such as wind and solar to reduce dependence on biomass
- Encouraging afforestation activities and non-extractive livelihoods from forests, which will also improve catchments for hydropower generation
- Promote energy efficient appliances to reduce energy demand and energy efficient stoves that would use less firewood
- Promote innovation in energy sector
- Enforce legislation against illegal charcoal making
- Promote payment for ecosystems services projects that would support protection of forests
- Encourage community based forest conservation
- Upscale briquette making and promote its use Policy
- Dis-incentivize use of firewood for making burnt bricks, through innovation and subsidy for environment friendly brick making.

### **5.5 Biodiversity and ecosystems**

Climate change is an emerging threat to both aquatic and terrestrial biodiversity. Studies by Mkanda (1996) and Kazembe (2009) suggest that the animal population decline is attributed to the interactive effects of poaching and climate change. Of the 5 ungulates that were studied by Mkanda (1996), nyala was found to be the most vulnerable to climate change. Records indicate that 100 nyala died in 1980 due to heat and inadequate food supply. Ecosystems are also under threat from climate change, for example, complete drying of Lake Chilwa in 1995 had catastrophic effects on the survival of fish species and fisheries (Njaya et al, 1996). Magadza (1991) and Kawasaki (1991) have indicated that man-induced global warming of the order of 0.5° C per decade, with estimates ranging between 0.1° C and 0.8° C, will adversely have serious impacts on wildlife and many types of natural ecosystems. (Magadza, 1991; Kawasaki, 1991). Kazembe (2009) argues that Malawi's protected areas are generally vulnerable to climate change.

Malawi derives many ecosystems services such as regulation functions and related ecosystem services (Climate regulation, water regulation, soil retention), habitat functions and related ecosystem services (Nursery function), production functions and related ecosystem goods and services (food, raw materials, medicinal resources) and information

functions and related ecosystem goods and services (Aesthetic information, Cultural and artistic inspiration , Spiritual and historic information , Scientific and educational information). In order to protect ecosystems services it is necessary to address the challenge of climate change.

The Malawi Government with therefore integrate climate change considerations in biodiversity and ecosystems management. This will be done through:

- Promotion of the sound management of ecosystems through the wider application of the Ecosystem Approach in programmes and projects
- Including biodiversity concerns in adaptation programmes, projects and plans
- Creating awareness that ecosystems have a role in moderating the global carbon cycle and therefore climate
- Supporting research to demonstrate the cost-benefit advantages of protecting ecosystems and biodiversity
- Highlighting the socio-economic and environmental advantages of adopting an ecosystems management approach
- Inventorise ecosystems services in order to track how anthropogenic activities are impacting them
- Conserve, rehabilitate and restore ecosystems as a means to provide resilience to climate change impacts
- Realisation that healthy, fully functional well managed and adequately protected ecosystems can achieve cost effective objectives for climate change mitigation, adaptation and long-term sustainability whilst continuing to provide the essential services.

## **5.6 Forestry**

Forestry resources are critical in supporting livelihoods through the provision of both wood and non-wood forest products such as fuel wood, poles, honey, fruits and mushrooms. Forests also regulate temperature and enhance precipitation. Official evidence indicates that forests are declining at a rate of 2.6 percent per annum, the major contributing factor being deforestation for cultivation and fuel wood purposes. According to NAPA (2006) the major climate hazard to forest is drought. Climate change is an emerging threat to forestry, as exemplified by a study conducted in Dzalanyama that looked at impacts of drought on forestry (GOM, 2004). According to this report, forest species composition is likely to change in favour of those plants that are adapted to drier conditions. Wood production is projected to decline by about 37 percent between 2020 and 2100, but drought could worsen the situation.

Forests act as carbon sinks and when they are reduced, carbon sinks are reduced, thereby putting Malawi on the map in terms of GHG net emission. Forestry Department is using an

outdated 1996 policy that has not thoroughly considered climate change issues (CEPA, 2011) and it fails to provide climate change adaptation measures for forest reserves.

Government of Malawi will integrate climate change into forestry sector through:

- Creating awareness about the climate regulation function of forests and thereby promoting conservation of forests
- Supporting rehabilitation of degraded industrial forest plantations
- Improving the livelihoods of local communities through the sustainable provision of forest goods and services and the development of forest-based enterprises
- Promoting tree planting and management for carbon sequestration and other ecosystem services
- Promoting REDD+ as a strategy for Malawi to mitigate against climate change
- Promoting research to preserve Malawi's indigenous, wild, endemic and/or economically important flowering plant for future use and biodiversity conservation
- Promoting agro forestry and a means of integrating poverty reduction into forest conservation and at the same time mitigating against climate change
- Promote alternative fuels to reduce dependence on firewood and charcoal thereby addressing deforestation
- Addressing the linkage between forestry sector and energy sector as majority of Malawians use biomass for fuel and tackling the deforestation issue in a holistic manner
- Improving ecosystem services from forests through better conservation and awareness
- Supporting valuation of forest ecosystem services including soil and water conservation, soil fertility enhancement and provisioning services.

## 6.0 MITIGATION

Mitigating the impacts of climate change has several benefits for Malawi including contribution to curb global emissions and reducing poverty through access to carbon market and management of development which is climate compatible. Mitigation will help Malawi's development to become more sustainable in socio-economic and environmental standings.

Malawi's ambitions to be a net exporter are a precursor to increasing industrial emissions of carbon dioxide and other greenhouse gases and justify an increased emphasis on mitigation. The country is already a net emitter of carbon dioxide mainly through fires, deforestation and farming and recognizes that it needs to respond to the call for a reduction on greenhouse emissions through International agreements under the UNFCCC and the Kyoto Protocol which Malawi ratified, although its emissions are far less than developed countries.

The most significant sector that emits is Agriculture, Forestry and Other Land Use (AFOLU). The Energy sector comes second and mostly accounts for combustion of and fugitive emissions from fossil based solid, liquid and gaseous fuels.

Since mid 1990s, Malawi has undertaken three major studies to inventorise its greenhouse gas (GHG) since the mid 1990s. The studies were undertaken as part of the United States Country Programme (USCP), Initial National Communication (INC) of Malawi and the current Second National Communication (SNC) of Malawi. In Malawi, the forestry and energy sectors lead mitigation programmes and projects through projects such as Improved Forest Management for Sustainable Livelihoods (IFMSL), Forest Replanting and Tree Nursery Project (FOREP), Tree Planting and Management for Carbon Sequestration and Other Ecosystem Services (TPMCSOES) Community Vitalization and Afforestation in Middle Shire (COVAMS), Malawi Rural Electrification Programme (MAREP), Community Solar/Wind Hybrid Project Concept and Promotion of Alternative Energy Sources Project (AES).

Furthermore, Malawi has also established a national system of data collection to provide detailed, complete, accurate and up-to-date emissions data in the form of a Greenhouse Gas Inventory and a Monitoring and Evaluation System to support the analysis of the impact of mitigation measures.

Malawi Government's approach to Mitigation will include:

- Review and assessment of all sources of GHG emissions in Malawi
- Promotion of CDM initiatives
- Assessment of capacity needs for CDM projects and carbon financing mechanisms
- Raising awareness on CDM projects be conducted
- Promoting REDD+ as a strategy for mitigation, to ensure continuous forest cover for carbon conservation, maintenance of biodiversity, protection of watersheds, and prevention of soil erosion.
- Promoting energy saving technologies
- Providing improved energy saving stoves so as to decrease the pressure on the forest reserves for provision of firewood
- Encourage private sector to mitigate their emissions
- Monitoring and evaluation through collection of emissions data
- Promoting strategies that would reduce vehicular emissions
- Promoting low carbon energy alternatives
- Promoting climate smart agriculture that upholds low emissions and is sustainable.

## **7.0 CAPACITY BUILDING EDUCATION AND AWARENESS**

Stakeholder consultations revealed that there is generally weak capacity and knowledge on climate change amongst various sectors, NGOs and communities. The Climate Change Policy should focus on creating awareness and capacity building for climate change adaptation and

mitigation. Stakeholder consultations have revealed that Malawi needs to improve its capacity develop proposals for funding for international bodies

The overall objective of the Climate Change Policy is to ensure that Malawi builds capacity in all aspects of climate change in order to ensure the availability of relevant high quality, complete and current data, and tools with which to analyse the data, skills and knowledge to implement low carbon development projects and awareness on climate change adaptation, mitigation and low carbon technologies for policymakers to make evidence based and informed decisions.

Malawi Government must take the following measures to develop capacity, education and awareness in the country:

- Capacity building for Academia and scientists: There is need for inclusion of climate change into the curriculum of tertiary education. There is need to build capacity in climate science and appropriate adaptation and mitigation responses. . Incentives need to be provided to reduce brain drain in the country.
- Capacity building for teachers: There is also need for the inclusion of climate change in primary and secondary school curricula and to provide teachers with the skills, tools and resources to educate the children and youth about climate change
- Capacity building for NGOs and Civil Society: There is need to develop skills in CDM.REDD+ and low carbon technologies in order for them to develop projects which will help Malawi effectively adapt to and mitigate climate change. NGOs and Civil Society must work together with Government to inform the nation about the social and economic impacts and challenges of climate change in Malawi.
- Capacity building for the media: The media has a major role to play in educating the general population. Every effort must be made to work with and through the media and journalists to promote and explain issues associated with climate change. The capacity of journalists to report on climate change must be enhanced.
- Capacity building for Businesses: Malawi Government must forge for partnerships with private sector to ensure that their capacity is developed for low carbon development. Businesses must build their capacity to embrace low carbon technologies that will provide green jobs for Malawi and thereby reduce unemployment.
- Capacity building for Local Government: There is need for Malawi to develop its capacity in green technologies such as renewable energy and low carbon development Programmes to build capacity for local government's climate response strategies need to be prioritised, and user friendly toolkits/manuals and other practical knowledge sharing methods need to be prepared and disseminated.

## **8.0 POPULATION AND HUMAN SETTLEMENTS**

Malawi is experiencing high population growth, which has grown from 2.9 million in 1950 to 14.9 in 2010 and is projected to grow to 49.7 million by 2050 (AFIDEP/PAI, 2012). Majority of Malawi's population depend on rain fed agriculture and increasing population has put pressure on land, with communities now practicing agriculture on marginal lands such as steep slopes. Population growth compounded with climate change risks is expected to affect food supply, water availability, natural resources availability,

To reflect the strong and inseparable linkages between population dynamics and sustainable development, Malawi Government must address the following:

- There is need for a two-pronged approach in addressing climate change issues: promotion of more sustainable patterns of consumption and production, by encouraging a shift towards the green economy, and human-rights based policies that address population dynamics.
- Providing comprehensive information about, access to and choice of the widest possible range of safe, effective, affordable and acceptable modern methods of family planning, so that they are able to exercise free and informed reproductive choices, and that family planning programmes have a sufficient and continuous supply of safe, effective, affordable and acceptable modern contraceptives.
- Systematically consider population trends and projections in our national, rural and urban development strategies and policies. Through forward-looking planning, which anticipates changes in population size, geographic distribution and age structures in order to address the challenges and seize the opportunities that are associated with demographic changes, including urbanization and migration.
- Improving the access to education opportunities by the youth especially the girl child beyond the primary level; to information and services, particularly for sexual and reproductive health and promoting their full participation and civic engagement, as well as addressing gender inequality.

## **9.0 RESEARCH AND SYSTEMATIC OBSERVATION**

The whole background to recognizing climate change as a global issue has been research and data driven and evidence based. Articles 4, 5, 6 and 12 of The United Nations Convention on Climate Change (UNFCCC) and Article 10 of its Kyoto Protocol encourage research on the phenomenon of climate change and on policies for mitigating and adapting to climate change. The UNFCCC and the Kyoto Protocol both explicitly encourage the signatories to co-operate in scientific, technological, socio-economic and other research as well as systematic observations.

High quality, long term, systematic observations of key climate variables at local, regional and global levels are essential to improve understanding of climate change impacts and to plan for adaptation and management of these. In 2004 the World Meteorological Organization published the implementation plan for the global observing system for climate in support of the United Nations Framework Convention on Climate Change. This plan identifies a series of essential climate variables that should be measured to support actions on climate change.

## **9.1 Overall Objective**

Malawi needs to undertake actions and further develop its capabilities to

- Improve understanding about climate change at all levels of society
- Systematically observe (monitor) and model climate change phenomena to better predict their evolution and impact
- Analyse and generate evidence-informed policies, decision-making, planning and action for mitigation and adaptation
- Manage transfer, adoption, imitation, adaptation and absorption of clean technologies into local productive practices, especially to reduce dependence on wood and fossil fuels as an energy source.
- Promote research and innovation for mitigation and adaptation, including technological innovation

## **9.2 Strategy**

The strategy required to address the above objectives is multi-fold. It requires an inclusive approach to engage stakeholders and must be built upon partnerships across sectors, nationally, regionally and globally. It must be mindful of the need to develop individual and institutional capacity. It must be driven by evidence and requires foresight, planning and financing.

### **9.2.1 Curriculum development and educational outreach**

Further promote tertiary education courses and research that specifically relate to, and build understanding of, climate change. Incorporate climate change into tertiary, secondary and primary education curricula. Promote partnerships at all levels and sectors of society to ensure fact-based information on climate change and associated issues is readily available, accessible and proactively provided.

### **9.2.2 Develop centres of excellence and appropriate manpower**

It is critical that centres of excellence are established in specific disciplines and in multiple disciplines that can provide information, analysis and undertake research in the broad array of activities outlined in the adaptation and

mitigation chapters and so inform progress in those activities. These centres and the accompanying human resource needs will require short, medium and long term planning.

### **9.2.3 Systematic observations and modelling capability**

As global temperatures rise, it is generally agreed that weather patterns will become more variable, with a lot of local variation. This will impact substantially on agriculture, ecology and development. It is therefore imperative that Malawi develops a capability with partners as appropriate, to develop its own assessment of future trends at a local level. This will require establishing an improved network of systematic observation sites through the National Meteorological Service and other specialist centres. It will also require working in conjunction with higher education institutions to train and develop modelling capabilities.

### **9.2.4 Medium and long term planning**

Several activities can be undertaken to support effective and long term planning. These include: (i) a foresight exercise to assess the likely trends over 10 years or more for Malawi and to initiate responses with that time frame in mind; (ii) development of a science and technology plan; (iii) development of a human resources plan; and (iv) develop a research strategy, with top level prioritisation, including socio-economic research linked to employment trends..

### **9.2.5 Technology transfer**

Technology transfer continues to be very prominent in the multilateral environmental agreements in general, and in climate change-related agreements in particular. A national capacity to optimally engage climate change related technology for Malawi needs to be developed.

### **9.2.6 Scientific and technical governance and coordination**

Establishment of a multi-sectoral Scientific and Advisory Council consisting of scientific and technical experts from academia, industry, civil society and development partners to review, provide up to date assessments and make proposals on strategic developments linked to climate change. Through its actions the Council would bring the scientific community closer to decision-makers and implementers. The Council would be chaired by an eminent scientist who would act as spokesperson for the Council and could advise government on Council's behalf. The Council would produce an independent biennial report on the status of climate change knowledge and technology development relevant to Malawi and on the scientific and technical status and



Malawi's response to climate change. This council could be supported by the NCST secretariat in consultation with MoEST and Environmental Affairs Department.

#### **9.2.7 Financing of research and systematic observation**

Funds and funding instruments need to be identified for:

- the sustainable improvement, development and long term requirements of systematic observation.
- research and innovation for enhanced adaptation and mitigation.
- supporting the private sector to engage in technology transfer, adaptation, use and innovation
- individual and institutional capacity development

## **10.0 MAINSTREAMING CLIMATE CHANGE RESPONSE IN NATIONAL DEVELOPMENT**

Climate change poses a challenge to meet developmental objectives. Mainstreaming climate change response in development ensures long term sustainability of investments as well as makes development activities resilient to present and future climate. Climate mainstreaming seeks to advance adaptive capacities of people during development activities so that the activities are resilient to climate change risks and disasters. For Malawi, there is need to focus on integrating adaptation and mitigation into developmental policies and activities.

Mainstreaming in Policy:

Policies in Malawi need to be coordinated and aligned towards climate resilience and therefore policy harmonization and coordination in environmental and natural resources management as well as development are needed. Malawi faces the following challenges for this:

- Weak institutional coordination
- Weak capacity
- Conflicting policies
- Conflicting institutional mandates

Climate mainstreaming will enhance adaptive capacities for Malawi and guide development in such a manner as to be resilient to climate change risks and disasters. This was prioritised in the Bali Action Plan and driven by UNFCCC as a priority.

Malawi can mainstream climate change into its development through the following ways:

Create awareness about climate change and its impacts amongst local authorities and general public

Coordinate disaster risk reduction in all sectors

Include climate change considerations in urban planning must so that buildings and infrastructure take into account climate change risks

## **11.0 INSTITUTIONAL FRAMEWORK FOR CLIMATE CHANGE MANAGEMENT**

### **Roles and institutional arrangements**

The Malawi Growth and Development Strategy (MGDS) identified a harmonized policy and institutional framework as an important aspect of dealing of dealing with climate change issues. The consistent implementation of the National Climate Change Policy requires a robust long-term framework for institutional coordination to:

- Develop and harmonise climate change issues in sectoral policies, plans and programmes;
- Mainstream climate change issues in sectoral policies, plans and programmes;
- Coordinate adaptation and mitigation actions;
- Coordinate research and development and promote innovation;
- Measure, report and verify climate change responses;
- Improve weather and climate monitoring, prediction systems and databases;
- Promote dissemination of climate change information for early warning, preparedness and response;
- Promote climate change related education, training, awareness and capacity building;
- Promote domestication of international protocols and treaties.

However one of the key issues needing attention that was raised by both national and district respondents relates to weaknesses in coordination and management of climate change issues in Malawi. The findings show that the current national institutional framework for managing climate change has some weaknesses. These include:

- Disintegrated and overlapping sectoral mandates that do not clearly define roles and responsibilities of stakeholders;
- Poor linkage between central level and local level institutions, which results in inadequate climate change structures at the lower levels;
- Piecemeal introduction of new institutional and management frameworks for climate change resulting in conflicts of institutional mandates, responsibilities and confusion in coordination and leadership in climate change issues in the country;

- Inadequate consultation and engagement in policy development, implementation and monitoring, where stakeholders are streamlined along their areas of interest and local communities, private sector are usually left out;
- Uncoordinated implementation of ENRM and climate change resulting in conflicts, laxity and duplication of efforts.
- Lack of single management entities for ecosystems (such as major rivers, lake basins, wetlands and their catchments) which fall under the mandates of several public institutions.
- Limited platforms where sector technical committee members can share information and dialogue with other stakeholders such as civil society, private sector.
- Private sector is missing and has no voice yet climate change is also an economic issue

The consultations indicated that in order to ensure success, it is important that the policy should ensure role clarity and effective coordination and management of climate change issues in Malawi. This section describes the roles and institutional arrangements within the public sector, other stakeholders such as non-governmental organizations and civil society, the private sector, academia, development partners, local communities. It also discusses the institutional arrangements for coordination within government and with other stakeholders.

### **Central Government: Cabinet level**

At central government level the current cabinet committee on Natural Resources and the Environment should expand its mandate to be a cabinet committee on the Environment and Climate Change. The Cabinet Committee will enable all arms of government to coordinate their actions.

### **Parliament**

Parliament will oversee the development and implementation of the National Climate Change Policy. The Parliamentary Committee will serve to provide good governance oversight of climate change issues. We propose that the current parliamentary committee on Natural Resources and the Environment should expand its mandate to be a parliamentary committee on the Environment and Climate Change

### **The Ministry of Environment and Climate Change**

The Ministry of Environment and Climate Change is the main government agency addressing sustainable utilisation of Malawi's natural resources and the environment. The ministry includes a number of departments with mandates related to climate change vulnerability; including the Environmental Affairs Department (EAD), the Department of Forestry (DOF), and the Department of Climate Change and Meteorological Services (DCCMS). The Ministry is the policy holder and will be responsible for implementing climate change policy and other relevant legislations. It will also be responsible for enforcing regulations and providing guidance on environmental issues, including climate change.

## **Ministry of Economic Planning and Development**

The Ministry of Economic Planning and Development is a development planning institution. Its main role will be to oversee and provide guidance on how national and district institutions can mainstream climate change in the development planning processes.

## **Local Government Authorities**

Local Government Authorities are key decentralised implementation and service delivery points in Malawi. They play a crucial role in building climate resilience through planning human settlements and urban development; the provision of district, municipal and city infrastructure and services; water and energy demand management; and local disaster response, amongst others. Climate change considerations and constraints will need to be integrated into district and urban development planning tools and their service delivery programmes.

## **Partnering with stakeholders**

Climate change is an issue for all Malawians and government realises that the objectives set out in this White Paper can only be fully realised with the active participation of all stakeholders. The government is committed to substantive engagement and, where appropriate, partnerships with stakeholders from industry, business, academia and civil society in a manner that enhances coordination.

## **Business and Industry**

As both a significant contributor to GHG emissions and effective climate change response actions, lower-carbon products and services and green jobs, business and industry have a fundamental role in the country's climate change response. Therefore it is important that, government will should forge and maintain effective partnerships with business and industry to ensure that their capacity is harnessed in driving the transition to a climate-resilient lower-carbon economy and society. The private sector is also an recognises importance source of funding in achieving national climate change response actions but will be important to explore the most appropriate mechanisms to achieve efficient funding flows from the private sector.

## **Civil Society**

The role of citizens and organised groupings within civil society are important to the success of a national effort. Civil society organisations play a key role of implementing climate change initiatives with communities but also critically evaluating, commenting on and responding to the initiatives of government and the private sector. They also raise public awareness, and motivate individuals, institutions and authorities to take mitigation and adaptation actions to the adverse impacts of climate change. Civil society organisations that work directly with communities and particularly with the urban and rural poor and with

women are an important conduit for ensuring that climate information is timeously communicated and to inform government and research institutions of vulnerable groupings. climate change related issues.

### **Academia and scientists**

The climate change science and academic community must work towards doing solid research on climate change, its impacts, key vulnerabilities in affected sectors and communities. They will explore appropriate mitigation and adaptation responses; continue to build capacity in climate change science; and inform government and the public of climate change-related socio-economic challenges and opportunities.

### **Coordination Mechanisms**

The following mechanisms will be used to coordinate climate change activities and consult on climate change policies with stakeholders:

#### **The Inter-Ministerial Technical Committee on Climate Change (IMTCCC)**

The strategic, multi-faceted and cross-cutting nature of climate-resilient development requires a technical coordination committee at that will coordinate and align climate change response actions with national policies and legislation. To this end, the IMTCCC shall oversee all aspects of the implementation of the policy including the sectoral desired adaptation and mitigation intervention prioritisation process. The Committee advises on matters relating to national responsibilities with respect to climate change, but also in relation to the UNFCCC and the Kyoto protocol. It also advises on the implementation of climate change-related activities.

The Ministry of Environment and Climate Change shall serve as the secretariat for the Committee and the Principal Secretary of the Ministry of Environment and Climate Change will chair the IMTCCC. Other sectors and relevant ministries will have climate change subject matter specialists who will be part of the IMTCCC. These include Climate Change and Meteorological Services, forestry, water, fisheries, agriculture, disaster and risk management, energy, information, gender and development planning and cooperation.

### **National and District Forums**

In order for government to reach out and engage with society as a whole a National Partnership Forum for climate change will be established to review progress and advice on strategies and actions. The National Forum shall include representatives from: the parliamentary committee, civil society, including representation of disadvantaged groups, the private sector, academia, and development partners. The youth of the country will also be represented as they are the future custodians of the environment. The National Forum will be convened and supported by a secretariat based at the Ministry of Environment and Climate Change Management. The National Forum will be chaired by the Vice-President.

The National Forum will establish technical working groups in priority areas. These will feed in reports to the National Forum. Convening and provision of secretariat support for these groups will be the responsibility of an appropriate line ministry. Thus, a working group on financing mechanisms will be supported by the Ministry of Finance. A working group that crosses multiple ministries will contain representatives from all relevant ministries.

The National Forum will be complemented by District Forums, which will have similar multi-sectoral representation to the National Forum, including private sector representation. The Youth will also be represented on these forums. The district Forums will be supported by a secretariat based at the District Council.

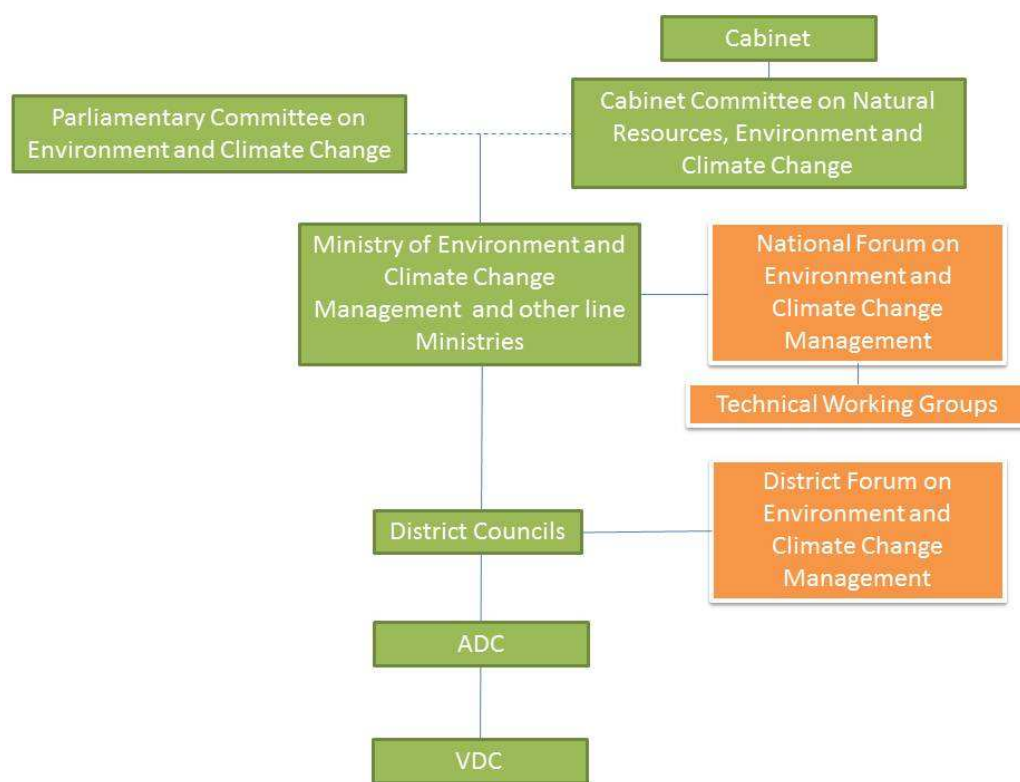


Figure 1: Institutional Framework for Climate Change

## 12.0 RESOURCE MOBILISATION

Malawi will need resources for adaptation and mitigation activities in the country. Part of the national budget is expected to be dedicated for this purpose and in addition, seeking finance from international donor agencies would be necessary. Cost of adaptation is likely to increase in the future and therefore there is need to mainstream climate change into decision making of government, private sector, NGOs and Civil Society and all sectors.

Government of Malawi will mobilize resources for climate change activities through:

- Allocating funds for climate change activities in national and sectoral budgets
- Promoting Green Economy initiatives
- Developing programmes and projects to integrate development with climate change
- Promote development finance institutions to support entrepreneurial activities that will contribute to climate change resilience
- Provide an enabling environment for insurers for risk mitigation and innovative climate-related products including crop insurance
- Mainstream climate change into donor funded development activities
- Work towards attracting investment in Malawi for economic and social opportunities that reduce Malawi's dependency on climate vulnerable sectors, and
- Support mitigation and adaptation through partnering with financial institutions.

### **13.0 JOB CREATION**

Job creation is an important concern for Malawi as is a critical vulnerability which could get impacted by climate change and climate variability. This has been manifested recently with drying of Lake Chilwa, where fishermen's livelihoods have been found to be affected. Climate change also offers opportunities for job creation, as adaptation and mitigation would create new jobs especially as we shift towards green economy. There will be growth in new sectors and technology transfer which will help reduce poverty and create new jobs.

Malawi Government has to prioritise job creation in the wake of climate change through the following methods:

- Conduct an assessment of jobs that would be impacted by climate change in every sector
- Assess the barriers to job creation in green economy initiatives
- Develop capacity and skills for low carbon employment creation
- Incentivise private sector to create more green jobs
- Expand existing Income Generation Public Works Programme
- Increase collaboration with other countries to facilitate technology transfer in green technologies
- Establish linkages between private sector, academia/research institutes, Civil Society and communities in order to have greater dialogue on vulnerability for employment.

### **14.0 MONITORING AND EVALUATION**

Malawi has made some progress in monitoring and evaluation of climate change responses. In 2007, the National Capacity Self-Assessment (NCSA) was done to determine national

priorities for capacity development to better address global environmental issues. Malawi undertook this exercise to analyse the country's strengths, constraints and needs at systemic, institutional and individual levels. It was found that there was inadequate public awareness, inadequate skilled or trained manpower and weak community participation in environmental issues. Another study was done in 2011, the Capacity Needs Assessment (CNA) study analysed how government institutions develop, implement and monitor their programs in relation to climate change. It also looked at the extent to which programs adequately address climate change and sustainable natural resources management issues. The study found that there is a critical problem in data archiving and management which has led to duplication of efforts, waste of resources, conflicting recommendations and policy interventions in some cases. Furthermore, there are weak enforcement mechanisms on several climate change issues and inadequacies in climate change communication.

In order to reduce climate change risks, Malawi Government will:

- Continuously monitor climate change and atmospheric monitoring systems such as rainfall, temperature, humidity, soil moisture, wind, solar radiation and extreme weather events
- Enhance data collection and storage of monitoring data
- Communicate findings nationally and internationally
- Involve research institutes, academia, NGOs and private sector in monitoring and reporting
- Develop a communications strategy to communicate monitoring and evaluation information
- Provide timely dissemination of data to stakeholders.

## **15.0 CONCLUSION**

Climate change poses challenges to Malawi, but also opportunities which will require the country to adopt adaptation and mitigation measures to ensure that its populations and the environment are managed sustainably. Malawi Government realizes as a matter of urgency that it must adapt and mitigate the impacts of climate change. For this, the country must harmonize efforts in all sectors and make strong commitments of action. It is in this context that Malawi has developed the Climate Change Policy.

This Climate Change Policy is expected to provide much needed direction on dealing with the impacts of climate change while adhering to the principles of sustainable development. The policy will help Malawi achieve its international, regional and national commitments to achieve climate friendly development path. Government of Malawi wishes to thank all stakeholders for their inputs and for their commitment to build a climate-resilient Malawi for now and the future.



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