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**National Capacity Needs, Constraints and Priorities  
for the Implementation of the Climate Change,  
Desertification and Biodiversity Conventions**

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**Kingdom of Swaziland  
National Capacity Self-Assessment  
NCSA/UNDP/SEA/CC/01**



**SWAZILAND  
ENVIRONMENT  
AUTHORITY**



**GLOBAL  
ENVIRONMENT  
FACILITY**



**UNITED NATIONS  
DEVELOPMENT  
PROGRAMME**

***Thematic Assessment***  
**UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE  
CHANGE**

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## Executive Summary

Recognition of the human interference on climate was first acknowledged at the World Climate Conference held in 1979. However it was 15 months of negotiations after the first meeting of the Intergovernmental Negotiating Committee (INC) in 1991 before government representatives adopted the United Nations Framework Convention on Climate Change (UNFCCC), on 9 May 1992. At the Rio de Janeiro United Nations Conference on Environment and Development (or Earth Summit) of June 1992, the new Convention was opened for signature. The overall objective of the United Nations Framework Convention on Climate Change (UNFCCC) is to manage climate change through “*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*”.

The UNFCCC establishes a framework for intergovernmental efforts to tackle climate change, acknowledging the rate of change in natural systems. As such the Convention allows for “a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”

The Convention establishes a set of principles and articulates specific commitments for different groups of countries, differentiated according to their circumstances and needs. The principle of *differentiated responsibility* acknowledges that while the common concern and primary objective of the Convention is to manage climate change responsibility to take action is differentiated on the basis of capability to discharge that responsibility and on the levels of national contributions to the green house gas emissions. The second guiding principle recognises *national sovereignty over natural resources within national jurisdictions*. This principle acknowledges individual sovereignty and empowers countries with the autonomy and authority to determine or define their development priorities.

In order to meet the objectives of the UNFCCC, countries need to ensure they have sufficient capacity to meet the requirements of the Convention. Acknowledging capacity constraints at different levels as one of the key constraints to meeting the challenges and provisions of the UN Conventions the Swaziland Environment Authority has commissioned a **National Capacity Self-Assessment (NCSA) Report on National Capacity Needs, Constraints and Priorities for the Implementation of the Climate Change, Desertification and Biodiversity Conventions**.

The aim of the NCSA is to determine national capacity requirements and define national capacity needs and priorities. The Swaziland Environmental Authority, with support from the UNDP and the GEF, has established an NCSA Project Management Group (PMG) to facilitate the National Capacity Self-Assessment. The objective of this project is *to identify national capacity constraints and priorities to meet binding commitments contained in the three Rio Conventions on biodiversity, climate change and desertification*. The information gained through this process is to be used by the PMG to *determine how best to develop this capacity to meet Swaziland’s commitment to global environmental management through the production of a strategy and action plan*.

As a Contracting Party to the Framework Convention on Climate Change (UNFCCC), the Kingdom of Swaziland has committed itself fully to the provisions contained therein. A thorough review of the commitments and obligations contained therein was carried out. This identified the following key areas within which Parties to the Convention have agreed to specific commitments and obligations.

- Reporting
- Policy measures
- Research and monitoring
- Training and education
- Public awareness and exchange of information
- Financial mechanisms
- Capacity

As a Non-Annex I Party, Swaziland was amongst the 150 nations to sign at the Earth Summit in Rio de Janeiro in June 1992. The country subsequently ratified the Convention, becoming Party to it in October 1996, making it the 41<sup>st</sup> of the 51 African countries to do so. An analysis of strengths and weakness with respect to the country's performance since that time, pertaining to the commitments and obligations of the UN FCCC was conducted, with consideration given to potential opportunities and threats.

The Swaziland Environment Authority delegated responsibility for national responsibilities of the UN FCCC to the National Meteorological Services. Under the auspices of the Focal Point a national project team was established to facilitate preparations of the first report to the COP. This team included a project coordinator and project supervisor, with fourteen researchers in assistance. The SWOT analysis revealed that Swaziland has been largely successful in complying with the commitments and obligations for Non-Annex I Parties under the UN FCCC.

The first national communication was prepared with support from the GEF and submitted to the COP in 2002. The report provides an overview of the countries national circumstances, focussing on agriculture, forestry, industry and manufacturing, transport and major a description of major land uses with an examination of vulnerability and adaptation in different sectors along with an analysis of mitigation options. The report was prepared using national consultants and represents Swaziland's first attempt to present an overview of with respect of the base year 1994, of:

- Its national social and economic context on the basis of which it will address climate change and its adverse effects and within which various interventions could be made;
- A national inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases using the IPCC 1996 Revised Guidelines;
- An assessment of the country's potential vulnerability to climate change and approaches for adapting to such change; and
- A general description of steps taken or envisaged by the country to implement the Convention.

Through the process of preparing and submitting the first national report to the COP, a number of key issues have emerged as constraints in achieving the objectives of the UN FCCC. These were interrogated through a participatory process to highlight priorities. These considered as systemic, organisation and individual constraints and opportunities, described below.

## **Systemic Capacity**

Swaziland is acknowledged as having a comprehensive policy framework centred around principles of sustainable development and environmental management, although there are no specific legislative measures addressing the issue of climate change.

The size of the country and its proximity to larger, more industrialised countries, such as South Africa, were identified as potential threats to the control and impact of green house gas emissions. This proximity was also acknowledged as a potential opportunity to supplement the limited number of appropriately skilled personnel through regional expertise and networks.

Awareness associated with issues of climate change was identified as one of the biggest challenges. The time over which the effects of climate change are likely to be felt along with the lack of certainty around how these effects will manifest reduces the perceived importance in many developing countries faced with what are considered more pressing issues.

There is a lack of recognition of the socio-economic gains that can be derived from implementation of the UN FCCC. This arises from a general lack of awareness and understanding among stakeholders, particularly those in the private sector of what the national commitments are under the Convention and how they, as private sector, may contribute to the emission of green house gases or mitigation there of.

Lack of awareness manifests as a lack of political will, understanding and commitment at government level to implement the provisions contained within the Convention.

Awareness among decision or policy makers, with the requisite political will and commitment is needed for a legislative framework that can accommodate and facilitate financial allocations from government budgets.

In the absence of such support there is a financial dependency on external sources of funding. Sourcing this funding, (GEF, CDM etc.) requires specialised expertise, appropriate contacts and time to dedicate to the preparation of proposals.

Time is considered one of the most significant constraints. The collation of information needed to inform the determination and monitoring of climate change is exhaustive. Information is scattered among government departments, nationally as well as at smaller administrative levels and within the private sector.

Stronger collaborative frameworks are needed to integrate private sector and government and facilitate sharing of information.

## **Organisational Capacity**

Organisational capacity relies upon sufficient financial commitments to ensure operation but also sustainability of interventions. This needs to extend to supporting delegations to attend meetings of the COP and developing institutional memory

Technical capacity to evaluate and implement climate change policies and measures to advise and inform provisions of Convention needs to be supported and strengthened through appropriate training measures.

Analytical tools for climate change, such as model and emission factors need to be determined or extrapolated from neighbouring countries. This process should be supported through research driven by a central, coordinated body. This would provide direction and strategic focus to research initiatives. The development of such capacity will in turn support negotiating skills within regional and international fora.

Institutions need clearly defined lines of responsibilities, mandates, mission statements and organisational visions. These need to be linked with corresponding levels and acknowledged accountability.

There is a need to position the country strategically to take advantage of financial opportunities provided under the UN FCCC. This is increasingly important with recent ratification of the Kyoto Protocol.

The position of the NMS needs to be strengthened with respect to integration and interaction with other departments and ministries, particularly where the impact of climate change impacts directly on these institutions to fulfil their national mandates. The NMS should be given the resources and mandate to coordinate and champion national action plans in relevant sectors.

Organisational investment and support is required for the development and implementation of cleaner technologies. These need to be tried, tested and subsequently promoted through the development of appropriate policy and incentive mechanisms.

Infrastructure and data for monitoring and modelling changes in climate are currently insufficient. Efforts need to be made to ensure appropriate spatial data is collected over appropriate spatial and temporal scales to effectively determine the impacts of climate change in Swaziland.

### **Individual Capacity**

Individual capacity is central to successful realisation of the provisions of the UN FCCC. Capacity requirements therefore need to address human resources management, such as career progression and security of tenure, providing opportunities for accessing training, networking opportunities and ensuring career progression. Security of tenure applies to government, academics, local consultants and practitioners.

The specialised skills required to address issues of climate change, and the limited availability of these may result in significant “brain drain”. Measures, such as appropriate incentives, skills refreshment programmes, career progression, are needed to ensure that such staff are retained.

Climate change issues need to be included in school curriculum and further developed at tertiary institutions.

Individuals with responsibilities under the UN FCCC require clearly defined mandates and job descriptions with associated responsibilities for incumbents. This will afford a sense of empowerment and ownership and engender greater responsibility.

A Logical Framework Analysis has been proposed with the intention of allowing these constraints and priorities to be structured in a way that will assist the NCSA Project Management Group in formulating an appropriate strategy and action plan to ensure Swaziland has the capacity to meet its commitments to global environmental management.

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# **1 INTRODUCTION**

## **1.1 The UN Conventions**

Increasing recognition of anthropogenic changes in the natural environment as a result of human interference has resulted in the international community agreeing on a number of multi-lateral environmental agreements. These were initially proposed at the United Nations Conference on Environment and Development (UNCED), held in June 1992, in Rio de Janeiro, Brazil. Known as the Earth Summit, these agreements provide a set of principles and obligations related to the protection of Earth and to the improvement of life quality of its inhabitants through sustainable development. They were compiled and recorded into a global action plan, Agenda 21.

Specific government commitments to ensuring sustainable development and translation of the ideals contained within the Rio Principles and Agenda 21 were defined in six different international agreements. These define specific government commitments to-wards the following issues:

- Biodiversity
- Climate Change
- Desertification
- Persistent Organic Pollutants (POPs)
- Prior Informed Consent (PIC)
- Straddling and Migratory Fish Stocks

Central to the objectives of each of these Conventions is recognition of the potential that such anthropogenic changes have to undermine the sustainability and development of livelihoods and the global diversity upon which all of these system processes rely. Two of these, the conventions on Biodiversity and Climate Change, were opened for signing at the Earth Summit in Rio while the other four were developed in subsequent years. The conventions on Biodiversity (UN CBD), Desertification (UN CCD), Climate Change (UN FCCC) and Fish Stocks have all come into force with the conventions on Biodiversity and Climate Change having been expanded to include new legal mechanisms - the Biosafety and Kyoto Protocols. The Kyoto Protocol, under the UN FCCC, which came into force on February 16, 2005.

The UN Conventions provide a framework for countries to ensure sustainable development with specific commitments to mitigate and manage the effects of human developments and pressures on the natural environment. They call for specific policies, strategies and solutions to mitigate the loss of biodiversity, effects of climate change, and desertification. In particular, each calls on countries to integrate these objectives into national and regional development plans, policies, programmes, and strategies.

## **1.2 Background to the NCSA**

In order to address the issues covered by the UN Conventions and guarantee the success of national initiatives, countries need to ensure they have sufficient capacity to respond to the provisions of the Conventions and changing environment. In facilitating this, the Conventions provide a number of tools and instruments to assist signatories meet their obligations under the provisions of the Conventions. However, in the ensuing decade since the international community agreed on the Rio Principles and Agenda 21 it has been acknowledged that one of the biggest challenges in meeting the commitments and obligations assumed within the

various conventions continues to be a lack of capacity. These capacity issues exist at various levels, namely *individual, organisational and systemic*.

In response, the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP) instigated the Capacity Development Initiative (CDI) in January of 2000. The aim of this initiative was to establish a more comprehensive and informed approach to issues around capacity needs and priorities, along with a strategy for developing capacity among developing countries to meet their global environmental commitments under the UN Conventions.

In this spirit and acknowledging capacity constraints at different levels as one of the key constraints to meeting the challenges and provisions of the Conventions the Swaziland Environment Authority has commissioned a **National Capacity Self-Assessment Report on National Capacity Needs, Constraints and Priorities for the Implementation of the Climate Change, Desertification and Biodiversity Conventions**.

The National Capacity Self-Assessment (NCSA) is aimed at determining national capacity requirements and defining national capacity needs and priorities. The Swaziland NCSA aims to address a number of cross cutting issues that are specific to the country e.g. community level capacity, traditional structures, institutional management, technical training, sectoral policies and legislation, data information and political will (UNDP/GEF, 2003).

### **1.3 Objectives of the Study**

The Swaziland Environmental Authority, with support from the UN DP and the GEF, has established an NCSA Project Management Group (PMG) to facilitate the National Capacity Self-Assessment.

According to the Terms of Reference (ToR), the objective of this project is *to identify national capacity constraints and priorities to meet binding commitments contained in the three Rio Conventions on biodiversity, climate change and desertification*.

The information gained through this process is to be used by the PMG to *determine how best to develop this capacity to meet Swaziland's commitment to global environmental management through the production of a strategy and action plan*.

## **2 OVERVIEW OF PARTICIPATION AND PREPARATION PROCESS**

The process for undertaking the NCSA involved a review of the legal and institutional environmental framework with Swaziland. The review examined the obligations and commitments of Parties to the UN Conventions and Swaziland's response. Through this process a detailed stakeholder analysis was carried out. This was used to identify institutions and individuals with responsibilities under the Conventions. Key stakeholders are presented in Annex 1. The process of self-assessment was facilitated through structured and unstructured interviews, telephonic communication, email, review of reports and site visits, culminating in a stakeholder workshop.

Eighty-two key stakeholders were invited to participate in a Thematic Workshop (TW) under each of the Conventions themes. The aim of these workshops was to bring together those responsible for and those with an interest in the Kingdoms obligations and commitments under each of the Conventions. The stakeholders were limited in number to those identified as having key role to play in realising the Kingdoms obligations and commitments under the UN Conventions. In order to ensure representation of key stakeholders to facilitate the process of

self-assessment invitations were followed up to confirm, with forty-six stakeholders verbally confirming their participation.

The workshop focussed on a participatory approach. A total of thirty-two stakeholders attended and participated. This included ten Government representatives, two NGO representatives, six from industry, one from the FAO, four from parastatals, three from the University of Swaziland and six consultants. Of these consultants two were from the university. Following the official introduction and opening, the first session outlined the background to the NCSA process. Participants were then briefly introduced to the Conventions before being asked to write down two commitments under each of the three Conventions. A more detailed review of the Conventions was then presented, outlining the provisions contained therein and the binding commitments and obligations upon Swaziland as a signatory. Participants were then again requested to write down two activities or responses that they believed themselves, their organisation of the country had undertaken in response. A more detailed review of the Kingdoms response to date was then presented and discussed. An analysis of strengths and weaknesses was then performed. Participants broke away into three groups under each of the Conventions and analysed the perceived strengths and weakness in relation to Swaziland's response to the Conventions. This information was captured and collectively summarised through plenary sessions. From this summary emerged a number of areas where Swaziland had demonstrated strengths in relation to the Conventions along with a number of key problem areas perceived to be weaknesses in relation to the Conventions. Threats to Swaziland meeting their obligations along with opportunities were also examined.

These perceived weaknesses were interrogated further using a root-cause analysis. Through a facilitated process participants were forced to work through the various reasons behind the perceived problems to the underlying, or root, cause. The causal factors identified through this process were used to define the key capacity constraints, from which capacity needs emerged. Capacity needs as identified and defined through this process were discussed with participants in order to examine potential interventions, actions and strategies to overcome and realise the objectives of the Conventions.

The workshop documentation is presented in section 5 of the report. The process was guided by the GEF (2001; CDI, 2000) definition of capacity "*the ability of individuals, institutions and systems to make and implement decisions and perform functions in an effective, efficient and sustainable manner.*"

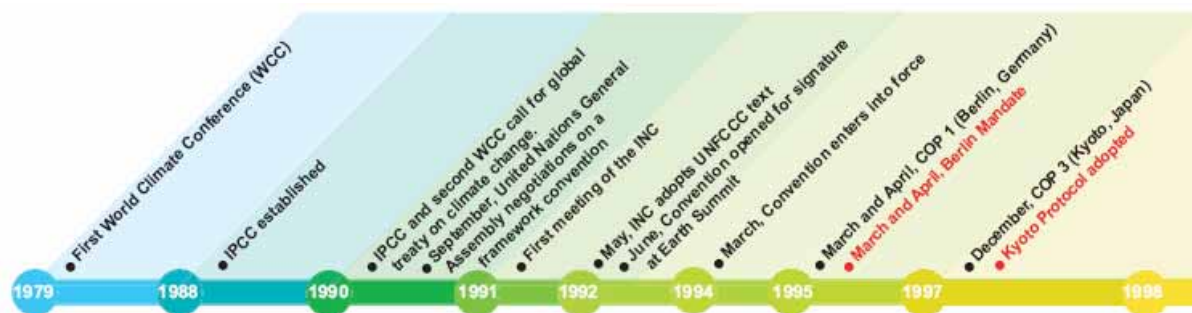
### **3 LITERATURE REVIEW**

#### **3.1 Analysis and description of the causes of the creation of UN FCCC**

Recognition of the human interference upon the earths climate was first acknowledged at the First World Climate Conference held in 1979 (see timelines below). Although initially contentiously debated, the issue of climate change and broader public concern has continued to grow. During the 1980s governments grew progressively more aware of climate issues and in 1988 the United Nations General Assembly adopted resolution 43/53, proposed by the Government of Malta, urging the 'Protection of global climate for present and future generations of mankind.' During the same year the governing bodies of the World Meteorological Organization and the United Nations Environment Programme created a new body, the Intergovernmental Panel on Climate Change, to marshal and assess scientific information on the subject.

Although the evidence for climate change has continually been brought into question the 1990 First Assessment Report of the IPCC is held to present the first confirmation of the threat of climate change. More recent evidence (2005) has confirmed the effects of climate change on the world's oceans with rising sea temperatures. The Second World Climate Conference held in Geneva later that year called for the creation of a global treaty. The General Assembly responded by passing resolution 45/212, formally launching negotiations on a convention on climate change, to be conducted by an Intergovernmental Negotiating Committee (INC).

The INC first met in February 1991 and its government representatives adopted the United Nations Framework Convention on Climate Change, after just 15 months of negotiations, on 9 May 1992. At the Rio de Janeiro United Nations Conference on Environment and Development (or Earth Summit) of June 1992, the new Convention was opened for signature. The overall objective of the United Nations Framework Convention on Climate Change (UN FCC) is to manage climate change through “*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*”. The Convention establishes a framework for intergovernmental efforts to tackle climate change, acknowledging the rate of change in natural systems. As such the Convention allows for “a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”



Timeline of events leading to the UN FCCC, note the Kyoto Protocol came into effect 16 February 2005. After UN FCCC (2003)

Pursuant with the overall objective, the Convention establishes a set of principles and articulates specific commitments for different groups of countries. Countries are differentiated according to their circumstances and needs. The primary principle of *differentiated responsibility* acknowledges that while the common concern and primary objective of the Convention is to manage climate change responsibility to take action is differentiated on the basis of capability to discharge that responsibility and on the levels of national contributions to the green house gas emissions. The second guiding principle recognises *national sovereignty over natural resources within national jurisdictions*. This principle acknowledges individual sovereignty and empowers countries with the autonomy and authority to determine or define their development priorities. The Convention also provides a set of institutions to enable governments to monitor implementation and to share insights on how best to pursue the Convention’s aims.

### 3.2 Parties to the Convention

The UN FCC was opened for signature at the Nations Conference on Environment and Development Earth Summit in 1992 in Rio de Janeiro and came into force on 21 March 1994. The Convention currently has 186 signatories (Appendix 1). In addition, the Kyoto Protocol representing a substantial extension to the Convention was adopted at the Convention of the Parties (COP 3) in Kyoto, Japan, in December, 1997. The Protocol outlines legally binding

commitments and basic rules, although it did not include details on how they would be applied. The Protocol also required a separate, formal process of signature and ratification by national governments before it could enter into force, which was achieved on February 16 2005.

The Convention recognizes three main groups of countries, which are afforded different obligations and commitments under the provisions of the Convention. These are based on countries respective commitments under the Convention, their abilities and contributions to green house gases. According to these groups the differing commitments are:

**ANNEX I Parties** includes the industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992, plus countries with Economies in Transition (EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. Under their commitments, these Parties are required to set an example of firm resolve to deal with climate change.

**ANNEX II Parties** consist of the OECD members of Annex I, with exclusion of the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to “take all practicable steps” to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channeled mostly through the Convention’s financial mechanism.

**NON-ANNEX I Parties** includes mainly developing countries. Certain groups of developing countries are recognized by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) are more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance and technology-transfer.

The Convention acknowledges the 48 countries defined by the United Nations as Least Developed Countries (LDCs). These are given special consideration under the Convention on account of their limited capacity to respond to climate change and adapt to its adverse effects. In addition, Parties to the Convention are urged to take full account of the special situation of LDCs when considering funding and technology-transfer activities.

### 3.3 Provisions of the UN FCCC

This section provides an assessment and analysis of the UN FCCC. The aim is to highlight the specific provisions of the convention and the obligations and commitments upon Parties thereto. In the absence of adequate scientific data and certainty the Convention calls upon its Parties to “take precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects” (UN FCC Article 3(3)). The commitments upon Parties are articulated in Article 4 of the Convention (see Annex 1). These are articulated in more detail in subsequent Articles, which are described in the following sub-sections. We have attempted to include a general review followed by examination of the Conventions requirements under specific categories. These include:

- reporting requirements,
- policy and legislation,
- research and monitoring,

- training and education,
- public awareness,
- financial mechanisms, and
- capacity.

The main obligations relate to communicating to the Conference of Parties information on:

- national inventory of sources and sinks of anthropogenic emissions of greenhouse gases; and
- steps taken or planned to implement the Convention.

In addition to communicating to the COP, the Convention outlines specific commitments and obligations for African Contracting Parties under Articles 4, 5 and 6. These call on African countries to:

- Integrate climate change management consideration into their social, economic and environmental policies and programmes;
- Keep levels of their emissions under check by periodically or as required providing national inventories of anthropogenic emissions and removals by sinks;
- Promote education, training and public awareness;
- Promote the sustainable management of sinks and reservoirs of greenhouses gases; and
- Promote and/or conduct relevant research and cooperate in exchange of information.

Parties to the Convention also undertake to send delegations to attend and participate in the Conference of Parties and negotiation of protocols to the Convention. Although not legally binding, in doing so African countries are able to ensure their priorities are deposited in decisions regarding the Convention's implementation and any legal instruments arising from the Convention.

According to the UNFCCC press release of 18<sup>th</sup> November 2004, the Kyoto Protocol will become legally binding on its 128 Parties on 16<sup>th</sup> February 2005.

The protocol's entry into force means that from 16<sup>th</sup> February 2005:

1. Thirty industrialized countries will be legally bound to meet quantitative targets for reducing or limiting their greenhouse gas emissions.
  - (ii) The international carbon trading market will become a legal and practical reality. The protocol's "emission trading" regime enables industrialized countries to buy and sell emissions credits amongst themselves; this market-based approach will improve the efficiency and cost-effectiveness of emissions cuts.
  - (iii) The Clean Development Mechanism (CDM) will move from an early implementation phase to full operations. The CDM will encourage investments in developing-country projects that limit emissions while promoting sustainable development.
  - (iv) The Protocol's Adaptation Fund, established in 2001, will start preparing itself for assisting developing countries to cope with the negative effects of climate change.

### 3.3.1 Reporting

Article 4 Paragraph 1(a) of the Convention commits Parties to communicate information on national inventories of anthropogenic emissions by sources and removals of sinks of all greenhouse gases not controlled by the Montreal protocol, using comparable methodologies as agreed by the COP. Article 4 Paragraph 1(j) calls on Parties to communicate to the Conference of the Parties information related to implementation, in accordance with Article 12.

Guidelines assisting Parties in the preparation of National Communications are outlined in Article 12; Communication of Information Related to Implementation, Paragraph 1, of the Convention, provides guidelines for the national communication.

According to the original text of the Convention, re-iterated under the Scope of the Addendum, National Communications to the COP should include the following information:

- (a) A national inventory of anthropogenic emissions by sources and removal by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;
- (b) A general description of steps taken or envisaged by the non-Annex I Party to implement the Convention;
- (c) Any other information that the non-Annex I Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

However, since 1995 these guidelines have been successively revised and improved in the light of the Parties' experience of putting them to use. Guidelines governing the national communications for non-Annex I Parties were changed in 2002 at the 8<sup>th</sup> Conference of Parties (see Annex II) where it was also acknowledged that the reporting requirements for non-Annex I Parties are usually dependent upon external funding.

The national communications are supposed to articulate measures to which Parties have;

- Priorities relating to national development; the national development agenda independent of climate change considerations i.e. poverty alleviation, enhanced economic growth, equity in distribution of wealth and access to development resources and technologies to ensure that any intervention impacts positively on these development priorities;
- Priorities relating to national concerns with the effects of climate change on the national development resource base. Agriculture, forestry, natural ecosystems, wildlife, water resources including rainfall regimes, fisheries, human settlements, energy resources, transport and industrial infrastructure, human health;
- Priorities relating to management of climate change and its response measures in a global economic and political setting, such as debt relief, global technologies, introduction of clean development technologies, shift from natural resource base to cleaner technologies;
- Priorities relating to meeting commitments under the UN FCC, such as national assessment of factors that influence climate change, commitment to report these assessments, commitment to put in place national response policies and measures;

- Commitment to formulate policies and measures

### 3.3.2 Policy Measures

Many of the commitments required by the Convention call upon Parties to promote, cooperate and develop appropriate policies, strategies, technologies to monitor and reduce greenhouse gases. These are addressed separately under the respective headings. They all require specific policy measures to be realised. Article 4 of the Convention includes numerous commitments that could be considered under the Policy framework. These are described below.

Article 4 Paragraph 1(b) calls on Parties to formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.

Article 4 Paragraph 1(c) calls on Parties to promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors.

Article 4 Paragraph 1(d) calls on Parties to promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems.

Article 4 Paragraph 1(e) calls on Parties to cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas particularly in Africa, affected by drought and desertification, as well as floods.

Article 4 Paragraph 1(f) calls on Parties to take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change;

### 3.3.3 Research and Monitoring

Article 4 Paragraph 1(g) calls on Parties to promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies.

Article 5, Research and Systematic Observation, outlines in more detail the measures required to carrying out commitments under Article 4, paragraph 1(g):

- (a) Support and further develop, as appropriate, international and intergovernmental programmes and networks or organizations aimed at defining, conducting, assessing

and financing research, data collection and systematic observation, taking into account the need to minimize duplication of effort;

- (b) Support international and intergovernmental efforts to strengthen systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and to promote access to, and the exchange of, data and analyses thereof obtained from areas beyond national jurisdiction; and
- (c) Take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in the efforts referred to in subparagraphs (a) and (b) above.

### **3.3.4 Training and Education**

Article 4 Paragraph 1(i) calls on Parties to promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations.

Article 6, Education Training and Public Awareness, outlines the measures required by Parties in carrying out their commitments under Article 4 paragraph 1(i).

6(a) Promote and facilitate at the national and, as appropriate, sub regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities;

- 1. The development and implementation of educational and public awareness programmes on climate change and its effects; and
- 2. Training of scientific, technical and managerial personnel.

6(b) Cooperate in and promote, at the international level, and, where appropriate, using existing bodies:

- (i) The development and exchange of educational and public awareness material on climate change and its effects; and
- (ii) The development and implementation of education and training programmes, including the strengthening of national institutions and the exchange or secondment of personnel to train experts in this field, in particular for developing countries.

### **3.3.5 Public Awareness and Exchange of Information**

In addition to the commitments outlined in Article 4 paragraph 1(i), Article 4 Paragraph 1(h) calls on Parties to promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;

The measures outlined in Article 6, Education Training and Public Awareness, commits Parties to:

- (i) Promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with national laws and regulations, and within their respective capacities;
- (i) The development and implementation of educational and public awareness programmes on climate change and its effects;

- (ii) Public access to information on climate change and its effects;
- (iii) Public participation in addressing climate change and its effects and developing adequate responses.

6(b) Cooperate in and promote, at the international level, and, where appropriate, using existing bodies:

- (i) The development and exchange of educational and public awareness material on climate change and its effects.

In realizing the provisions of the UN FCCC the COP adopted a five-year work programme in New Delhi at COP 8. This programme is aimed at integrating Article 6 activities into existing sustainable development and climate change strategies. It sets out to build on actions relating to the Convention's technology transfer and capacity-building frameworks. Named the **New Delhi Work Programme**, it defines the scope of possible activities at the national and international levels, encourages the spread and exchange of information (including IPCC reports), and promotes partnership and networking efforts. A novel feature of the work programme is that it recognizes the important role of NGOs and IGOs in supporting Article 6 efforts and encourages these organizations to respond through their own activities.

### 3.3.6 Financial Mechanisms

Article 11 defines general financial mechanisms for implementation of the Conventions provisions through the COP. Importantly there are no financial commitments pertaining specifically to developing countries.

Article 11 Paragraph 5 further states that the developed country Parties may also provide and developing country Parties avail themselves of, financial resources related to the implementation of the Convention through bilateral, regional and other multilateral channels.

Article 12, providing guidelines for the Communication of Information Related to Implementation, under Paragraph 4 includes provision for developing country Parties to propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

Paragraph 7 of Article 12 includes provision to developing Parties of technical and financial support in compiling and communicating information under Article 12, as well as in identifying the technical and financial needs associated with proposed projects and response measures under Article 4.

The Convention's financial mechanism is currently operated by the GEF, which channels funds to developing countries on a grant or loan basis. The GEF was established through its implementing agencies the World Bank, UNEP and UNDP in 1991 to fund developing country projects that have global environmental benefits, not only in the area of climate change, but also in biodiversity, protection of the ozone layer and international waters. The COP provides regular policy guidance to the GEF on its climate change policies, programme priorities and eligibility criteria for funding, while the GEF reports on its climate change work to the COP every year.

The GEF Trust Fund for climate change activities in developing countries has provided about US\$1.3 billion in grants and loans since 1991. Only 3% of this amount was used to fund national communications of non-Annex I Parties. Co-financing from bilateral agencies, recipient countries and the private sector, have contributed an additional US\$6.9 billion. As

part of the Marrakesh Accords, the COP advised the GEF to expand the scope of activities eligible for funding, such as work on adaptation and capacity-building. The Accords also established two new funds:

- A Special Climate Change Fund to finance projects relating to capacity-building, adaptation, technology transfer, climate change mitigation and economic diversification for countries highly dependent on income from fossil fuels. It will be complementary to other funding mechanisms.
- A Least Developed Countries Fund to support a special work programme to assist LDCs.

In addition, the Marrakesh Accords established an Adaptation Fund. The Fund will be managed by the GEF and funded not only by the adaptation levy on CDM projects, but also by additional contributions from Annex I Parties. The Adaptation Fund is intended to finance practical adaptation projects and programmes in developing countries and support capacity-building activities. Parties to the Protocol have to report yearly on their contributions to the fund and the COP/MOP will review these reports.

### 3.3.7 Capacity

The Convention recognizes the need to develop appropriate and enhance existing capacity in relation to the provisions of the Convention. A **Consultative Group of Experts (CGE)** was established during COP 5 in 1999 to look into ways to improve national communications prepared by non-Annex I Parties and, at COP 7, it was given an additional mandate to study problems and constraints hindering their completion.

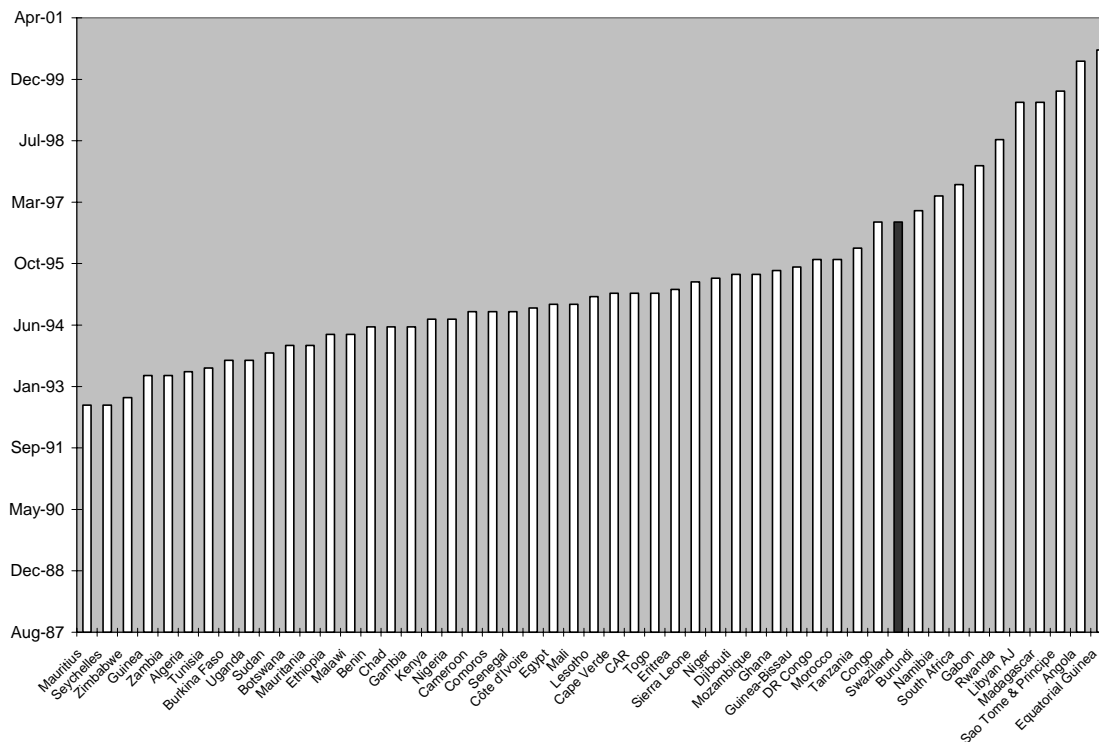
Non-Annex I Parties are also encouraged to provide, in accordance with decision 2/CP.7, information on how capacity-building activities, as contained in the framework annexed to that decision, are being implemented at national and, where appropriate, at sub regional and/or regional levels. For example, options and priorities for capacity-building, participation in and promotion of South-South cooperation, the involvement of stakeholders in capacity-building, coordination and sustainability of capacity-building activities, and the dissemination and sharing of information on capacity-building activities.

Non-Annex I parties are encouraged to include, as appropriate, information on national subregional and/or regional capacity-building activities for integrating adaptation to climate change into medium and long-term planning.

July 2003 the COP approved ToR for capacity assessment, these to be carried out initially then every five years (FCCC/SBI/2003/8 – SBI = Subsidiary Body for Implementation)

## 3.4 Summary of Swaziland's Context to the UN FCCC

The UN Framework Convention on Climate Change was opened during the convening of the Earth Summit in Rio de Janeiro in June 1992, with Swaziland amongst the 150 nations to sign. The country subsequently ratified the Convention, becoming Party to it in October 1996, making it the 41<sup>st</sup> of the 51 African countries to do so (Figure 1 below).



**Figure 1** The date of ratification of the UN FCCC by African countries

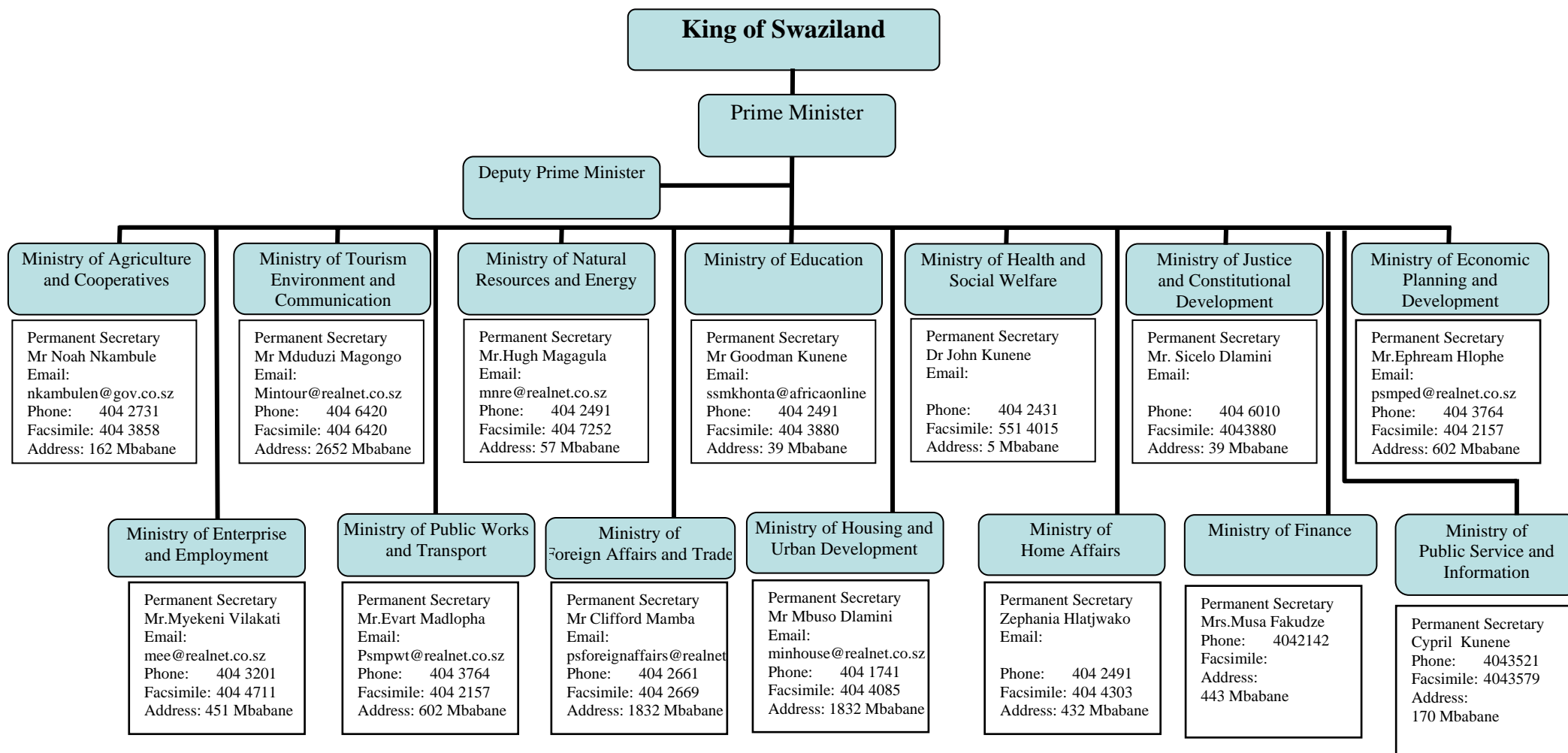
Swaziland is highlighted in black.

### 3.4.1 Institutional Arrangements

The Government of the Kingdom of Swaziland, outlined schematically in Figure 2, is currently comprised of the following ministries:

- |  |   |
|--|---|
| Office of the Prime Minister             | Ministry of Enterprise and Employment             |
| Deputy Prime Ministers Office            | Ministry of Natural Resources and Energy          |
| Ministry of Education                    | Ministry of Public Service and Information        |
| Ministry of Home Affairs                 | Ministry of Justice and Constitutional Affairs    |
| Ministry of Public Works and Transport   | Ministry of Housing and Urban Development         |
| Ministry of Health and Social Welfare    | Ministry of Economic Planning and Development     |
| Ministry of Foreign Affairs and Trade    | Ministry of Tourism Environment and Communication |
| Ministry of Agriculture and Cooperatives |   |

**Figure 2 Institutional Map of the Government of Swaziland**



Issues of global climate change affect all communities. Human activities contributing to the global carbon budget will affect climates and change the nature of the global environment. In doing so, they will in some way or other effect us all. As such we are all in some way or other involved in issues of the UN FCCC.

In terms of the national obligations and commitments under the UN FCCC the Government of Swaziland has assumed the national responsibilities. The Swaziland Environment Authority (SEA), under the Ministry of Tourism, Environment and Communication, has been mandated with responsibility for the UN Conventions. In addressing the provisions of the UN FCCC and meeting the national commitments contained therein the following sectors are considered important:

Agriculture	Transport
Environment	Hydrology & Water Resources
Energy	Education
Forestry	Biodiversity
Industry	Health
Manufacturing	

Institutions involved in these sectors are all in some way involved in contributing to the overall emission of greenhouse gases. The intention here is not to repeat the national reporting and determination of each emissions according to each of these sectors but rather to look at the national response under the UN FCC. From this the aim is to identify the degree of compliance with the provisions of the convention and areas in which Swaziland needs to enhance its existing capacity or perhaps develop new capacity.

As the national entity mandated with overall responsibility of the UN Conventions, this section first reviews the SEA under the MTEC. The SEA subsequently nominated the National Meteorological Services (NMS) in the Ministry of Public Works and Transport as the National Focal Point for the UN FCC. The second part therefore looks at the institutional arrangements within the NMS.

### **3.4.2 Ministry of Tourism, Environment and Communication**

The Swaziland Environment Authority (SEA), under the Ministry of Tourism, Environment and Communication, was appointed as the national coordinator responsible for the Convention. The role of the Ministry, established in 1996, is encapsulated in the following official mission statement;

***To ensure sustainable and equitable development through promotion of sound environmental principles, conservation of our national heritage, and efficient communication infrastructure, conducive to the Swazis and attractive to international visitors and to ensure efficient and effective custody of all recorded information.***

The MTEC was established through the amalgamation of several existing entities and encompasses the following responsibilities:

Swaziland Environment Authority

Environmental Protection

Administration of Game Act\*

Protection and development of wildlife (flora & flora)

Museums, archives & game parks

National Trust Commission

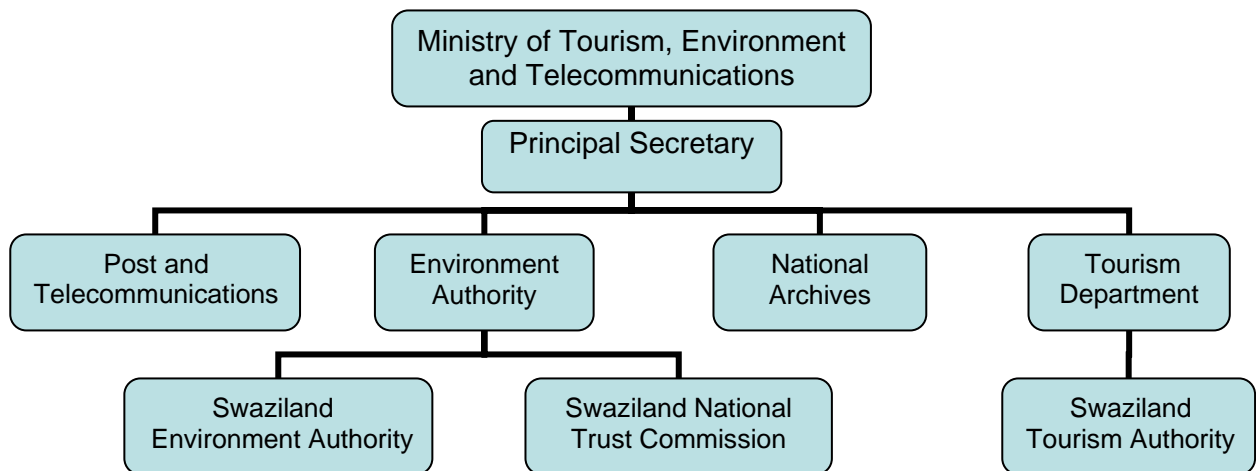
Liquor Licensing Board

Post and Telecommunications

Tourism and Gaming

\* The Administration of Game Act has subsequently been transferred to the King's Office.

There are no official organograms for the ministry and the following represents schematically the different departments and parastatals.



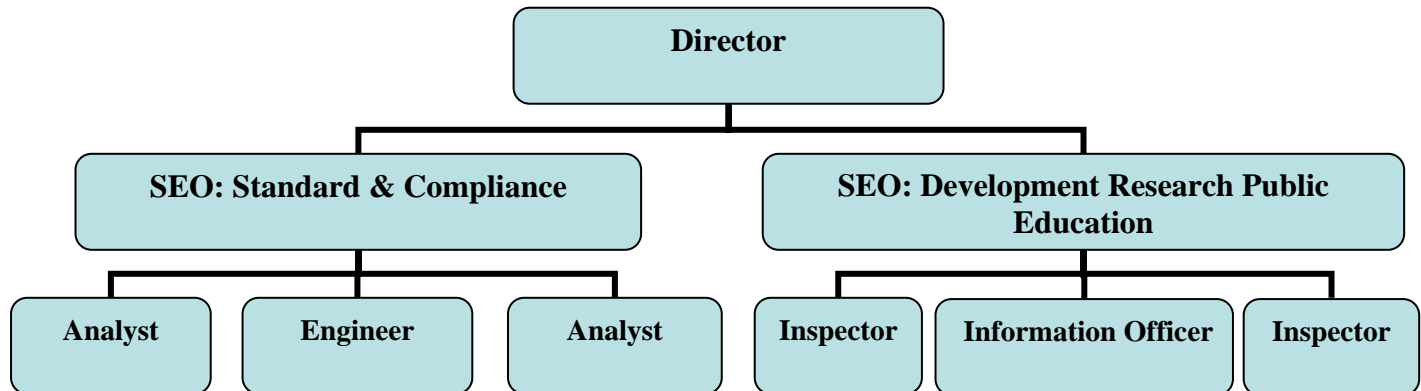
**Figure 3 Institutional map of the Ministry of Tourism, Environment and Telecommunications in Swaziland**

While the SEA has been given the national mandate under the UN Conventions, the Swaziland National Trust Commission (SNTC) is responsible for the development and administration of national parks and reserves, along with the identification of protection worthy areas and protection of national cultural heritage. The SNTC also coordinates the National Environmental Education Programme within Swaziland.

### 3.4.3 Swaziland Environment Authority

The SEA was first conceptualised in 1988 acknowledging the need for establishment of a national body to coordinate environmental activities. The SEA was established by statute in 1992 as a government department. The SEAs mission statement is:

**Ensure that Swaziland's development is environmentally, economically and socially sustainable, by means of promoting sound environmental policies, practices and development which meets appropriate national and international standards.**



**Figure 4 Organisational framework of the Swaziland Environment Authority**

The SEA comprises a governing body and a secretariat, which is the Department of Environment. The Board of the SEA is constituted according to the following;

According to the Swaziland Environmental Management Act (2002), the SEA is comprised of a governing body appointed by the Minister, including the following members:

- Director who serves as the Secretary of the Board but who may not vote;
- Principal Secretary of the Ministry responsible for environmental affairs;
- Principal Secretary of the Ministry responsible for agriculture;
- Principal Secretary of the Ministry responsible for finance;
- Principal Secretary of the Ministry responsible for natural resources and energy;
- A representative of the traditional authorities;
- A person from a non-governmental organisation or association of such organisations which has as a main purpose the promotion of environmental protection and/or the sustainable management of natural resources, who shall be appointed from among persons nominated by such organisations;
- A person involved in business in Swaziland who shall be appointed from among persons nominated from an organisation representing industry;
- A person noted for the person's special knowledge of, and interest in, environmental matters, who shall be appointed from among persons nominated by the public.

The Director of the SEA is seen as providing the key link between Swaziland and the international community on environmental issues. In order to ensure greater independence

and autonomy, the Environment Management Act provides for the SEA to become a body corporate, with additional responsibilities beyond those described and required under the original, repealed 1992 Environment Authority Act.

The Environmental Management Act identifies numerous functions of the SEA, including four major categories of work:

- (i) policy development and research
- (ii) environmental assessment and monitoring
- (iii) regulation and compliance
- (iv) education and information

The SEA has developed a business plan and a strategic plan for implementing the Environmental Management Act, and it has subjected the organisation to several diagnostic reviews. The SEA's approach includes numerous specific references about coordination of Swaziland's obligations and implementation of international Conventions.

The SEA has been supported through various donor involvements over the past decade such as DFID, UNDP, DACED and UNEP which has led to considerable growth. Beginning in 1993, the SEA had two staff, and it has now grown to more than nine permanent staff, reflecting its increased assumed responsibilities. The strategic plan for the future development of the SEA recommends a staff complement of approximately 44 permanent staff. Due to budget constraints, however, the revised estimate proposed to government is more likely to be in the order of 25 to 30 staff.

These are indicated in the outline of responsibilities given below. Under the functions and powers of Act No 15 of 1992 the SEA is to serve as the official focal point for co-operating and liaising with national and international organisations on environmental matters. This includes the following tasks and / or activities performed by SEA in fulfilment of this function, with staff allocations in days indicated in brackets;

Identify issues of national, regional and global significance  
(Senior Environmental Officer 1; Director 1)

Identify the relevant organisations / institutions  
(Senior Environmental Officer 1; Director 1)

Identify existing agreements and conventions  
(Senior Environmental Officer 1; Director 1)

Review and analyse documentation pertaining to these international conventions  
(Lawyer 2; Economist 2; Analyst 2; Senior Environmental Officer 2; Information Officer 2)

Make recommendations and disseminate to relevant national institutions  
(Senior Environmental Officer 1; Information Officer 1; Director 0.5)

Monitor implementation of recommendations  
(Information Officer 2; Inspector 2; Senior Environmental Officer 2)

Attend meetings and conferences  
(Senior Environmental Officer 2; Economist 2; Analyst 2; Lawyer 2; Engineer 2; Inspector 2; Information Officer 2; Director 2)

Follow ups and monitoring of country compliance to the conventions  
(SEO 1; Economist; 1; Analyst 1; Lawyer 1; Engineer 1; Inspector 1; Info Off 1; Dir 1)

	Director	Snr Env Off	Lawyer	Info Off	Economist	Analyst	Engineer	Inspector
1.	1	1						
2.	1	1						
3.	1	1						
4.		2	2	2	2	2		
5.	1	1		1				
6.		2		2				2
7.	2	2	2	2	2	2	2	2
8.	1	1	1	1	1	1	1	1
	7	11	5	8	5	5	3	5

The business plan recommends that this unit include two environmental economists, although these positions have yet to be filled.

In this context it is important to note that the SEA started in 1993 with two staff and has now grown to more than nine permanent staff, reflecting its increased assumed responsibilities. The business plan for the future development of the SEA recommends a staff complement of around 44 permanent staff. Due to budget constraints the revised estimate being proposed to government is more likely to be in the order to 25 to 30 people.

#### 3.4.4 Ministry of Public Works and Transport

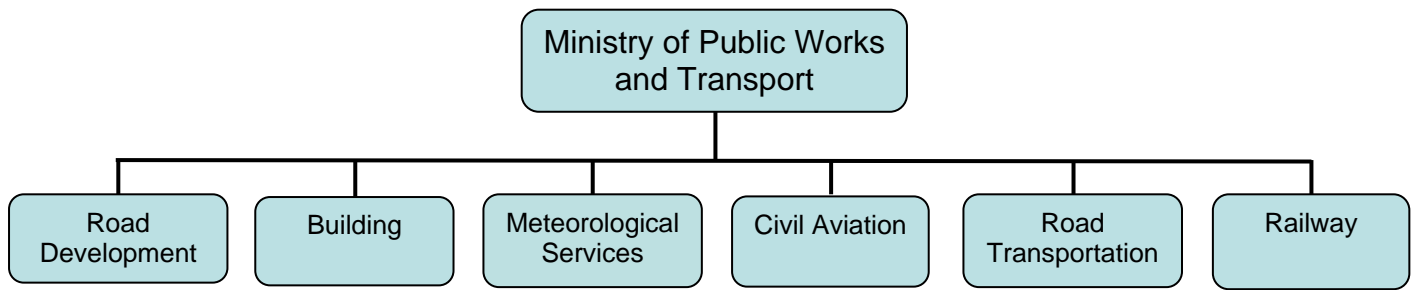
The SEA delegated the National Meteorological Services in the Ministry of public works and Transport as the focal point for the UN FCCC. The Ministry includes six departments. Of these it is only the focal point, the National Meteorological Service, which has any direct role to play in the UN Conventions.

This is reflected in the ministries mission statement, which is;

*To ensure the provision and maintenance of a sustainable public infrastructure, an efficient and effective seamless transport system and network, regulation for a vibrant construction and transport industry, management of public service accommodation and the provision of meteorological services.*

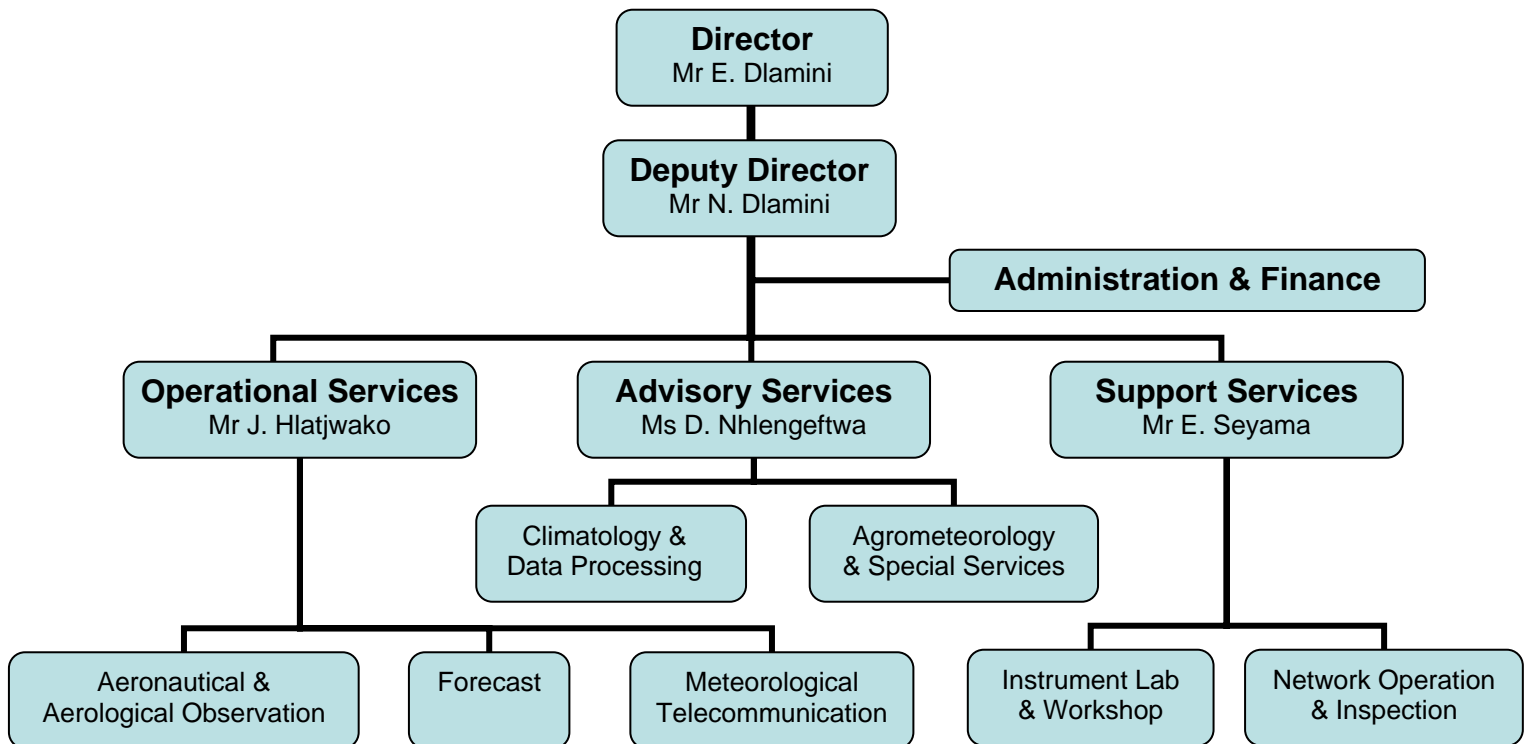
In carrying out its mission, the Ministry is committed to upholding safety and environmental standards for socio-economic development by making the best use of the country's available resources.

The organisational structure of the MPWT is defined below.



**Figure 5 Organizational structure within the Ministry of Public Works and Transport**

More specifically, the internal organizational structure of the National Meteorological Services and the infrastructural capacity that exists to inform the obligations and commitments under the convention is presented below. As with the other organograms this is not an officially recognised or published structure. It is based on the information gathered during this review phase.



**Figure 6 Organizational structure within the National Meteorological Services**

A network of various meteorological stations throughout Swaziland serves the NMS. These are summarised below, based on recent findings of the NMS internal audit. Such infrastructure is central to ensuring the capacity to monitor changes in the climatic condition.

### **3.4.5 UN FCCC National Steering Committee**

While the SEA is responsible for the national commitments under the UN Conventions, it has delegated the National Meteorological Services as the Focal Point under the UN FCCC. Under the auspices of the Focal Point a national project team was established to facilitate preparations of the first report to the COP. This team included a project coordinator and project supervisor, with fourteen researchers in assistance.

### **3.5 Reporting**

With support from the GEF Swaziland prepared its first National Communication, submitting it to the COP in 2002, in compliance with the provisions outlined under Articles 4 and 12 of the UN FCCC. Swaziland followed the UN FCCC guiding principles, namely consideration as a Non-Annex I developing country Party with special circumstances, the extent of its capabilities, regards for the common but differentiated responsibilities, and equity. The report was prepared using national consultants and represents Swaziland's first attempt to present an overview of with respect of the base year 1994, of:

- Its national social and economic context on the basis of which it will address climate change and its adverse effects and within which various interventions could be made;
- A national inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases using the IPCC 1996 Revised Guidelines;
- An assessment of the country's potential vulnerability to climate change and approaches for adapting to such change; and
- A general description of steps taken or envisaged by the country to implement the Convention.

The report provides an overview of the countries national circumstances, focussing on agriculture, forestry, industry and manufacturing, transport and major a description of major land uses. An inventory of green house gases is presented in line with the provisions and outline of the UN FCC. The report examines vulnerability and adaptation in different sectors along with an analysis of mitigation options.

### **3.6 Policy Measures**

In developing its response to issues of poverty alleviation, food security and the need to maintain an environmentally sustainable framework, the Government of Swaziland formulated the National Development Strategy (NDS) as the country's key policy framework. Adopted in 1999, the NDS details the long-term (25 year) vision for the country based on the identification of priority development objectives. The NDS acknowledges Swaziland's international obligations under various international Conventions along with the need for actions in ensuring compliance with these Conventions.

The Swaziland Environment Action Plan (SEAP) supports the National Development Strategy (NDS), as the Government of Swaziland's overriding development plan. The NDS outlines Swaziland's developmental goals for the next 25 years and is viewed as the highest-level policy document. The SEAP is the environmental equivalent of the NDS and

outlines the environmental development issues relating to Swaziland's sustainable development with recommendations for actions to promote environmentally sustainable development.

The NDS has spawned a variety of Ministerial policies, strategies and action plans all of which more clearly articulate the broad policy statements made in the NDS and SEAP. These in themselves represent an effort to integrate issues of sustainable development and can thus be considered within the context of the UN FCCC.

The following tables provide a summary of more recent policies and legislation developed which is of relevance to the provisions of the UN FCCC. The status of these has been verified telephonically with each of the respective ministries and is considered accurate as of November 30<sup>th</sup> 2004.

**Table 1 Policy, Strategies and Action Plans of the Ministry of Tourism, Environment and Communications in Swaziland**

<b>Ministry of Tourism, Environment and Communications</b>		
Policy / Action Plan / Strategy	Date	Status
The Swaziland Environmental Action Plan	1997	Adopted
The Environmental Management Act	2002	Adopted
The National Environment Policy	2000	Awaiting approval
The Swaziland National Solid Waste Management Strategy	2003	Awaiting approval
The Tourism Policy	2000	Approved
The Swaziland Biodiversity Strategy and Action Plan	2000	Awaiting approval
The Telecommunications Policy	2000	Status unknown

**Table 2 Policies and Action Plans of the Ministry of Agriculture and Cooperatives in Swaziland**

<b>Ministry of Agriculture and Cooperatives</b>		
Policy / Action Plan / Strategy	Date	Status
The National Action Programme of the UN CCD	2001	Adopted
The National Forest Policy	2002	Adopted
The National Forestry Programme	2002	Awaiting approval
The National Rural Resettlement Policy	2003	Adopted
The Livestock Development Policy	1995	Adopted
The National Dry lands Development Programme (NDDP)	2003	Awaiting approval
The Comprehensive Agricultural Sector Policy (CASP)	2004	Being formulated
The National Irrigation Policy	2004	Being formulated

**Table 3 Policies, Action Plans and relevant Acts of the Ministry of Natural Resources and Energy in Swaziland**

<b>Ministry of Natural Resources and Energy</b>		
Policy / Action Plan / Strategy	Date	Status
The National Land Policy	2000	Awaiting approval
The Mining Policy	2003	Awaiting approval

The Water Act	2003	Approved
The National Energy Policy and Action Plan	2003	Approved

**Table 4 Relevant Acts under the Ministry of Enterprise and Employment in Swaziland.**

<b>Ministry of Enterprise and Employment</b>		
Policy / Action Plan / Strategy	Date	Status
The Sugar Act	2000	Approved

**Table 5 Policies, Strategies and Action Plans of the Ministry of Economic Planning and Development in Swaziland**

<b>Ministry of Economic Planning and Development</b>		
Policy / Action Plan / Strategy	Date	Status
The National Development Strategy	1999	Adopted
The National Population Policy	2000	Draft
The Poverty Alleviation Strategy	2004	Being revised
The Aid Policy	2001	Being formulated

**Table 6 Policies and Development Plans of the Ministry of Housing and Urban Development in Swaziland**

<b>Ministry of Housing and Urban Development</b>		
Policy / Action Plan / Strategy	Date	Status
The National Housing Policy	2001	Approved
The Peri-Urban Growth Policy	1997	Draft
The Urban Government Policy	1996	Adopted
The National Physical Development Plan	1997	Adopted
Regional Lubombo Spatial Development Plan	2004	Draft
The Regional Physical Development Plan - Lubombo	2004	Being formulated
The Regional Physical Development Plan - Hhohho	2004	Being formulated

**Table 7 Policies of the Ministry of Public Works and Transport in Swaziland**

<b>Ministry of Public Works and Transport</b>		
Policy / Action Plan / Strategy	Date	Status
The National Transport Policy	2000	Awaiting approval
The National Construction Industry Policy	2002	Adopted

**Table 8 Policies of the Ministry of Health and Social Welfare in Swaziland**

<b>Ministry of Health and Social Welfare</b>		
Policy / Action Plan / Strategy	Date	Status
The Social Welfare Policy	1998	Awaiting approval
The HIV / AIDS Policy	2004	Being revised
The National Health Policy	2003	Awaiting approval

**Table 9 Policies and Action Plans of the Ministry of Justice and Constitutional Development in Swaziland**

<b>Ministry of Justice and Constitutional Development</b>		
Policy / Action Plan / Strategy	Date	Status
Codification of Swazi Law & Custom	1973	Continuing
Constitution		In process

**Table 10 Policies of the Ministry of Education in Swaziland**

<b>Ministry of Education</b>		
Policy / Action Plan / Strategy	Date	Status
The Education Policy	2001	Approved

**Table 11 Policies of the Ministry of Home Affairs in Swaziland**

<b>Ministry of Home Affairs</b>		
Policy / Action Plan / Strategy	Date	Status
The National Sports Policy	2001	Adopted
The NGO Policy	2001	Being formulated
The National Gender Policy	2000	Awaiting approval
The National Youth Policy	2003	Approved

**Table 12 Policies and Bills of the Deputy Prime Ministers Office in Swaziland**

<b>Deputy Prime Ministers Office</b>		
Policy / Action Plan / Strategy	Date	Status
The National Disaster Management Policy & Bill	1998	Awaiting approval
Millennium Action Programme 2003	2003	Adopted
Smart Programme on Economic Empowerment and Development	2004	Being Formulated

### 3.7 Research and Monitoring

There currently isn't any comprehensive monitoring of green house gas emissions. In reporting levels of green house gas emissions the National Communication had to use all of the default emission factors and ratios in the absence of any local specific values.

The NMS has an extensive network of climatic and agro-meteorological stations recording various data at different intervals. In addition, staff at the University of Swaziland have collaborated with the NMS in developing several forecast scenarios. There are also numerous monitoring initiatives beyond simply climate measures that could also assist in meeting the national needs for monitoring and detecting the effects of climate change. The University is involved in natural resources and ecological monitoring, which could be integrated to determine changes in the natural environment. The private sector, particularly the forestry and agricultural sectors also monitor their production, as do the Ministry of Agriculture and Cooperatives.

The National Communication notes concern over the source and availability of activity data in energy and other sectors, notably agriculture, land-use change and waste. This

information, if centrally stored or available, could assist in monitoring the effects of climate change and developing appropriate interventions for mitigation.

Given these issues the National Communication highlights the need for research and development on climate issues as they relate to Swaziland in an effort to support the country's efforts of meaningful intervention in such international processes.

### **3.8 Training and Education**

According to findings reported in the National Communication there is currently no formal education on climate change at the university or colleges, other than the general topics covered in geography and physical sciences.

### **3.9 Public Awareness and Exchange of Information**

The involvement of stakeholders in the process of preparing the National Communication has helped to raise awareness around issues of global climate change. In addition to facilitating preparation of the National Communication, the project was used to enhance general awareness and knowledge on climate change related issues in Swaziland. It further served to strengthen dialogue, information exchange and cooperation among relevant stakeholders (including governmental, non-governmental, academic and private sectors) with a view to increasing awareness around the convention and issues of climate change in general.

These measures have been supported by media coverage surrounding climate considerations and changing landscapes, in particular the international negotiations around the Kyoto Protocol. Despite these efforts and increasing awareness the National Communication acknowledges the need to increase efforts to expand public awareness campaigns at grass roots level.

### **3.10 Financial Mechanisms**

The process of reporting to the COP represents one of a number of commitments assumed by the government through ratification of the Convention. Due to national financial constraints this process has been supported financially through donor involvement.

The National Communication acknowledges "Swaziland's financial resources are not adequate for use in making a meaningful intervention in the Conventions implementation". Financial support is recognised as being central to successful implementation of the measures outlined in the report. As such, and given the international nature of climate change, the report calls upon an international joint effort with the support and assistance from other partners.

The COP has established numerous financial mechanisms (see Section 3.2.7) to which countries may apply for grants and loans. These include:

- A Special Climate Change Fund to finance projects relating to capacity-building, adaptation, technology transfer, climate change mitigation and economic diversification for countries highly dependent on income from fossil fuels. It is intended to be complementary to other funding mechanisms.
- A Least Developed Countries Fund to support a special work programme to assist LDCs.

- An Adaptation Fund that will finance practical adaptation projects and programmes in developing countries, and also support capacity-building activities. Parties to the Protocol have to report yearly on their contributions to the fund and the COP/MOP will review these reports.

The government has approved the formation of a National Environment Fund which has been proclaimed by an Act of parliament - the Environmental Management Act. Initial funding is to be provided by government allocation with additional support being sourced from donors.

### **3.11 Capacity**

Despite acknowledging various capacity issues and the need to develop capacity in certain areas, there have not been any subsequent specific studies to address these constraints to successful implementation. Preparation of the National Communication identified and highlighted a number of capacity requirements if Swaziland was to effectively engage and implement the provisions of the Convention. These included;

- Insufficient instrumental climate data to reliably construct past climates;
- Weak institutional infrastructures for facilitating a continuous process of undertaking such assessments and related activities;
- Inadequate local technological capacity to expedite in an effective manner the tasks of undertaking the assessments;
- Lack of comprehensive local data and country-specific information to support the studies;
- Inadequate financial resources for making a meaningful intervention in the Convention's implementation;
- Lack of country-specific emissions factors and ratios, particularly in firewood combustion, agriculture, land-use change and forestry, and waste;
- Need for capacity building through local institutions;
- Lack of alternative source of energy especially in rural areas to facilitate the reduction of CO<sub>2</sub> emissions;
- Lack of transport alternatives such as solar vehicles to effectively cut fossil fuel consumption;
- Lack of land use management knowledge in rural areas to enhance storage of CO<sub>2</sub> in agricultural lands.

## **4 S W O T ANALYSIS**

### **4.1 Purpose and Method**

The SWOT analysis is aimed at consolidating and interpreting the findings from the review of commitments contained in the UN FCCC and Swaziland's response as Party to the Convention. The SWOT was based on consolidation and interpretation of findings from the stock-take review and assessment culminating in a consultative analysis with key

stakeholders. The SWOT aids in identifying gaps, by looking at strengths and weaknesses in existing structures, policies and approaches in relation to the Conventions obligations and commitments.

As is customary the SWOT makes a distinction between internal and external factors. These may guide or restrict the development of capacity. The nature of the Conventions means that internal factors reside largely in government structures and processes, whilst external factors refer primarily to matters outside of the government (for example donor policies and funding allocations).

The purpose of the SWOT is to engage stakeholders and assist in identifying gaps by looking at strengths and weaknesses in existing structures, policies and approaches in relation to the Conventions obligations and commitments. The SWOT was facilitated at the NCSA stakeholder workshop. Thirty-two key stakeholders participated in the workshop. Participants were divided into three groups under each of the UN Conventions. A fourth group included each of the Conventions Focal Points and the NCSA Project Coordinator. A plenary session was subsequently used to report the findings of each of the groups and to explore issues raised therein.

The SWOT was carried out using the headings derived from the review and analysis phases. These identify and outline the following key areas of obligations upon countries that are Party to the UN Conventions.

- Reporting Requirements
- Policy and Legislation
- Research and Monitoring
- Training and Education
- Public Awareness & Exchange of Information
- Financial Mechanisms
- Capacity

The results from the SWOT analysis were used to identify weaknesses, interpreted as capacity constraints, from which the specific capacity needs and priorities were identified. This was facilitated through a Root Cause Analysis. Time did not permit detail exploration during the stakeholder workshop. Follow-up interviews with key stakeholders and internal working sessions were therefore used to determine the cause of the identified constraints. These were further explored to derive appropriate interventions and activities that would lead to overcoming these.

## 4.2 Overview of Reporting Requirements

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• UN FCCC signed</li> <li>• Government commitment – focal points, steering committee established</li> <li>• Capacity exists</li> <li>• National inventory prepared</li> </ul>	<ul style="list-style-type: none"> <li>• Factors constraining access and utilisation of existing capacity</li> <li>• Lack of financial resources / independence</li> <li>• Donor dependency for reporting</li> <li>• No clearly defined responsibility</li> </ul>

<ul style="list-style-type: none"> <li>• First report submitted / second report been prepared</li> <li>• Individual commitment</li> <li>• UN FCC clearly articulates reporting requirements and format for reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of financial sourcing management and expertise</li> <li>• Expertise brain drain</li> <li>• Lack of incentive</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Convention provisions</li> <li>• COP experiential learning</li> <li>• Donor funding, GEF, CDM</li> </ul>	Shift in donor allocations / priorities

Swaziland has demonstrated its commitment to issues associated with Climate Change through its ratification of the UN FCCC. This commitment has been translated into action through the identification of national Focal Points and the establishment of a national steering committee. These have overseen the preparation of the countries national inventory of green house gases, conducted in line with the commitments outlined in the UN FCCC. The countries second report is being prepared and is assisted by the provisions and details outlined in the UN FCCC and associated instruments.

While Swaziland has successfully completed its inventory there has been limited additional reporting due to lack of funding to carry out the activities. Preparation of the report has demonstrated that Swaziland had sufficient capacity to ensure reporting under the UN FCCC, although the limited number of those with appropriate knowledge and experience has necessitated the use of consultants from outside the country. Demands placed on the limited number of individuals with such experience further results in their capacities not being utilised effectively. The volume of material relating to the UN FCCC, which is often highly technical in nature and requires detailed review and consideration, compounds this. Those currently responsible for considerations pertaining to the UN FCCC are too few in number to accommodate all of the responsibilities required of them. In comparison, many developed nations have entire departments dedicated to addressing the provisions of the UN FCCC. The existing description of responsibilities within these organisations does not cover obligations as national Focal Points and coordinators. This means that any activities undertaken in fulfilment of the national responsibilities are over and above the incumbent's normal responsibilities. The business plan for the SEA attempts to address this issue, although is yet to be effected.

The current reports have been prepared with external financial support. While the SEA has overall responsibility for the national commitments under the UN Conventions, and a Focal Point has been appointed under the NMS of the MPWT, none of these organisations currently have any dedicated funded allocated to cover additional reporting activities.

These lack of resources means that formulation of reports under the UN Conventions are dependent upon extra-ordinary budget allocations or more typically external financing through the conventions financial mechanisms or donor agencies. The lack of incorporation of responsibilities into the every day functions of the Focal Points also means that while they may have the technical capacity they are not afforded the time to facilitate the preparation of reports and so rely heavily on external inputs. There are a number of consultants within Swaziland with the necessary expertise to facilitate such

reporting obligations and the first national communication was prepared by personnel from Government, the University of Swaziland, various NGOs and other stakeholders.

Although not specifically addressed under this assignment, a number of opportunities have been identified. These need to be viewed in relation to strategic development and positioning of Swaziland’s capacity. These include the provisions of the UN FCCC itself. Familiarisation with these provisions open a number of opportunities with which responsible agents can affect national options for future developments, through such as the CDM. The COP itself offers opportunities to learn from the experience of other nations and also to develop national expertise and on how to access appropriate funding. The issue of funding has also been identified as a key threat, with a lack of financial sustainability making any interventions and initiatives susceptible to changes in donor focus.

### 4.3 Overview of Policy and Legislation

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Policy and Legislation is available in different Government Ministries and Departments</li> <li>• Increasing levels of integration</li> <li>• National disaster management policy formulated</li> </ul>	<ul style="list-style-type: none"> <li>• Current policy and legislation does not cover climate change directly</li> <li>• Legislation is fragmented</li> <li>• Lack of capacity to address rapid climate change</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Utilization of GEF and CDM funds to develop appropriate policy and legislation</li> </ul>	<ul style="list-style-type: none"> <li>• Low priority of climate change issues in Government decision mechanism could lead to loss of GEF and CDM funding</li> <li>• Not enough information available to allow communities to adapt to environmental change</li> </ul>

There are no specific policies or legislation dealing with the effects or causes of climate change. While the country has an extensive and increasingly integrated policy framework issues addressing the causes and effects of climate change are fragmented. This is reflected in part by the designation of the NMS under the MPWT. The position of the NMS reflects historical affiliations and reporting requirements. These are changing and need to be addressed. The NMS operates in an organisational environment which is external to the typical natural resource and environmental management fields. As such integration and coordination of initiatives is further complicated.

The long time frames and uncertainty associated with the effects of climate change result it in receiving low priority on the national agenda. With limited resources available at the national level the focus has been toward issues that are perceived to be more important and of greater urgency, such as poverty alleviation and HIV. The failure to include considerations of the long-term implications of changing climates could undermine the viability and success of such initiatives. The MOAC CASP has demonstrated how such issues can be included into policy and planning through inclusion of considerations relating to climate change on the nations agricultural productivity. One of the key weakness of much of the existing legislation the failure to include such provisions, highlighting the opportunity to review such policies and strategies to ensure appropriate

considerations and revisions. South Africa, one of the regions biggest contributors to green house gas emissions, has prepared an over-arching climate change response strategy aimed at achieving a similar review and revision in light of the potential impacts associated with climate change. In this respect, there is a need to increase awareness among all stakeholders, including importantly, decision makers, local communities, government agencies and the private sector.

#### 4.4 Overview of Research and Monitoring

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Availability of research institutions and NGOs</li> <li>• Availability of local expertise</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of funding</li> <li>• Lack of financial sourcing management and expertise</li> <li>• Gaps in climatological information and inadequate coverage</li> <li>• Lack of specific country greenhouse gas emission factors</li> <li>• Focus on climatological data, narrow focus.</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Utilization of GEF and CDM funds</li> <li>• Utilization of National Environmental Fund</li> </ul>	<ul style="list-style-type: none"> <li>• Shift in donor fund allocations and government priorities</li> <li>• Expert brain drain</li> </ul>

Research and monitoring are critical to detecting changes in climatic condition and determining the contribution to global emissions. The lack of specific emission factors undermines the accuracy of national efforts to determine contributions to greenhouse gases. It should be acknowledged that the small size of the country and similarities with neighbouring states affords the opportunity to extrapolate local and regional factors. The regional context also needs to be acknowledged with respect to the overall contribution of green house gases, with Swaziland contributing a relatively small proportion in comparison to larger neighbours like South Africa.

Swaziland collaborates with the SADC Drought Monitoring Centre in information exchange. The mission of the SADC Drought Monitoring Centre, which is based in Harare, Zimbabwe, is:

“To provide member states and the international community with advance information on food security prospects in the region through assessments of expected food production, food supplies and requirements.”

The Centre also receives meteorological information from member states and uses this information to provide its members with rainfall forecasts information and thus early drought warnings.

However, the determination of changes in climate requires extended periods of uninterrupted data collection and the employment of appropriate models. Currently the existing climatic record presents a number of gaps. These can be patched but efforts need to be made to enhance capacity to ensure that this are not repeated. The maintenance and

operation of the meteorological network is obviously dependent upon adequate funding which in turn needs to be supported by effective information management systems to ensure appropriate cataloguing, access and dissemination.

#### 4.5 Overview of Training and Education

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• National Environmental Education Programme</li> <li>• Tertiary education institutions</li> <li>• Size of the country</li> </ul>	<ul style="list-style-type: none"> <li>• Climate change issues not included in primary and high school curriculum</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Utilization of GEF funds</li> <li>• UNEP education, training and awareness partnership</li> <li>• Clearing house mechanism</li> </ul>	<ul style="list-style-type: none"> <li>• Low priority of climate change issues in Government decision mechanism could lead to loss of GEF and CDM funding</li> </ul>

In acknowledging the need to improve environmental education measures, Swaziland has developed a National Environmental Education Programme (NEEP). Implemented under the auspices of the SNTC the NEEP is aimed at integrating environmental issues into educational structures and increasing awareness around environmental issues and how best to deal with them. However, issues of climate change and the causal relationships behind this are not included in school curricula. Global issues such as those of climate change can provide an important tool to facilitate understanding of the need for data, monitoring, negotiation and the uncertainty associated with statistical analyses and therefore serves as a useful teaching tool.

Issues of climate change are technically challenging, and most appropriate would be to link training and education to research and monitoring at the tertiary level. This is hampered by access to funding and long term directed and supported research programmes. The capacity exists within Swaziland to develop appropriate curricula, although suitably qualified individuals are limited in number.

The UN FCCC has developed numerous financing mechanisms, and opportunities exist to access funds for the development of appropriate curricula through the GEF. Such curricula can be developed for primary, secondary and tertiary education institutions that cover in fully climate change and its implications/only two languages and good media coverage. The Secretariat is also developing a clearing house mechanism to facilitate the dissemination of material pursuant with the UN FCCC. This was expected in 2004 and should become available soon.

#### 4.6 Overview of Public Awareness and Exchange of Information

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Public awareness campaigns</li> <li>• Tinkhudla (constituencies) system</li> <li>• Establishment of the GIS Swazi facility</li> <li>• Use of Radio and TV media</li> </ul>	<ul style="list-style-type: none"> <li>• No dedicated funding</li> <li>• No sound framework for integration</li> <li>• No formal regional networks</li> <li>• Poor Internet facility coverage</li> </ul>

<ul style="list-style-type: none"> <li>• Educational visits by scholars to weather stations</li> </ul>	<ul style="list-style-type: none"> <li>• Language barrier in utilizing internet facilities</li> <li>• Regional information exchange</li> <li>• Lack of regional response strategy</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Internet</li> <li>• Workshops</li> <li>• Short courses</li> <li>• Networking</li> <li>• GEF and CDM funding</li> </ul>	<ul style="list-style-type: none"> <li>• Low priority of climate change issues in Government decision mechanism could lead to loss of GEF and CDM funding</li> </ul>

The lack of public awareness around issues of climate change is one of the greatest threats to capitalising on the incentive mechanisms of the Convention and to minimising the effects of climate change. Such mechanisms have only recently come into force and while there have been few initiatives to date there is now an increased need to ensure mobilisation of resources around awareness of stakeholders. The UN FCCC makes numerous commitments to increasing public awareness and the exchange of information but as yet has developed little in the way of a tangible strategy. At the national level the allocations of radio time provide an excellent opportunity to disseminate information. The integration of climate change considerations into policy development and implementation provides further opportunities to increase the profile and awareness around the issue of climate change and how it may affect Swaziland.

A general observation has been the number of different agencies involved in education and awareness initiatives that has resulted in a large degree of uncertainty around responsibilities. Many have of these have failed to integrate a nationally cohesive approach within national or regional umbrella programmes and policies.

Additional measures for increasing awareness and the exchange of information include those on the technical level, through participation in international meetings, such as the COP and its various panels.

#### 4.7 Overview of Financial Mechanism

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• National Environment Fund proclaimed</li> <li>• First communication gives baseline</li> </ul>	<ul style="list-style-type: none"> <li>• NEF not operational</li> <li>• project funds used to cover human resources from government</li> <li>• heavily reliant upon extension services</li> <li>• reliance upon government funding</li> <li>• Lack of financial sourcing management and expertise</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• International funding mechanisms (GEF and CDM)</li> <li>• Donor willingness to fund projects and research</li> </ul>	<ul style="list-style-type: none"> <li>• Alternate priorities for funding by GOS and Funders i.e. HIV/AIDS</li> <li>• Donor reliance</li> </ul>

• Funding of reporting obligations	
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Most reports, studies and document reviews pinpoint a lack of adequate funding as being one of the most significant factors in preventing successful implementation and realisation of the objectives of the UN Conventions. Limited funding is available from government sources, and day-to-day activities of the focal point are financed through existing budgets to the NMS.

The most critical problem for government departments exists in obtaining funding for projects and financial assistance for design, management and implementation. Existing government budgets are very limited and considered insufficient for the implementation of any significant land management or rehabilitation projects. While possessing technical skills many government departments, NGOs and community groups do not have the experience and skills to access external funding. With the Conventions financial mechanisms coming into effect the private sector will require improved capacity and access to information in order to capitalise on the opportunities presented under the UN FCCC.

The Environmental Management Act passed by Parliament has established a National Environment Fund, but this fund is not yet operational. The intention is that seed finances will be provided by government with supplementary funding to be sourced from international donor agencies.

The UN FCC, specifically with recent ratification of the Kyoto Protocol provides mechanisms for developing countries in particular to access financial resources (GEF, CDM etc.) and secure development opportunities through strategic partnerships. The Clean Development Mechanism (CDM) is a fund established by UN to help developing countries in the implementation of projects that will lead to the reduction in the emissions of greenhouse gases. Therefore, Swaziland needs to ensure it is positioned with the appropriate capacity to take advantage of these, such as negotiation skills, the time and skills to access and prepare submissions for funding.

#### 4.8 Overview of Capacity Findings

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Tertiary institutions</li> <li>• Capacity is available in Government Departments</li> <li>• Size of the country and good Social cohesion</li> </ul>	<ul style="list-style-type: none"> <li>• Brain drain</li> <li>• Lack of individual and group incentives</li> <li>• Poor working conditions in some sectors</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• GEF and CDM funding</li> <li>• Training in specific specializations</li> <li>• Workshops to increase capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Low priority of climate change issues in Government decision mechanism could lead to loss of GEF and CDM funding</li> </ul>

Although the definition of capacity within this report includes systemic, organisational and individual considerations those under the UN FCCC typically refer to individual capacity. There have not been any previous studies looking specifically at capacity issues in relation to implementation of the provisions under the UN FCCC. The level of expertise required for integration of concepts and information related to the UN FCC is high and specialised. The capacity of the country to absorb professionals in this field is limited. As a result there is little organisational, nor indeed national, redundancy. Redundancy is taken to mean the ability to absorb or replace an individual with specific skills.

Despite this, with strategic interventions and support, the country is acknowledged as having the technical capacity to meet the objectives of the UN FCCC. However, the limited number of individuals with such capacity often presents a problem. Individual staff members are often placed under heavy burdens required to provide inputs to government, as well as NGO and community initiatives. The rapid change of pace in information and technical nature of the arguments around climate change debates requires sufficient time to develop the level of understanding required to enter into negotiations and facilitate appropriate interventions. The highly specialised nature of this field, along with the limited number of trained professionals, combined with sometimes difficult working conditions, has the potential to result in significant loss of talent to the regional and international market. In a small country like Swaziland, with a limited number of practitioners, where there is little redundancy and capacity to absorb such losses and replace institutional memory, the effects can be significant.

Although there have been numerous initiatives to examine capacity constraints within Swaziland there still remains a lack of a clearly defined national strategy for over-coming these. Many government departments lack the capacity to absorb special projects, such as those implemented under the UN Conventions. Most departments are under staffed and experiencing heavy work loads, which make it difficult to subsequently absorb additional responsibilities associated with project management and implementation.

#### 4.9 Overview of Findings from the SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Strong post-independence governance</li> <li>• Signatory to all UN Conventions – CCD, FCCC and CBD</li> <li>• Technical capacity exists nationally</li> <li>• Comprehensive Policy framework</li> <li>• Institutional framework strong &amp; clearly defined</li> <li>• Active awareness programme</li> <li>• Capacity exists within areas of expertise under the UN FCCC</li> <li>• Community structures strong</li> <li>• Good avail capacity</li> <li>• Institutions good</li> <li>• Policy / legislation</li> <li>• Public awareness and educational system strong</li> <li>• Size of Kingdom</li> </ul>	<ul style="list-style-type: none"> <li>• Short post-independent history</li> <li>• Size of Kingdom</li> <li>• Organizational structures poorly articulated</li> <li>• Policy – institutional linkages poorly defined</li> <li>• Policy &amp; legislation difficult to apply</li> <li>• Financial commitment</li> <li>• Lack of institutional linkages</li> <li>• Confusion with respect to UNISWA and coordination of research – not functioning</li> <li>• Coordination of research</li> <li>• Implementation slow</li> <li>• Lack of finance</li> <li>• Link between policy development &amp; economic planning</li> <li>• No integrated research &amp; monitoring strategy</li> <li>• Communication and linkages</li> <li>• Reliance on consultants for reporting</li> </ul>

<ul style="list-style-type: none"> <li>• Strong commitment to principles of sustainable development</li> <li>• Action plans, articulated and clear priorities with respect to financial and human resources</li> <li>• Tertiary level syllabus available</li> <li>• Individual commitment</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of specific mandates relating to Conventions</li> <li>• Research requests going to wrong institution / division or department</li> <li>• Communication and linkages</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• The UN Conventions</li> <li>• Strong international &amp; regional policy environment</li> <li>• Non-enforceable multi-lateral agreements</li> <li>• SADC institutional and policy framework</li> <li>• Financial – global funds, donor willingness</li> <li>• Establishment of a single international conventions / agreements unit</li> <li>• Action plans, art clear priorities between financial and human resources</li> <li>• South Africa positioned as strong global player / contributor</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of enforceability of multi-lateral agreements</li> <li>• Non-compliance with Conventions</li> <li>• Poor performance</li> <li>• Lack of objective self analysis &amp; criticism</li> <li>• Motivation &amp; responsibility</li> <li>• Donor dependency - willingness of donors decreased over past 10yrs</li> <li>• Willingness of donors decreased over past 10yrs</li> <li>• Government not always finding proper channels to facilitate funding</li> <li>• Donor time frames and lack of clarity</li> <li>• Donors also not finding proper govt channels to facilitate donor funding</li> <li>• Approaching &amp; accessing global funds</li> </ul>

## 5 CAPACITY CONSTRAINTS

The SWOT analysis reveals some interesting observations. While it is important to acknowledge the strengths, the aim of the assignment is specifically to focus on *capacity constraints and priorities* in meeting the binding commitments under the UN Conventions. For this reason this section examines in more detail the weaknesses. These are interpreted for the purpose of this report as representing capacity constraints for which priority interventions are needed to overcome if the intention of the UN FCCC is to be realised.

General consideration reveals that reporting requirements have been relatively well addressed. The obligations to report to the various COPs are usually met through discrete projects, variously funded nationally and through donor support. From review of the information prepared thus far for the COPs, it would appear that there is sufficient capacity nationally to address most of the reporting requirements. These are facilitated by the clearly articulated requirements under the provisions of the Conventions.

The other categories of commitments outlined above have received less attention in terms of the national response. These often represent more subtle interventions, activities or programmes that are more diffuse and difficult to evaluate and immediately identify. The findings from the SWOT have been consolidated to facilitate examination of some of the systemic, institutional and individual capacity requirements considered necessary to fulfil the commitments contained within the UN FCCC. To reiterate, these can be defined as;

*Systemic Capacity:* refers to organisational concerns in creating “enabling environments”. This includes policies and plans, economic, regulatory and accountability frameworks within which institutions and individuals operate, the

relationships that exist, both formally and informally, between institutions and the distribution of institutional responsibilities.

*Organisational Capacity:* refers to institutional levels, focusing on the overall performance and functional capabilities of an organisation, access to finances, information, technology, infrastructure and other resources, its organisational structure and its ability to adapt to change.

*Individual Capacity:* refers to specific attributes enabling individuals to perform functions, make decisions and ensure these are implemented in an effective, efficient and sustainable manner. Common definitions include human resources, ecological and geographical conditions, scientific and technological capacities, levels of education, formal and informal skills development programmes, levels of responsibility, participation and accountability in decision making, understanding of roles and functions, incentives, salary structures, motivation and morale.

## 5.1 Systemic Capacity

One of the biggest challenges facing realisation of the objectives behind the UN FCCC is related to awareness. The time over which the effects of climate change are likely to be felt along with the lack of certainty around how these effects will manifest reduces the perceived importance in many developing countries faced with what are considered more pressing issues. There is an additional lack of recognition of the socio-economic gains that can be derived from implementation of the UN FCCC. This arises from a general lack of awareness and understanding among stakeholders, particularly those in the private sector of what the national commitments are under the Convention and how they, as private sector, may contribute to the emission of green house gases or mitigation thereof.

The lack of awareness also relates in part to a lack of political will, understanding and commitment at government level to implement the provisions contained within the Convention. The issues and implications as a result of climate change are long-term changes. The development of an enabling environment for engaging the UN FCCC requires political support that extends beyond the initial signing and ratification of the Convention. The effects of climate change also extend far beyond those of politicians. This influences many of the systemic capacity needs that are described below.

Awareness among decision or policy makers, with the requisite political will and commitment is needed for a legislative framework that can accommodate and facilitate financial allocations from government budgets. Without an appropriate legislative or strategic framework to ensure the provisions of the Convention are translated into action at a national level governments are unable allocate funds. In the absence of such recognition any Climate Change programmes will typically be supported only through sources of funding external to the national budget. Sourcing this funding, (GEF, CDM etc.) requires specialised expertise, appropriate contacts and time to dedicate to the preparation of proposals.

Time is considered one of the most limiting factors. The collation of information needed to inform the determination and monitoring of climate change is exhaustive. This information is currently scattered among numerous government departments, nationally as well as at smaller administrative levels and within the private sector. Contributions

from the private sector also need to be included in all determinations, requiring strong collaborative mechanisms. These are needed to facilitate the sharing of information and facilitating partnerships between government and industry.

There is a clearly recognised need to establish and provide support for a dedicated unit common to all conventions which can create awareness around and promote issues and projects pertaining to Swaziland's priorities in relation Climate Change. Such an institution would also facilitate the development of an enabling environment by increasing awareness and linkages between government and the private sector. This would help to overcome the legal, institutional and individual challenges in accessing funding and strengthen support in negotiations with other Parties to the Convention.

## **5.2 Organisational Capacity**

At the organisational level there is a need to ensure sufficient financial resources to fund activities inherent to the UN FCCC. This should include supporting delegations to attend meetings of the COP rather than a single individual. This would assist in strengthening the institutional memory and increase organisational redundancy. A fund, or budget line, would also enable opportunities to facilitate research directed at national issues and meet obligations under Article 5 of the Convention (see Annex 1).

Technical capacity to evaluate and implement climate change policies and measures to advise and inform provisions of Convention needs to be supported and strengthened through appropriate training measures as governed by Article 6 of the Convention. Analytical tools for climate change, such as model and emission factors need to be determined or extrapolated from neighbouring countries. This process should be supported through research driven by a central, coordinated body. This would provide direction and strategic focus to research initiatives. The development of such capacity will in turn support negotiating skills within regional and international fora.

To be effective, individual institutions need clearly defined lines of responsibilities, mandates, mission statements and organisational visions. These need to be linked with corresponding levels and acknowledged accountability. The current position of the Focal Point, within the NMS, is isolating. The Ministry is not mandated with environmental management measures and has other core focus in the national framework. The position also makes it more difficult to engage with other key ministries and departments through official channels.

Given the impending opportunities afforded to developing countries under the provisions of the UN FCCCs mechanisms (GEF, CDM etc.), there is an urgent need to position the country strategically to take advantage of these. The implications of climate change on Swaziland are broad, encompassing numerous environmental considerations and touching most facets of the fabric of society. The NMS represents the logical location for the Focal Point, and it has proven it has the capacity to manage the national commitments under the convention. There is a need to strengthen the position of the NMS with respect to integration and interaction with other departments and ministries, particularly where the impact of climate change impacts directly on these institutions to fulfil their national mandates. The UN FCCC includes provisions for the development and implementation of action plans and mitigation strategies with respect to sectoral response to the impacts of

climate change. The NMS should be given the resources and mandate to coordinate and champion such an initiative.

The breadth of involvement in monitoring the effects of climate change and the measures needed to mitigate requires a comprehensive and inclusive mechanism that encompasses all sectors of society. In order to encourage mitigation measures and move toward the reduction of emissions, there needs to be organisational investment and support for the development and implementation of cleaner technologies. These need to be tried, tested and subsequently promoted through the development of appropriate policy and incentive mechanisms. This can only be achieved if there is a single champion with access to the right information and the key decisions makers.

### **5.3 Individual Capacity**

Individual capacity is central to successful realisation of the provisions of the Convention. Capacity requirements therefore need to address career progression and security of employment tenure, providing opportunities for accessing training, networking opportunities and ensuring career progression. Security of tenure applies to government, academics, local consultants and practitioners. Given the specialised nature of skills required to address issues of climate change, and the limited availability of these (see Figure 6) within the country, there is a high probability of losing staff to the private sector or neighbouring countries. Measures are needed to ensure that such staff are retained.

This will be achieved through the introduction of incentive mechanisms (such as allowances). Skills refreshment programmes can ensure that staff motivation is maintained, facilitating career progression, that personal are retained and institutional memory is preserved.

There is a need to increased public awareness and inculcate individual awareness among learners from early age. Therefore, there is a need to include climate change issues in the curriculum of primary school, high school and at tertiary institutions. This is required under the provisions for training and education Article 6 of the Convention along with Article 12 which requires information to be communicated.

The enhancement and development of individual capacity, in terms of realising the objectives of the Convention can be achieved through relatively simple steps. These initial measures should include development of clearly defined mandates and job descriptions with associated responsibilities for incumbents. This will afford a sense of empowerment and ownership and engender greater responsibility.

## **6 ROOT CAUSE ANALYSIS**

### **6.1 Purpose and Method**

Although time constraints at the workshop prevented a facilitated participatory process the findings of the review phase and the inputs from the stakeholder working groups were interrogated further using a root-cause analysis to identify the underlying, or root, cause of the specific weaknesses which have been equated to capacity constraints.

The causal factors identified through this process will be used in the next chapter to define the key capacity constraints, from which capacity needs will emerge. These will be

addressed through the formulation of specific interventions, actions and strategies to overcome these and realise the objectives of the Conventions within the context of the Kingdom of Swaziland.

Human resources are often cited a common generic constraint. Swaziland has a number of well trained and highly motivated staff that exhibit a strong commitment. Problems associated with and stemming from a lack of time and staff retention, result from sometimes poor working conditions and heavy demands have the potential to undermine the levels of motivation and commitment. Many of the issues at the cause of these are related.

Lack of finances is often cited as another common problem. The lack of available funds for implementing climate change projects is reported to have reduced the motivation and commitment to the process as a whole. The reality is that funds exist. Money is available at the national level as well as through support from international structures, such as the GEF and the various funding instruments of the UN FCCC. The problem is that there are competing factors all vying for the same funds, which are limited. Issues of climate change have to compete for funding against other issues, all of which are just as deserving and as important. The problem can therefore be defined as a problem of accessing funds.

To ensure realisation of the intention behind the various policies and to ensure that the issues of climate change are incorporated into policy development and revision, there is a need to ensure that the appropriate government levels have the right levels of awareness of the issues. The NMS needs a broader mandate to coordinate and facilitate such integration and revision and the process as a whole needs to have access to senior government officials who can effectively push the agenda and champion issues pertaining to climate change!

## **6.2 Conclusions Findings and Outputs**

From the preceding chapters the main constraints and priorities have been identified and are summarised below. These will be interrogated further using a logical framework analysis in the following chapter. This will serve to develop specific activities and interventions to overcome these constraints. Specific constraints and priorities relate include the need to:

- improve availability and access to limited funding
- develop skills based to design, prepare and source funding for climate change projects
- develop appropriate mechanism to take advantage of opportunities afforded under the UN FCCC, Kyoto Protocol and financing instruments of the UN FCCC (such as GEF and CDM)
- enhance and engage existing capacity more effectively with view to strengthening motivation through improved working conditions and incentives.
- resolve institutional ambiguities
- strengthen policy linkages with institutions
- improve collation and feedback mechanism with respect to project success and failure, lessons learnt

- increase awareness among local communities and all stakeholders with a view to inculcating a positive, engaging attitude
- increase awareness among political structures with a view to garnering support
- increase of exchange of information through networking among Government Departments and regionally
- develop Encourage /Implement alternative sources of energy with a view of reducing greenhouse gas emissions
- promote the development of alternative fuels (i.e. fuel from agricultural products) with a view of reducing the consumption of fossil fuels
- Improve land management with a view of increasing storage-reducing of CO<sub>2</sub> emission in cultivated lands

## 7 PROJECT OPPORTUNITIES IDENTIFIED FOR BUILDING CAPACITY

### 7.1 Logical Framework Analysis

#### 7.1.1 Goal and Purpose

The objective of this assignment is *to identify national capacity constraints and priorities to meet binding commitments* contained in the three Rio Conventions on biodiversity, climate change and desertification. The use of a Logical Framework Analysis (LFA) provides a method for the synthesis of the review phase and the findings from the SWOT analysis. The LFA allows these to be structured in a way that will assist the NCSA Project Management Group in formulating a strategy and action plan to ensure Swaziland has the capacity to meet its commitments to global environmental management.

#### 7.1.2 Findings

Based on the findings of the review phase and SWOT analysis we propose a number of specific outputs. These are expected products to be achieved through the mobilisation of selected strategic interventions. The Outputs can also be seen as objectives. Achieving these Outputs will ensure the realisation of the purpose of the NCSA; ensuring that Swaziland has the capacity to meet its commitments to global environmental management under the UN Conventions (UN FCCC).

These Outputs and the activities and interventions therein are considered preliminary. They are presented here for the purpose of further discussion. Inputs received from the NCSA PMG and stakeholders will be incorporated in the final draft, which will be presented in the format below.

OBJECTIVES	ACTIVITIES	IMPLEMENTING AGENCY	MEASURABLE INDICATORS	IMPORTANT ASSUMPTIONS
<b>Goal:</b> to identify national capacity constraints and priorities to meet binding commitments contained in the three Rio Conventions on biodiversity, climate change and desertification				

<b>Purpose:</b> to determine how best to develop this capacity to meet Swaziland's commitment to global environmental management through the production of a strategy and action plan				
<b>Objective 1:</b> Improve access to funding by developing a strategic plan that prioritises future needs and projects	1. Develop bankable project proposals 2. Source funds from Government and funders using strategic plan and needs analysis 3.	1.National Meteorological Services 2.Swaziland Environment Authority 3.Ministry of Economic Planning	1.Development of a strategic funding action plan for future funding needs. 2.Submitt to National steering committee for ratification and submission to Cabinet	1. Rehabilitation and reconstitution of National Steering Committee
<b>Objective 2:</b> Development of appropriate mechanism	1. Active focal point	NMS		
<b>Objective 3:</b> Increase awareness among local communities-stakeholders	1. Carry out workshops at Tikhundula centers 2. Use of public media (radio, TV, News papers etc. 3.	NMS		
<b>Objective 4.</b> Increase awareness among political structures	1. Workshops 2. Short courses 3. Use of public media	NMS		
<b>Objective 5</b> Improve collation and feedback mechanism	1. Networking among Departments 2. Workshops	NMS		
<b>Objective 6.</b> Improve policy linkages with institutions	1. Policy harmonization	NMS in collaboration with other Government Departments		
<b>Objective 7.</b> Resolve institutional ambiguities	1. Harmonization of institutional activities	Government		
<b>Objective 8.</b>	1. Carry out	NMS, Research		

Enhance and engage existing capacity	research and monitoring 2. Undertake projects (i.e. greenhouse gas inventory)	institutions, NGOs etc.		
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### 7.1.3 Outputs

The outputs are as follows:

#### 1. ***The Kingdom of Swaziland with the institutional arrangements to facilitate its commitments and obligations under the UN FCCC***

The NMS in the MPWT plays a central role in meteorological monitoring in Swaziland and has been mandated as the National Focal Point responsible for the national commitments under the UN FCC. However, substantial collaboration between all government departments is required, especially with the MOAC and departments in the MNRE and SEA. The location of the NMS reflects its historical role providing meteorological data largely for aviation purposes and for agriculture. The organisations linkage with broader environmental issues needs to be strengthened.

The SWOT analysis of constraints has highlighted a need to clearly articulate responsibilities and resolve discrepancies between organizational responsibilities and mandates. There is a need to facilitate co-ordination of planning and information sharing between Government departments, NGOs, donors and research bodies to reduce duplication and maximise benefits derived from these collective efforts. This objective will be realized through the following activities.

#### **Output 1 Activities**

- Review of organisational mandates, mission statements.
- Critical institutional assessment of the increasing role of the NMS in broader environmental monitoring.
- Integration of specific time allocations into the daily job description and responsibilities of Focal Points.
- Harmonisation of institutional responsibilities.
- Broadening mandate of NMS to incorporate wider range of monitoring functions.
- A central clearing house mechanism for the collation and dissemination of information.

#### 2. ***The Kingdom of Swaziland with the capacity to meet its Reporting Requirements under the UN FCCC.***

Swaziland has demonstrated its ability to meet its commitments under the UN CCD. To date this has been supported through donors and facilitated by national stakeholders with facilitation of consultants. In strengthening the national capacity, activities will be focused

on increasing autonomy and sustainability of reporting measures. In relation to the UN FCCC reporting measures need to be closely linked with and informed by research development. The lack of appropriate models and verification of regional models could be undermining the efficacy of reported estimates of emissions. Reporting measures are also hampered by the magnitude of the task with it necessary to monitor, collate reported analyse data from a large number of institutions. This output will be served by the following activities;

### **Output 2 Activities**

- Standardization of broad monitoring framework to facilitate reporting from all institutions contributing to green house gas emission.
- Preparation of quarterly reports by Focal Points. These should detail activities undertaken relating to the UN FCCC, update progress on legislative measures, policy development, stakeholder engagement and other activities. This will assist in preparing reports for the COP and distribution among stakeholders.
- Development of standard formatting for reporting by Focal Points.
- Development of an appropriate information management system for collating emissions data, tracking and collating project progress, stakeholder activities, policy measures etc.

### **3. *The Kingdom of Swaziland with a policy and legislative framework to support and fully realize the ideals and intentions of the UN FCCC.***

The policy and legislative framework is an evolving body of legislation. Measures need to be put in place to ensure that this is constantly revised and updated. Furthermore the Focal Point needs a mechanism to keep track of changes in the legislative environment that may be of specific relevance to the UN FCCC and its reporting through the COP. Given the implications and opportunities under the provisions of the UN FCCC, and more recently the Kyoto Protocol, a number of opportunities exists if the country is able to adapt its policy environment and create the proper incentive mechanisms and framework to benefit from the instruments of the Convention. This will be achieved through the following activities.

### **Output 3 Activities**

- Review document outlining development opportunities under the provisions of the UN FCCC and Kyoto Protocols.
- Manual facilitating NGO, private industry and other stakeholder access and involvement in the financial incentive mechanisms of the UN FCCC and its instruments.
- Workshops on policy implications and opportunities under the UN FCCC and its instruments.
- A central clearing house mechanism for government, specifically relating to the UN Conventions. This could be and should be developed in line with existing structures, capacitating them as required to ensure their operational efficiency.

**4. *The Kingdom of Swaziland with the capacity to ensure research and monitoring in the area of land degradation, mitigation and rehabilitation.***

While structures for facilitating and coordinating research exist in Swaziland these are not focussed around issues of climate change. The NMS has an extensive network of traditional meteorological stations recording climatic and agro-climatic data. The structure and function of the NMS is not geared toward measuring and monitoring of green house gas emissions. Climatic data can be used to observe and extrapolate for the purpose of prediction changes in climate, but the current infrastructure does not have the capacity to monitor emissions. Development of such monitoring capabilities would facilitate access to financial instruments under the Convention and assist in strengthening the information basis upon which to inform policy decisions and revisions.

**Output 4 Activities**

- Development of a monitoring and research strategy for the NMS to address changing needs.
- Standardization of monitoring requirements and format to facilitate private industry participation in monitoring and reporting activities.
- Provision of funding for research into climate change and greenhouse gas emissions through the NEF.
- Development of long term ecological research programmes to develop appropriate data sets suitable to the national condition.
- Support training of specialists in modelling, ecological economics and negotiation skills.
- Test the appropriateness of models and standard factors used in determination of emissions and carbon loads.

**5. *The Kingdom of Swaziland with a population fully aware of the causes and implications of climate change as well as mechanisms to mitigate and minimize impacts.***

The effects of climate change affect us all and most people have a basic level of understanding of the changing weather condition through experience. The causes of climate change need to be addressed through programmes targeting awareness of government and industry. This will be achieved through the following activities.

**Output 5 Activities**

- Senior government workshops and briefing documents.
- Stakeholder workshops to explain development opportunities under the UN FCCCs instruments and the underlying causes – government and industry.
- Promotion and incentives to encourage the development of alternative energy sources.

- Include regular reporting of levels of greenhouse gas on news and weather inserts.

**6. *The Kingdom of Swaziland with the financial capacity to fulfill its obligations and commitments under the UN Conventions on Biological Diversity, Climate Change and Desertification.***

This output will be served by activities mobilization and commitment of financial resources adequate to sustain activities in-line with the commitments assumed by the UN Conventions and in the realization of sustainable development objectives.

**Output 6 Activities**

- Specific line budget for UN Conventions.
- Financing and funding manuals prepared by the Secretariat to assist stakeholders in accessing financial mechanisms in support of UN FCCC related activities.
- Provisions within the NEF to support activities under each of the Conventions.
- Formulation of financial incentives; tax measures, subsidies etc to mobilise the private sector.
- Financial incentives for development of sustainable alternative sources of energy.

**7. *The Kingdom of Swaziland with the capacity to meets its obligations and commitments to global environmental management under the UN CCD.***

Swaziland's most valuable resource is its human capital. The highly specialized nature of issues around climate change makes it unlikely that a country the size of Swaziland could support a critical mass of expertise. It is important to draw on regional expertise and to ensure the transfer of knowledge to local structures. Existing capacity in atypical areas needs to be identified, such as modeling under other agencies or organizations that could be applied to climate change issues. Measures are needed to ensure that Swaziland continues to develop appropriate capacity in strategic areas of need. In order to achieve this there is a need to acknowledge beyond identifying the problems to addressing the root cause of these problems. This output will be served by the following activities.

**Output 7 Activities**

- Public-Private partnerships.
- Training of environmental economists.
- Development of a capacity enhancement programme, defined by clear objectives with specific monitoring and evaluation criteria.

## **8 OPPORTUNITIES FOR SYNERGISTIC AND CROSS-CUTTING CAPACITY BUILDING APPROACHES AND PROJECTS**

Overlap in terms of the obligations and requirements under the Conventions have prompted the Secretaries of the Un Conventions (FCCC, CBD and CCD) to make several

recommendations, conclusions and decisions to increase mutual understanding and coordination. Despite these there remains a need to develop and enhance synergies between the instruments in terms of their implementation at local, national, regional and global levels.

It should be acknowledged that each of the conventions constitutes a separate agreement, with specific commitments and obligations upon Parties. While there is room for harmonisation and improved synergy with respect to implementation there are also requirements specific to the individual Conventions. These differences reflect as much about the nature of the Convention as it does the global politics governing its formation.

Given the limited resources within Swaziland, identification of opportunities to exploit and maximise the derived benefit from synergies among the Conventions will enhance the efficacy with which the Kingdom responds to the Convention and utilisation of limiting resources.

Elements common to each of the Conventions derived from the review phase and opportunities for linkages between these are described in the table below. Using the Logical Framework Analysis the final report will draw together the cross cutting issues identified from each of the Thematic reports. These will be used to identify priority capacity strengths and constraints with a view to implementing measurable interventions in the most efficient manner.

<b>Joint components</b>	<b>Linked approach</b>	<b>Assessment tools</b>	<b>Possible outcomes</b>
Stocktaking, assessment of existing data, documents, strategies and policies	Data and information management	Enabling activities Inter-linkages Case studies	Collaborative data collection, storage, management and exchange
Steering committees, coordination bodies (NFP and line agencies)	Information exchange, inter-agency collaboration, joint planning	Enabling activities Inter-linkages Case studies	Inter-agency committees, NCSD
Prioritization of activities; complementary; mainstreaming into existing policies	Strategic planning and knowledge management	Enabling activities Inter-linkages Case studies	Policy coordination, joint preparation for negotiation, ratification; integrated implementation strategies
Multi-stakeholder participation	Participatory assessments, joint planning procedures	Enabling activities Inter-linkages Case studies	Strengthened ownership, information and experience sharing across levels (national & local)
Awareness raising	Targeting high-level decision makers	Enabling activities Inter-linkages Case	CCC, CCD and CBD linked to

	and the general public	studies	sustainable development strategies for politicians and in curricula
Outreach	Joint outreach programmes	Enabling activities Inter-linkages Case studies	Linking Rio-Conventions to sustainable development strategy in public awareness

## 9 CONCLUSIONS

As a signatory to the UN FCCC, Swaziland has assumed certain commitments and obligations in the area of global environmental management. These can be considered in the following areas;

- reporting requirements,
- policy and legislative,
- research and monitoring,
- training and education,
- public awareness and exchange of information,
- financial mechanisms,
- capacity.

While the UN FCCC calls upon Parties to the Convention to undertake certain activities it should be acknowledged that none of these are enforceable. The UN FCCC recognises differentiated responsibility and ability among signatories. As a developing country Swaziland is considered as a non-annex 1 Party to the Convention and therefore does not assume any specific obligations. Despite this the country has prepared and submitted its first national inventory. This was undertaken using national structures indicating that sufficient capacity exists within the country.

The complexity associated with monitoring and reporting on emissions requires comprehensive institutional arrangements that will enable adequate reporting of emissions. These need to be well defined. The mandate of the NMS and the ministry is far beyond the objective of the UN FCCC. Addressing issues of climate change requires a broad based approach drawing on information and expertise from numerous government departments as well as the private sector. In order to achieve this the position of the NMS needs to be strengthened.

A strong research and development framework is needed to ensure the validity and applicability of analytical climate change tools, such as models and emission factors. This framework needs to be sufficient to ensure the sustainability of monitoring networks and that the information collected is comprehensive enough to address issues around climate change.

Greater integration and an expansion of monitoring networks need to be developed. These should be done through partnerships with other institutions to prepare an holistic overview of changes in the Swaziland environment. For example, the establishment of long term ecological monitoring sites would provide invaluable support. Such initiatives are currently beyond the mandate and scope of services within the NMS. This is in part an historical function and also representative of the NMSs position within the Ministry of Works and Transport. The institutional arrangements need to be resolved in order to strengthen the mandate and bring it in line with its changing function as providing an holistic overview of the state of environment in Swaziland.

## **10 BIBLIOGRAPHY**

Anon. 1997. *Workshop on the Involvement of NGOs in the NAP process for the Implementation of the Convention to Combat Desertification*. A report of the Workshop held at Mphophoma Conference Centre.

CANGO, 2000. Directory of Non Governmental Organisations Swaziland. 3rd Edition. Mbabane.

Downing, B. & Zuke, S., 1996. Review of Drought and Desertification in Swaziland: A Background for the First National Forum. UNDP/GOS/AusAID. Mbabane.

Dube, M., 1999. Evaluation of the Local Community Initiatives Programme of Ekuhanyeni and Hluti Community Projects in Swaziland. GOS/UNDP. Mbabane.

Fakudze, P.N., 1998. Report of the survey of indigenous knowledge systems in Swaziland and the potential for its integration to the National Action Programme for Combating Desertification. GOS/UNDP. Mbabane.

GOS/MOAC, 2000. A review of the Swaziland National Action Programme to Combat Desertification and a Strategy for its Implementation. Prepared by Environmental Consulting Services. Mbabane.

GOS/MTEC, 1997. Swaziland Environment Action Plan. Volume 1 & II. Swaziland Environment Authority. Mbabane.

GOS/NSCD, 1997. Workshop on the involvement of NGOs in the NAP process for the implementation of the Convention to Combat Desertification. A report of the workshop held at Mphophoma Conference Centre. Swaziland.

GOS/NSCD, 1999. First National Report on the Implementation of the CCD. GOS/UNDP. Mbabane.

GOS/PMO, 1997. Economic and Social Reform Agenda (ESRA). Prime Minister's Office, Mbabane.

GOS/PMO, 1999. Economic and Social Reform Agenda II (ESRA II). Prime Minister's Office, Mbabane.

GOS/UNDP, 1998. The Convention to Combat Desertification: Swaziland National Action Programme. Prepared by Fakudze P.N. & Mliphah, M. Mbabane.

- JICA/ECS, 1999. A study to define a sustainable land management programme countering land degradation in Swaziland. Prepared by Environmental Consulting Services for the Japanese International Co-operation Agency. MOAC, Mbabane.
- Kuria, P., 1999. Evaluation of Community Based Projects (CBO) under the UNSO/UNDP Convention to Combat Desertification Programme in Swaziland. GOS/UNDP. Mbabane.
- Lange, G.M., 1999. Introducing Natural Resource Accounting in Swaziland. Swaziland Environment Authority. Mbabane.
- Mpande, R.L., 1998. Enhancing NGO participation in the implementation of the Convention to Combat Desertification in Swaziland. GOS/UNDP. Mbabane.
- Mushala, H. & Mlipha, M., 1999. CCD Project Proposals on Research and Technology Development and Alternative Livelihoods. GOS/UNDP. Mbabane.
- Ndlovu, L.S., 1997. The National Action Programme on Combating Desertification in Swaziland. A report prepared for the First National Forum on the NAP. GOS/UNDP. Mbabane.
- Okarie, A. & Mkhabela, M., 1999. Promotion of Awareness, Capacity Building and Community Participation in Combating Land Degradation and Desertification in Swaziland. GOS/UNDP. Mbabane.
- Osunade, Adewole M.A. 1994 (a). Community Environmental Knowledge and Land Resource Surveys in Swaziland. Singapore Journal of Tropical Geography 15: 157 - 170.
- Red Cross, 1999. Baphalali Swaziland Red Cross Society Annual Report. Mbabane.
- Simelane, E.T. 2000. Estimating the costs of soil erosion in Swaziland. A case study at Kukhanyeni area in the Manzini region. Swaziland Environment Authority. Mbabane.
- UNFCCC. 2003. Caring for climate: A guide to the Climate Change Convention and the Kyoto Protocol. Issued by the Climate Change Secretariat (UNFCCC) Bonn, Germany

## ***Annex I Text of the UN Framework Convention on Climate Change***

Advance unedited version

### **Draft decision -/CP.8**

#### **Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention**

*The Conference of the Parties,*

*Recalling*, in particular, Article 4, paragraphs 1, 3 and 7, Article 10, paragraph 2(a) and Article 12, paragraphs 1, 5 and 7, of the Convention,

*Recalling also* its decisions on communications from Parties not included in Annex I to the Convention (non-Annex I Parties) and, in particular, its decisions 10/CP.2, 2/CP.4, 12/CP.4, 8/CP.5, 31/CP.7 and 32/CP.7,

*Recalling further* that, by its decision 8/CP.5, it had initiated a process of reviewing the guidelines for the preparation of national communications from non-Annex I Parties, with the aim of improving them,

*Having in mind* that, at its seventh session, it had decided to continue the process of reviewing the guidelines for the preparation of national communications from non-Annex I Parties, with a view to adopting them at its eighth session,

*Acknowledging* that the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention has made important contributions to the revision of the guidelines for the preparation of national communications from non-Annex I Parties,

*Recognizing* the important role of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention, in facilitating technical advice and support for the preparation of second and, where appropriate, third national communications from non-Annex I Parties, pursuant to decision xx/CP.8,

#### *1. Decides:*

(a) That Parties not included in Annex I to the Convention (non-Annex I Parties) should use

the guidelines contained in the annex to this decision for the preparation of second and, where appropriate, third national communications and, where appropriate, initial national communications, except where Parties have initiated the process of preparing second national communications and received funding under the expedited procedures or on an agreed full cost basis prior to the approval of the guidelines annexed to this decision;

(b) That, in using these guidelines, non-Annex I Parties should take into account their development priorities, objectives and national circumstances;

(c) That these guidelines should be used to provide guidance to an operating entity of the financial mechanism for funding the preparation of national communications from non-Annex I Parties;

(d) That the guidelines contained in the annex to this decision, together with the guidance to an operating entity of the financial mechanism provided in decision xxx/CP.8, should be used for the preparation of second and, where appropriate, third national communications and, where appropriate, initial national communications;<sup>1</sup> Decision 32/CP.7.

(e) That Parties that have submitted their second national communication and started their third national communication before the thirteenth session of the Conference of the Parties, may do so using the guidelines annexed to this decision;

(f) That the frequency of submission of second and, where appropriate, third national communications by non-Annex I Parties shall be determined by the Conference of the Parties, at its ninth session, taking into account the principles of differentiated timetable set by the Convention;

2. *Invites* non-Annex I Parties that may wish to do so, to use elements from the guidelines for the preparation of national communications from Parties included in Annex I to the Convention, when preparing their national communications;

3. *Requests* the secretariat to facilitate assistance to non-Annex I Parties in the preparation of their national communications, in accordance with Article 8, paragraph 2 (c), of the Convention, and to prepare reports thereon for consideration by the Subsidiary Body for Implementation.

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Advance unedited version

Addendum

Annex

## **GUIDELINES FOR THE PREPARATION OF NATIONAL COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION**

### **I. INTRODUCTION**

#### **A. Objectives**

1. The principal objectives of the guidelines for the preparation of national communications from Parties not included in Annex I to the Convention (non-Annex I Parties) shall be:

(a) To assist non-Annex I Parties in meeting their reporting requirements under the Convention;

(b) To encourage the presentation of information in a consistent, transparent and comparable, as well as flexible manner, taking into account specific national circumstances;

(c) To facilitate the presentation of information on support required for the preparation and improvement of national communications from non-Annex I Parties;

(d) To serve as policy guidance to the operating entity of the financial mechanism for the timely provision of financial support needed by developing country Parties in order to

meet the agreed full costs of complying with their obligations under Article 12, paragraph 1, as referred to in decisions 11/CP.2, 2/CP.4, 2/CP.7 and 6/CP.7;

(e) To ensure that the Conference of the Parties (COP) has sufficient information to carry out its responsibility for assessing the implementation of the Convention by Parties.

## **B. Scope**

2. As stated in Article 12, paragraph 1, of the Convention, the national communication shall include the following information:

(a) A national inventory of anthropogenic emissions by sources and removal by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;

(b) A general description of steps taken or envisaged by the non-Annex I Party to implement the Convention;

(c) Any other information that the non-Annex I Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

## **II. NATIONAL CIRCUMSTANCES**

3. Non-Annex I Parties should provide a description of their national and regional development priorities, objectives and circumstances, on the basis of which they will address climate change and its adverse impacts. This description may include information on features of their geography, climate and economy which may affect their ability to deal with mitigating and adapting to climate change, as well as information regarding their specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures, as contained in Article 4, paragraphs 8 and, as appropriate, in Article 4, paragraphs, 9 and 10, of the Convention.

4. Non-Annex I Parties are encouraged to provide a summary of relevant information regarding their national circumstances, as appropriate, in tabular form.

5. Non-Annex I Parties may provide a description of existing institutional arrangements relevant to the preparation of their national communications on a continuous basis.

## **III. NATIONAL GREENHOUSE GAS INVENTORY**

6. Each Non-Annex I Party shall, in accordance with Article 4, paragraph 1(a) and Article 12, paragraph 1(a), communicate to the Conference of the Parties a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases (GHGs) not controlled by the Montreal Protocol, to the extent its capacities permits, following the provisions in these guidelines.

7. Non-Annex I Parties shall estimate national GHG inventories for the year 1994 for the initial national communication or alternatively may provide data for the year 1990. For the second national communication, non-Annex I Parties shall estimate national GHG inventories for the year 2000. The least developed country Parties could estimate their national GHG inventories for years at their discretion.

## **A. Methodologies**

8. Non-Annex I Parties should use the *Revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories*, hereinafter referred to as the IPCC Guidelines, for estimating and reporting their national GHG inventories.

9. In accordance with the IPCC Guidelines, Parties may use different methods (tiers) included in the Guidelines, giving priority to those methods which are believed to produce the most accurate estimates, depending on national circumstances and the availability of data. As encouraged by the IPCC Guidelines, Parties can also use national methodologies where they consider these to be better able to reflect their national situation, provided that these methodologies are consistent, transparent and well documented.

10. The IPCC Guidelines offer a default methodology which includes default emission factors and in some cases default activity data. As these default factors, data and assumptions may not always be appropriate for specific national circumstances, non-Annex I Parties are encouraged to use their country-specific and regional emission factors and activity data for key sources or, where these do not exist, to propose plans to develop them in a scientifically sound and consistent manner, provided that they are more accurate than the default data and documented transparently. Non-Annex I Parties are encouraged to formulate cost-effective national or regional programmes aiming at the development or improvement of country-specific or regional emissions factors and activity data.

11. Non-Annex I Parties are encouraged to apply the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC Good Practice Guidance), taking into account the need to improve transparency, consistency, comparability, completeness and accuracy in inventories.

12. Non-Annex I Parties are also encouraged, to the extent possible, to undertake any key source analysis as indicated in the IPCC Good Practice Guidance to assist in developing inventories that better reflect their national circumstances.

## **B. Reporting**

13. Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved.

14. Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) by sources and removals by sinks.

15. Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>).

16. Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emission by sources of other greenhouse gases such as carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and non-methane volatile organic compounds (NMVOCs).
17. Other gases not controlled by the Montreal Protocol, such as sulphur oxides (SO<sub>x</sub>), included in the IPCC Guidelines, may be included at the discretion of the Parties.
18. Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO<sub>2</sub> fuel combustion emissions using both the sectoral and the reference approaches, and to explain any large differences between the two approaches.
19. Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, to report emissions from international aviation and marine bunker fuels separately in their inventories. Emission estimates from these sources should not be included in the national totals.
20. Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO<sub>2</sub> equivalents should use the global warming potentials (GWP) provided by the IPCC in its Second Assessment Report (“1995 IPCC GWP Values”) based on the effects of GHGs over a 100-year time horizon.
21. Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks which are not part of the IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity building.
22. Each non-Annex I Party is encouraged to use tables 1 and 2 of these guidelines in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14 to 17 above. In preparing those tables, Parties should strive to present information which is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated.
23. Non-Annex I Parties are encouraged to include in their national communications the inventory sectoral tables and worksheets<sup>1</sup> of the IPCC, in both electronic and hard copy format.<sup>1</sup> <sup>1</sup> The IPCC software (see <http://www.ipcc-nggip.iges.or.jp/public/gl/software.htm>) provides for automated reporting in the worksheets and tables.
24. Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties.
- IV. GENERAL DESCRIPTION OF STEPS TAKEN OR ENVISAGED TO IMPLEMENT THE CONVENTION**
25. Each non-Annex I Party shall, in accordance with Article 12, paragraph 1(b), communicate to the Conference of the Parties a general description of steps taken or

envisaged by the Party to implement the Convention, taking into account its common but differentiated responsibilities and its specific national and regional development priorities, objectives and circumstances.

26. Non-Annex I Parties may provide information on programmes containing measures to mitigate climate change by addressing anthropogenic emission by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change, following the provisions in these guidelines.

27. Taking into account Article 4, paragraph 7, and, as appropriate, Article 4, paragraphs 3 and 5, of the Convention, the extent to which developing country Parties will effectively implement their commitment to communicate this information will depend on the effective implementation by developed country Parties of their commitments under the Convention relating to financial resources and transfer of technology.

A. Programmes containing measures to facilitate adequate adaptation to climate change

28. Each Party shall, in accordance with Article 12, paragraph 1(b) and (c), of the Convention, provide to the COP information on the general description of steps taken or envisaged towards formulating, implementing, publishing and regularly updating national and, where appropriate, regional programmes containing measures to facilitate adequate adaptation to climate change, and any other information they consider to be relevant to the achievement of the objective of the Convention and suitable for inclusion in their communications.

29. In doing so, non-Annex I Parties should provide information on their vulnerability to the adverse effects of climate change, and on adaptation measures being taken to meet their specific needs and concerns arising from these adverse effects.

1. Methodological approaches

30. Non-Annex I Parties may use appropriate methodologies and guidelines<sup>2</sup> they consider better able to reflect their national situation for assessing their vulnerability and adaptation to climate change, provided that these methodologies and guidelines are consistent, transparent and well documented.

31. Non-Annex I Parties are encouraged to use, for the evaluation of adaptation strategies and measures,<sup>3</sup> appropriate methodologies they consider better able to reflect their national situation, provided that these methodologies are consistent, transparent and well documented.

2. <sup>2</sup>Such as the *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations* (Carter, T.R., M.L. Parry, H. Harasawa, S. Nishioka 1994), the *UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies* (Feenstra, J.F., I. Burton, J.B. Smith, R.S.J. Tol 1998), the *International Handbook on Vulnerability and Adaptation Assessments* (Benioff, R., S. Guill, J. Lee 1996).

3. <sup>3</sup>Such as those contained in the *Compendium of Decision Tools to Evaluate Strategies for Adaptation to Climate Change* which is available from the UNFCCC web site, [www.unfccc.int/issues/meth\\_tools.html](http://www.unfccc.int/issues/meth_tools.html).

2. Reporting

32. Non-Annex I are encouraged to provide information on the scope of their vulnerability and adaptation assessment, including identification of vulnerable areas that are most critical.

33. Non-Annex I Parties are encouraged to include a description of approaches, methodologies, and tools used, including scenarios for the assessment of impacts of, and vulnerability and adaptation to, climate change, as well as any uncertainties inherent in these methodologies.

34. Non-Annex I Parties are encouraged to provide information on their vulnerability to the impacts of, and their adaptation to, climate change in key vulnerable areas. Information should include key findings, and direct and indirect effects arising from climate change, allowing for an integrated analysis of the country's vulnerability to climate change.

35. Non-Annex I Parties are encouraged to provide information on and, to the extent possible, an evaluation of, strategies and measures for adapting to climate change, in key areas, including those which are of the highest priority.

36. Where relevant, Parties may report on the use of policy frameworks, such as national adaptation programmes,<sup>4</sup> plans and policies for developing and implementing adaptation strategies and measures.

#### **B. Programmes containing measures to mitigate climate change**

37. Each Party shall, in accordance with Article 12, paragraphs 1(b) and (c), of the Convention, provide to the COP information on the general description of steps taken or envisaged for formulating, implementing, publishing and regularly updating national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and any other information they consider to be relevant to the achievement of the objective of the Convention and suitable for inclusion in their communications.

#### **1. Methodological approaches**

38. Based on national circumstances, non-Annex I Parties are encouraged to use whatever methods are available and appropriate in order to formulate and prioritize programmes containing measures to mitigate climate change; this should be done within the framework of sustainable development objectives, which should include social, economic and environmental factors.

39. In their assessment of these programmes on various sectors of the economy, non-Annex I Parties may use the appropriate technical resources.<sup>5</sup>

#### **2. Reporting**

40. Based on national circumstances, non-Annex I Parties are encouraged to provide, to the extent their capacities allow, information on programmes and measures implemented or planned<sup>6</sup> which

4. <sup>4</sup> For example, national adaptation programmes of action (NAPAs) for least developed countries.

5. 5 Such as Technologies, Policies and Measures for Mitigating Climate Change (IPCC Technical Paper I); Greenhouse Gas Mitigation Assessment: A Guidebook by the U.S. Country Studies Program; Climate Change 2001: Mitigation (Contribution of Working Group III to the Third Assessment Report of the IPCC) contribute to mitigating climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, including, as appropriate, relevant information by key sectors on methodologies, scenarios, results, measures and institutional arrangements.

## **V. OTHER INFORMATION CONSIDERED RELEVANT TO THE ACHIEVEMENT OF THE OBJECTIVE OF THE CONVENTION**

41. With a view to facilitating the formulation and implementation of sustainable development programmes, non-Annex I Parties are encouraged, as appropriate, to provide information on any steps they have taken to integrate climate change considerations into relevant social, economic and environmental policies and actions in accordance with Article 4, paragraph 1(f), of the Convention.

### **A. Transfer of technologies**

42. Pursuant to decision 4/CP.7, its annex, and the implementation of Article 4, paragraph 5, of the Convention, non-Annex I Parties are encouraged, in the light of their social and economic conditions, to provide information on activities relating to the transfer of, and access to, environmentally sound technologies and know-how, the development and enhancement of endogenous capacities, technologies and know-how, and measures relating to enhancing the enabling environment for development and transfer of technologies.

### **B. Research and systematic observation**

43. Non-Annex I Parties are encouraged to provide information on climate change research and systematic observation, including their participation in and contribution to activities and programmes, as appropriate, of national, regional and global research networks and observing systems.<sup>7</sup>

44. Non-Annex I Parties are encouraged to provide information on research relating to programmes containing measures to mitigate climate change; programmes containing measures to facilitate adequate adaptation to climate change; and the development of emission factors and activity data.

### **C. Education, training and public awareness**

45. Non-Annex I Parties are invited to provide information on activities relating to climate change education, training and public awareness.

### **D. Capacity-building**

46. Non-Annex I Parties are encouraged to provide, in accordance with decision 2/CP.7, information on how capacity-building activities, as contained in the framework annexed to that decision, are being implemented at national and, where appropriate, at subregional and/or regional levels. This could include, inter alia, options and priorities for capacity-building, participation in and promotion of South-South cooperation, the involvement of stakeholders in capacity-building, coordination and sustainability of capacity-building

activities, and the dissemination and sharing of information on capacitybuilding activities.

6. <sup>6</sup>Such as measures being considered by the government for future implementation.

7. <sup>7</sup>Such as the Global Climate Observing System, Global Terrestrial Observing System and Global Ocean Observing System.

47. Non-Annex I Parties are encouraged to include, as appropriate, information on national, subregional and/or regional capacity-building activities for integrating adaptation to climate change into medium and long-term planning.

#### E. Information and networking

48. Non-Annex I Parties are encouraged to provide information on their efforts to promote information sharing among and within countries and regions. Information could cover, as appropriate, participation in and contribution to networks, and access to, and use of, information technologies for information exchange.

### **VI. CONSTRAINTS AND GAPS, AND RELATED FINANCIAL, TECHNICAL AND CAPACITY NEEDS**

49. Non-Annex I Parties should, in accordance with national circumstances and development priorities, describe any constraints and gaps, and related financial, technical and capacity needs, as well as proposed and/or implemented activities for overcoming the gaps and constraints associated with the implementation of activities, measures and programmes envisaged under the Convention, and with the preparation and improvement of national communications on a continuous basis.

50. Non-Annex I Parties should provide information on financial resources and technical support for the preparation of their national communications provided by themselves, as well as those received from the Global Environment Facility (GEF), Annex II Parties or bilateral and multilateral institutions.

51. Non-Annex I Parties should also provide information on financial resources and technical support provided by themselves and by the GEF, Annex II Parties or bilateral and multilateral institutions, for activities relating to climate change.

52. Non-Annex I Parties are encouraged to provide, to the extent their capacities permit, a list of projects proposed for financing, in accordance with Article 12, paragraph 4, of the Convention, in preparation for arranging the provision of technical and financial support.

53. Non-Annex I Parties may include information on opportunities for the implementation of adaptation measures, including pilot and/or demonstration adaptation projects being undertaken or proposed. They may also provide information on barriers to the implementation of adaptation measures. They may include, as appropriate, information on how support programmes from Parties included in Annex II to the Convention are meeting their specific needs and concerns relating to vulnerability and adaptation to climate change.

54. With regard to the development and transfer of technology, non-Annex I Parties are encouraged to provide information on country-specific technology needs and assistance received from developed country Parties and the financial mechanism of the Convention

and, as appropriate, on how they have utilized this assistance in support of the development and enhancement of endogenous capacities, technologies and know-how.

55. Non-Annex I Parties are encouraged to provide information on other relevant needs and/or areas for capacity-building other than those mentioned in paragraphs 45, 47, 48 and 50.

## VII. SUBMISSION

56. The information provided in accordance with these guidelines shall be communicated by each non-Annex I Party to the COP in a single document, with an executive summary outlining the information contained in the full document, in both hard copy and electronic format.

57. Each non-Annex I Party shall submit its national communication in one of the official languages of the United Nations. The executive summary, which is to be of no more than 10 pages, shall be translated into English and made publicly available. Parties are also encouraged to submit, to the extent possible and where relevant, English translations of their communications.

58. Additional or supporting information may be supplied through other documents such as a technical annex.

**Table 1. National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol<sup>a</sup> and greenhouse gas precursors**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions (Gg)	CO <sub>2</sub> removals (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)	CO (Gg)	NO <sub>x</sub> (Gg)	NMVOCs (Gg)	SO <sub>x</sub> (Gg)
<b>Total national emissions and removals</b>	X	X	X	X	X	X	X	X
<b>1. Energy</b>	X	X	X	X	X	X	X	X
A. Fuel combustion (sectoral approach)	X		X	X	X	X	X	X
1. Energy industries	X		X	X	X	X	X	X
2. Manufacturing industries and construction	X		X	X	X	X	X	X
3. Transport	X		X	X	X	X	X	X
4. Other sectors	X		X	X	X	X	X	X
5. Other (please specify)	X		X	X	X	X	X	X
B. Fugitive emissions from fuels	X		X		X	X	X	X
1. Solid fuels			X		X	X	X	X
2. Oil and natural gas			X		X	X	X	X
<b>2. Industrial processes</b>	X	X	X	X	X	X	X	X
A. Mineral products	X				X	X	X	X
B. Chemical industry	X		X	X	X	X	X	X
C. Metal production	X		X	X	X	X	X	X
D. Other production	X				X	X	X	X
E. Production of halocarbons and sulphur hexafluoride								
F. Consumption of halocarbons and sulphur hexafluoride								
G. Other (please specify)	X		X	X	X	X	X	X
<b>3. Solvent and other product use</b>	X			X			X	
<b>4. Agriculture</b>			X	X	X	X	X	X
A. Enteric fermentation			X					
B. Manure management			X	X			X	
C. Rice cultivation			X				X	
D. Agricultural soils			X	X			X	
E. Prescribed burning of savannahs			X	X	X	X	X	
F. Field burning of agricultural residues			X	X	X	X	X	
G. Other (please specify)			X	X	X	X	X	
<b>5. Land-use change and forestry</b>	X <sup>b</sup>	X <sup>b</sup>	X	X	X	X	X	X
A. Changes in forest and other woody biomass stocks	X <sup>b</sup>	X <sup>b</sup>						
B. Forest and grassland conversion	X	X	X	X	X	X		
C. Abandonment of managed lands		X						
D. CO <sub>2</sub> emissions and removals from soil	X <sup>b</sup>	X <sup>b</sup>						
E. Other (please specify)	X	X	X	X	X	X		
<b>6. Waste</b>			X	X	X	X	X	X
A. Solid waste disposal on land			X		X		X	
B. Waste-water handling			X	X	X	X	X	
C. Waste incineration					X	X	X	X
D. Other (please specify)			X	X	X	X	X	X
<b>7. Other (please specify)</b>	X	X	X	X	X	X	X	X
<b>Memo items</b>								
<b>International bunkers</b>	X		X	X	X	X	X	X
Aviation	X		X	X	X	X	X	X
Marine	X		X	X	X	X	X	X
<b>CO<sub>2</sub> emissions from biomass</b>	X							

Notes: Shaded cells do not require entries.

<sup>a</sup> The following standard indicators should be used, as appropriate, for emissions by sources and removals by sinks of GHGs: NO (not occurring) for activities or processes that do not occur for a particular gas or source/sink category within a country, NE (not estimated)

for existing emissions and removals which have not been estimated, NA (not applicable) for activities in a given source/sink category which do not result in emissions or removals of a specific gas, IE (included elsewhere) for emissions and removals estimated but included elsewhere in the inventory (Parties should indicate where the emissions or

removals have been included), C (confidential) for emissions and removals which could lead to the disclosure of confidential information.

b Do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. “Net” emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Note that for the purposes of reporting, the signs for removals are always (-) and for emissions (+).

**Table 2. National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF<sub>6</sub>**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC <sub>5</sub> <sup>a,b</sup> (Gg)			PFC <sub>5</sub> <sup>a,b</sup> (Gg)			SF <sub>6</sub> <sup>a</sup> (Gg)
	HFC-23	HFC-134	Other (to be added)	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	Other (to be added)	
<b>Total national emissions and removals:</b>	X	X	X	X	X	X	X
<b>1. Energy</b>							
A. Fuel combustion (sectoral approach)							
1. Energy industries							
2. Manufacturing industries and construction							
3. Transport							
4. Other sectors							
5. Other (please specify)							
B. Fugitive emissions from fuels							
1. Solid fuels							
2. Oil and natural gas							
<b>2. Industrial processes</b>	X	X	X	X	X	X	X
A. Mineral products							
B. Chemical industry							
C. Metal production	X	X	X	X	X	X	X
D. Other production							
E. Production of halocarbons and sulphur hexafluoride	X	X	X	X	X	X	X
F. Consumption of halocarbons and sulphur hexafluoride	X	X	X	X	X	X	X
G. Other (please specify)							
<b>3. Solvent and other product use</b>							
<b>4. Agriculture</b>							
A. Enteric fermentation							
B. Manure management							
C. Rice cultivation							
D. Agricultural soils							
E. Prescribed burning of savannahs							
F. Field burning of agricultural residues							
G. Other (please specify)							
<b>5. Land-use change and forestry</b>							
A. Changes in forest and other woody biomass stocks							
B. Forest and grassland conversion							
C. Abandonment of managed lands							
D. CO <sub>2</sub> emissions and removals from soil							
E. Other (please specify)							
<b>6. Waste</b>							
A. Solid waste disposal on land							
B. Waste-water handling							
C. Waste incineration							
D. Other (please specify)							
<b>7. Other (please specify)</b>	X	X	X	X	X	X	X
<b>Memo items</b>							
<b>International bunkers</b>							
Aviation							
Marine							
<b>CO<sub>2</sub> emissions from biomass</b>							

<sup>a</sup> Parties may wish to express HFC, PFC and SF<sub>6</sub> emissions as either potential or actual. Potential emissions should be estimated using the tier 1 approach of the IPCC Guidelines. Actual emissions should be estimated using the tier 2 approach of the IPCC Guidelines.

b Parties reporting HFCs and PFCs should provide emission estimates on a gas-by-gas basis, that is, disaggregated estimates by chemical expressed in units of mass (Gg), as indicated in the table (e.g. HFC-23), where information is available. This should be done by inserting a column for each HFC and PFC gas for which emissions do occur in the country. The gases in the column headings are given as examples only. Other gases to be reported in this table include HFC-32, HFC-41, HFC-43-10, HFC-125, HFC-134a, HFC-152a, HFC-43-10mee, HFC-143a, HFC-227ea, HFC-236fa, HFC-245ca, C3F8, C4F10, c-C4F8, C5F12, C6F14, and any other GHG with high global warming potential not covered in this list.

## ***Annex 2 African signatories to the UN FCC***

### **Country Date of Ratification / Accession**

1.	Algeria	June	9, 1993	27.	Libyan Arab Jamahiriya	June	14, 1999
2.	Angola	May	17, 2000	28.	Madagascar	June	2, 1999
3.	Benin	June	30, 1994	29.	Malawi	April	21, 1994
4.	Botswana	January	27, 1994	30.	Mali	December	28, 1994
5.	Burkina Faso	September	2, 1993	31.	Mauritania	January	20, 1994
6.	Burundi	January	6, 1997	32.	Mauritius	September	4, 1992
7.	Cameroon	October	19, 1994	33.	Morocco	December	28, 1995
8.	Cape Verde	March	29, 1995	34.	Mozambique	August	25, 1995
9.	CAR	March	10, 1995	35.	Namibia	May	16, 1997
10.	Chad	June	7, 1994	36.	Niger	July	25, 1995
11.	Comoros	October	31, 1994	37.	Nigeria	August	29, 1994
12.	Congo	October	14, 1996	38.	Rwanda	August	18, 1998
13.	Côte d'Ivoire	November	29, 1994	39.	Sao Tome & Principe	September	29, 1999
14.	DR Congo	December	9, 1995	40.	Senegal	October	17, 1994
15.	Djibouti	August	27, 1995	41.	Seychelles	September	22, 1992
16.	Egypt	December	5, 1994	42.	Sierra Leone	June	22, 1995
17.	Equatorial Guinea	August	16, 2000	43.	South Africa	August	29, 1997
18.	Eritrea	April	24, 1995	44.	Sudan	November	19, 1993
19.	Ethiopia	April	5, 1994	45.	Swaziland	October	7, 1996
20.	Gabon	January	21, 1998	46.	Togo	March	8, 1995
21.	Gambia	June	10, 1994	47.	Tunisia	July	15, 1993
22.	Ghana	September	6, 1995	49.	Uganda	September	8, 1993
23.	Guinea	May	7, 1993	50.	Tanzania	March	8, 1996
24.	Guinea-Bissau	October	27, 1995	51.	Zambia	May	28, 1993

- |     |         |          |          |     |          |          |         |
|-----|---------|----------|----------|-----|----------|----------|---------|
| 25. | Kenya   | August   | 30, 1994 | 52. | Zimbabwe | November | 3, 1992 |
| 26. | Lesotho | February | 7, 1995  |     |          |          |         |

### **Annex 3 List of Interviews**

<b>ORGANISATION</b>	<b>NAME</b>
SNTC (NEEP)	Ms. Dzelisa Dlamini
SNTC (TFCA)	Mr. Wisdom Dlamini
SWAZI TRAILS	Mr. Darron Raw
ENVIRONMENTAL CONSULTANT	Dr. Irma Allen
SEA	Mr. Steve Zuke
MOAC (PLANNING& DEVELOPMENT)	Mr. Bongani Masuku
MOAC (LANDUSE PLANING)	Mr. Dumsani Mngometulu
MWPT (METEOLOGY)	Mr. Emmanuel Dlamini
MNRE (ENERGY SECTION)	Mr. Peterson Dlamini
CONSULTANT	Dr. Arie Remmelzwaal
SNTC (Malolotja Nature Reserve)	Mr. Ray Gama
SNTC (CEO)	Mr. Sinaye Mamba
CANGO	Mr. Clement Dlamini
SNTC (DIRECTOR OF PARKS)	Mr. Sikhumbuzo Dlamini

### Annex 4 List Of Questionnaires

Government departments		Section	No of questionnaires	Response
Raphael Sangweni	MNRE	Water resources	1	0
Peterson Dlamini	MNRE	Energy	1	1
Similo Mavimbela	MOAC	Research station	1	1
Dumsani Mngometulu	MOAC	Land use planning	1	0
Bongani Xaba	MOAC	Livestock	1	1
ST Gamedze	MOAC	Forestry	1	0
Vakela Gama	MEPD	Planning	1	1
Faith Mkhathshwa	MPWT	Environmental planning	1	1
Dudu Nhlengetfwa	MPWT	Meteorology	1	1
Parastatal				
Poppy Khoza	STA	Tourism	1	0
Lynn Kota	SKPE	Environment	1	1
Ian Van Zaydum	KOBWA	Environment	1	0
Wisdom Dlamini	SNTC	Peace Parks	1	1
Dzelisa Dlamini	SNTC	NEEP	1	1
Vusi Simelane	SEB	Environment	1	1
NGO's				
Thuli Makama	Yonge Nawe		1	0
Emmanuel Dlangamandla	CANGO		1	1
Private Companies				
				1
Patience Simelane	SAPPI	Forest planning	1	0
Mr Bold	PEAK TIMBERS	Environment	1	0
George Brown	Ngonini Estate	Production	1	0
James Kunene	Mantenga Nature Reserve		1	1
Ray Gama	Malolotja Nature Reserve		1	0
School teachers				
Teacher	Mlumati High School	Biology & Geography	2	1
Teacher	Timphisini High School	Biology & Geography	2	1
Teacher	Sphocosini High	Biology & Geography	2	0
Teacher	Mhlatane High	Biology & Geography	2	1
Teacher	Evelyn Barring	Biology & Geography	3	3
Teacher	Siteki Nazarene	Biology & Geography	2	0

Teacher	MDHS	Biology & Geography	2	0
Teacher	Masiphula High	Bilogy & Geography	2	0
<b>SCHOOLS</b>				
Hhohho	Timphisini High School	Biology & Geography	25	23
Hhohho	Mlumati High School	Biology & Geography	25	22
Hhohho	Lobamba National High	BIology & Geography	25	1
Hhohho	Siphocosini High	Biology & Geography	25	0
Hhohho	Mhlatane High School	Biology & Geography	25	0
Shiselweni	Evelyn Baring High	Biology & Geography	25	12
Shiselweni	Masiphula High	Biology & Geography	35	31
Lubombo	Siteki Nazarene	Biology & Geography	40	38
Hhohho	MDHS	Biology & Geography	25	24
Municipalities	Mbabane City Council	Environment	1	1
	Total number of questionnaires		290	171

### Annex 5 List Stakeholders at the NCSA Workshop

NAME	EMAIL	TEL	ORGANASATION
<b>NCSA PMG</b>			
Bongani Masuku	moaclds@realnet.co.sz	5184162	MOAC/CCD Focal Point
Rex Brown	rbrown@ecs.co.sz	4044118	NCSA Project Coordinator
Steve Zuke	seabiodiv@realnet.co.sz	4046420	MTEC/Senior Environment Officer
<b>CREATE TEAM</b>			
Dr Ara Monadjem	ara@uniswacc.uniswa.sz	5184011	Consultant, CREATE, CBD
Dr Arie Remmelzwaal	remmelzwaal@africaonline.co.sz	4049118	Consultant, CREATE, CCD
Prof Jonathan Matondo	matondo@uniswacc.uniswa.sz	5185276	Consultant, CREATE, FCC
Dr Marcus Wishart	mwishart@tropical.co.mz		Consultant, CREATE
Steve Woodburn	createsd@africaonline.co.sz	3441356	Consultant, CREATE
<b>CCD</b>			
Nomsa Mabila	shewula@realnet.co.sz		Shewula Community Conservation Project
Peta Masson	peta.hardy@sappi.com		SAPPI (White River, RSA)
Solomon Mabuza	solom@swaziplace.com	2078588	Shiselweni Forestry
Tony Bold	Tony_Bold@mondi.co.za	4371255	Mondi Forests
Khanyisile Mabuza	khanyisile.mabuza@fao.org.sz	4043299	Assistant FAO Representative (MOAC)
Mandla Mliphha	mliphha@science.uniswa.sz		UNISWA GEP DEPT
Moses Vilakati	moses@swase.co.sz		KDDP Livestock Unit
Dr Absalom Manyatsi	manyatsi@agric.uniswa.sz	5283021	UNISWA Land & Mechanisation
Mike McDermott	mikemackd2@yahoo.com.au	4044278	Consultant, Land Policy
Peterson Dlamini	dlaminipe@gov.sz	4046244	MNRE Energy Section
<b>OTHER/ALL</b>			
Dr Imma Allen	szallen@africaonline.co.sz	4042376	Consultant, Environmental Education
Happy Mavimbela	happymav@swazibank.sz		Swazi Bank Environmental Officer
Lynn Kota	lynnk@swade.co.sz	3232274	KDDP Environmental Manager
Bheki Nsibandze		2078392	MOAC (Shiselweni)
Sikelela Madzinane	sikelela@mbacity.org.sz	4042612	Mbabane city Council
Amy Francis	reaswa@swazi.net		Renewable Energy Ass
Lucky Hlatshwako		3434435	Min of Health (Ubombo)
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Bernard Mashwana		4041513	SEB
Nokuthula Dlamini	faith@swade.co.sz	3232275	SKPE
Sixolile Kunene	skunene@illovo.co.za	3638472	Ubombo Sugar
Mandla Mahlalela	mmahlalela@illovo.co.za	3638240	Ubombo Sugar
Thembisile Ntshangase		4047761	Public Health Unit
Thembalihlwa Mahlaba	tmahlaba@science.uniswa.sz	5184011	UNISWA