

FORESTS, RANGELAND and CLIMATE CHANGE ADAPTATION WORKSHOP

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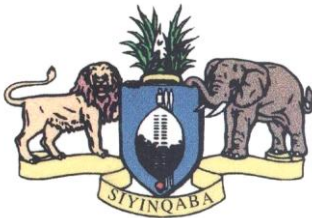
SWAZILAND REPORT

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1.0 INTRODUCTION

Swaziland as a developing country is not immune to the adverse effects of climate change which have impacted immensely on the country's main economic sectors such as agriculture, industry and forestry. For Swaziland, adaptation is not an option but is a necessity; however, there is still need for strengthening institutional and human resources for the country to adapt to the impacts of climate change. Swaziland do have mitigation potential in some sectors like industrial processed, waste and energy but funding and technology transfer remain the limiting factors towards exploiting such opportunities. With all the above highlighted limitations, the Kingdom of Swaziland is keen to continue participating actively on the different national and international activities on climate change.

1.1 *The following are the current and predicted impacts that the country is faced with:*

Forestry

It has been predicted that there would be an increase in temperature in all agro-ecological zones and that there will be changes in rainfall distribution resulting in an increase in extreme events and occurrence and severity of drought events. This is inspite of the projection for no significant change in the total annual rainfall. High temperatures are likely to lead to high evaporation and high water demand by forest plantations and indigenous forests. The country may be much drier posing potential changes to eco-systems. The drier Acacia savanna is likely to be dominant. Invasion by alien plant species and bush encroachment is most likely to increase. Frequent outbreak of forest fires is most likely to occur in linear year to year intervals.

Rangelands

A decline in livestock production is likely to occur due to prolonged drought and winter season. Delayed rainy season and unpredictable rainfall distribution pattern results in the late onset of grass germination thus resulting in degradation of rangelands, loss of habitat and change in rangeland species composition; dominance of rangeland species that are not beneficial to livestock. Extreme weather conditions on livestock performance and productivity - death of livestock caused by sudden drop in temperatures during the dry season when the veld and animal condition are poor. Decreased water - drying up of boreholes as a result of lowered water table which is more prevalent in the Lowveld of Swaziland. A change in distribution of diseases including animal health risks and zoonotic diseases is likely to occur.

None adherence of farmers to the correct stocking rate leads to high production of methane (CH₄) from the excess stock, especially during periods of peak forage yields (summer); thus increasing green house gases and air pollution. Indiscriminate burning and wild fires result in carbon emissions and loss of plant diversity.

2.0 National priority actions for addressing climate change in forestry

The country has the Poverty Reduction Strategy and Action Plan which put emphasis on improving the livelihoods of the local people through poverty alleviation initiatives. There is also the Food Security Policy which seeks to ensure that the local people have adequate food at all levels. There are initiatives under forestry and rangelands that address the above national priorities. Recently, the country completed a National Climate Change Strategy and Action Plan which addresses climate change issues around forestry and rangelands management.

2.1 Forestry:

Available mitigation options under forestry were identified by the National Communications report, (2012) and they include: forest protection, reforestation through forest regeneration, reforestation through rotation and provision of alternative energy sources like bio-energy and encouragement of active participation of communities in forest conservation and in the implementation of reforestation programmes. The forest protection option is more viable than all the other options as it has the highest mitigation potential (242t C/ha) and a conducive initial cost of investment. The intention of mitigation under this sector is to increase the area under forest cover and reduce deforestation and forest degradation through enhanced generation, reforestation and bioelectricity generation.

(a) Adaptation:

To address the issue of poverty, the government promotes community forests through establishment of woodlots for various purposes including sales of timber, beekeeping and community based eco-tourism to benefit local communities and the country as a whole. The country also promotes growing of multipurpose trees in order to have diversified products from a small piece of land.

(b) Mitigation:

The country has introduced Agroforestry into the national farming systems. Agroforestry is one of the practices that increase crop resilience to climate change through integration of trees with crops and livestock. It also promotes crop diversification to ensure food security and generation of revenue from the surplus. People afford to have a balanced meal since more than one produce is harvested from the same piece land thus maximizing land productivity.

2.2 Rangelands management:

(a) Adaptation:

The government is focusing on introducing and promoting drought tolerant grass and fodder species to address the long dry periods. One of the promote water harvesting techniques

(b) Mitigation

Some of the mitigation initiatives that government is doing are: increasing quantity and quality fodder banks; fodder conservation (baling, rotational grazing). Embark on reducing stocking rates to improve overall livestock productivity. Improve market access and private sector participation to sell animals during the start of the dry season. Carry out prescribed burning in order to have controlled fires.

3.0 Key gaps, constraints and challenges in addressing climate change

Swaziland faces pressing social and economic challenges which weaken her ability to set aside resources for implementing climate change projects. The country is classified as a lower income country and is thus seen not to lack resources to undertake climate projects without external assistance.

Further more, there are information gaps on education, training and public awareness and efforts have been made to strengthen the capacity of the Ministry of Education and Training to lead and coordinate the integration of climate change in the school curricula. Priorities aimed at strengthening national capacity in assembling and interpreting climate data and information were identified. It is therefore critical that technical capacity and human resource development are undertaken to strengthen the existing weakest links. This includes capacity in data collection and systematic observation, systematic research and development in climate change including downscaling models. In this regard, there is a need to mobilize support that National Institutions (private and public) to coordinate and strengthen their technical and human capacity.

Forestry

- The National Forest Policy does not cover climate change issues hence an urgent need to review it
- The complexity of the subject and lack of understanding by stakeholders
- Inadequate coordination of climate change issues nationally to clearly define what is expected of each sector
- Inadequate resources (financial, human, skills)
- Outdated forestry inventory data that is a basis for making informed decision
- Competing land uses which result in loss of forests and carbon stocks
- Land tenure, ownership and user right affects the implementation of forestry activities
- Lack of a Land Policy

Rangelands

- Lack of a rangeland policy to regulate stocking rates in Swaziland's communal grazing land.
- Open access to rangelands results in the tragedy of commons, hence any proposed development in communities are sited in rangelands with little regard to impacts on livestock and wild life, as well as species diversity and richness.
- Lack of an integrated fire management approach by different land users.
- Timeliness of extension messages reaching farmers on weather changes.
- Lack of research by the Range Management Section to map, measure grass yields and species composition against weather patterns as they obtain from different parts of the country and further relate the information to farmers.

4.0 Assistance required for climate change actions

- Review of the National Forest Policy and National Forest Action Programme
- Capacity building (research skills to determine climate change and adaptation impacts)
- Formulation of a rangeland policy to regulate livestock densities and carrying capacities on rangelands.
- Training of rangeland officers on climate change applications as they relate to rangelands.
- Equipment and material for facilitating rangeland research relating to climate change.

5.0 Recent climate change activities and projects related to forests and rangelands

Forestry

- Afforestation / reforestation of degraded land
- Promotion of Agroforestry practices
- Promotion of community woodlots to relieve pressure on natural forests and woodlands
- Promotion of fuel efficient stoves in collaboration with the Energy Department of the Ministry of Natural Resources and Energy
- Formulation of a Integrated Fire Management Policy, Legislation, Strategy and Action Plan to address issues of fire

Rangelands

- Educate farmers to reduce livestock numbers to match the carrying capacity of the rangeland, to avoid degradation of rangelands through selling all unproductive males and culling of old female cows at the beginning of the dry season.
- Fodder conservation through fencing of baling sites to make hay
- Establishment of grazing management demonstration to improve range management and livestock productivity.
- Update a study

6.0 Funding opportunities

The country is working with different development partners in addressing issues of climate change in both forestry and rangelands. These are:

(a) International and regional level

- FAO
- GIZ
- UNDP
- UNEP
- GEF
- COMESA
- ADB

7.0 Recommendations

In order to adapt and mitigate the impacts of climate change in forests and rangelands, these are the country has the following recommendations:

- Integrate climate change aspects into the National Forest Policy, Legislation Strategy and other relevant documents
- Carry out a study to determine alternative livelihoods for forest dependent communities in order to reduce deforestation of natural forests and woodlands
- Develop an awareness programme on the benefits of adaptation and mitigation programmes/activities on reversing the impacts of climate change on forests

- Formulate a rangeland policy to regulate livestock densities and carrying capacities on rangelands
- Train rangeland officers on climate change and future implications to livestock farming as well as biodiversity
- Research: Update the study on Swaziland's range resources and grazing potential by J. Sweet and S. Khumalo (1994) in order to ascertain the present status of the nations range resources
- Improving overall livestock productivity through proper management (breed, health, feed)
- Increasing quantity and quality feed crops in order to reduce heavy reliance on rangelands; hence reduce grazing pressure
- Research to support farmers (large scale and smallholder) to determine optimum amounts of manure to be applied, and waste management.

8.0 CONCLUSIONS

The country appreciates the support accorded by her development partners in addressing issues of climate change. Further appreciation goes to the Belgium government for supporting this workshop that seeks to address issues of climate change directly affecting forests and rangelands. The SADC Secretariat is commended for organizing this workshop to take stock of countries' efforts related to forests, rangelands and climate change. Swaziland will is prepared to implement the outcomes of the regional programme that will be developed at this workshop.

Reference

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