



Republic of Botswana

BOTSWANA COUNTRY REPORT

FORESTS, RANGELANDS and CLIMATE CHANGE ADAPTATION in SOUTHERN AFRICA, Johannesburg, 17-19 June, 2013.

I. Introduction

Information on climate change related vulnerabilities and impacts (current and predicted) in your country.

Botswana is endowed with a diversity of both herbaceous and woody vegetation. The vegetation provides a wide range of goods and services that satisfies the needs of the nation at large. The country has a total land area of 582, 000 km² of which sixty percent (60%) is comprised of forests and rangelands. Furthermore, out of the sixty percent, only 1% is made up of forest reserves.

Botswana's productive economy is fundamentally dependent on the exploitation of natural resources and ecosystems for sectors such as mining, manufacturing industry, energy, tourism, livestock and arable agriculture. Many people especially in rural areas are dependent on natural resources for their livelihoods. As a result national planning is undertaken in a coordinated approach to derive value from the utilization of natural resources and ecosystems to support both social and economic objectives of development.

Botswana has developed policies, strategies and plans that support the conservation and protection of finite natural resources; promotes use of renewable energy as alternatives; adopting and mainstreaming global multilateral environmental agreements and protocols in national legislative framework and policies. To achieve a long term sustainability of the environment, Botswana recognizes the need for increased coordinated and collaborative partnership between stakeholders including private sector, general public, civil society, public sector and rural communities.

Botswana's abundant biological resources are under increasing threat from a variety of land use practices. One of the main threats to Botswana's biodiversity is habitat destruction and reduction, as well as overexploitation of natural resources such as sand,

firewood, and wildlife which leads to ecosystem imbalances. The situation is made worse by periodic droughts, desertification and habitat loss, which leads to human/wildlife conflicts, decline of some wildlife species and loss of forests.

II. National priority actions for addressing climate change in forestry

Describe the defined climate change priorities (both adaptation and mitigation) in forestry and rangeland management for your country, indicating relevant documents (e.g. National Communications to the UNFCCC, NAPA etc.).

A number of adaptive strategies designed to prevent further deterioration of the vegetation cover are being implemented in Botswana. These include control of deforestation, improved rangeland management and sustainable management of vegetation stands.

Control of deforestation

Deforestation is a global problem especially in fragile ecosystems such as those in Botswana's dry land forests. Although dry lands forests have a low timber production potential, they provide crucial products such as fuel wood, poles, food and medicinal products. Indiscriminate harvesting of both woody and non-woody components of the forests leads to deterioration of forest lands. Control of deforestation consists of programmes such as tree planting aimed at minimizing the impacts of uncontrolled tree felling that could lead to soil erosion.

Sustainable utilization and management of forest resources

Degradation of range land, depletion of wood resources and over-exploitation of veldt products are some of the major environmental problems. Adaptive options for rangelands include manipulation of livestock densities and introduction of grazing controls. The Community Based Natural Resource Management (CBNRM) is a government initiative that ensures communities prudently use forest resources in a sustainable manner, so that they harvest to meet their needs as well as prepare for a continuous and good supply in the future.

Alternatives to forest products

To relieve the forests from harvesting pressure, the use of alternatives for energy, fencing and building material and food must be sought as options. A large population in the rural areas uses fuel wood as a source of energy. The high population increase in Botswana puts the natural woodland at high risk as the consumer base increase in comparison to the resource base. This calls for alternative sources of energy. The obvious sources are paraffin, domestic gas, electricity and solar. The motivation to use fuel wood when this other alternatives are available and less time consuming to secure is the price associated with them. Energy saving stoves were introduced as a measure to reduce fuel wood consumption. Due to social reasons, the stoves were put aside still in good condition; Botswana use open fires not only as a source of energy, family matters are usually discussed around a fire especially in rural areas. Tree planting therefore becomes the only option. Most communities still use poles and grass for construction of houses. Metal building materials are available, but due to the price attached to them, most people do not

afford to buy these materials. The government has introduced alternative income generating alternatives in rural areas to afford the people to buy material such as corrugated iron for roofing.

III. Key gaps, constraints and challenges in addressing climate change

Summarize the major impediments that limit climate change responses in forestry and rangeland management in your country.

Botswana is highly vulnerable to the negative impacts of climate change across many of its ecological zones and economic sectors. Therefore, it is paramount to strengthen the resilience of economic sectors, communities and institutions to enable them to adapt to changing climate scenarios. To facilitate for this, and as part of the National Development Plan 10, Sectoral plans are supposed to include development and adaptation mitigation measures as well as promoting their adoption.

- **Limited Financial Resources**

Funds are needed for major activities like; the conduction of periodic and comprehensive national forest resource inventories, development of Forest Management Plans, and forestry related research.

- **Lack of expertise**

There is limited technical capacity/expertise and research specific to climate change issues and forestry issues.

- **Lack of a National Strategy for Sustainable Development**

Sustainable Environment is a cross cutting issue which has strong linkages with other economic sectors. Therefore, a National Strategy for Sustainable Development is needed to guide in maintaining and improving the capacity of natural resources to function within ecological limits while supporting the development and aspirations of current and future generations.

- **Lack of a National Climate Change Policy, National Climate Change Strategy and Action Plan**

Botswana in the next three years will develop the National Climate Change Policy and a Comprehensive National Climate Change Strategy and Action Plan. This will facilitate effective implementation, adaptation and mitigation of intended actions country wide. This process will also provide the opportunity to mainstream climate change considerations into national macroeconomic policies and sectoral policies as well as planning and budgeting of development initiatives. For example, the transport sector will reform its road network designs and together with waste management efforts explore taxation measures.

- **Public Education**

It is necessary to raise public awareness regarding the importance and wise use of forest resources.

- **Regulation for the control of Ozone Depletion Substance (ODS)**

The absence of Ozone Depletion Substance (ODS) Regulations necessitates a review of the Meteorological Services Act of 2009. The target is to effectively control ODS consumption and minimize emissions as stipulated under the Montreal Protocol on Substance that Deplete the Ozone Layer.

IV. Assistance required for climate change actions

Briefly indicate what assistance would be required in your country to address climate change in forestry and rangeland management

- **Vegetation simulations**

Simulations of vegetation using the BIOME model have limitations in representing some vegetation types such as the wetlands and the salt pans appropriately. It will be helpful to be assisted with models that could give detailed analysis.

- **Forest Inventories**

Botswana needs a comprehensive forest inventory. There is need to put together information on work done on the value of forestry and veldt products in a database. The information should also include the monetary value of forestry resources for a hectare of woodland. This could serve as a guide for policy makers each time they have to recommend that parts of woodlands be given away for new developments. Inventories of forests should be conducted on a more regular basis, for example, every five years so that policy, management and exploitation of forest resources will be guided by prevailing circumstances. Carrying out forest inventories is an expensive exercise for which assistance is required.

- **Enterprise development for rural communities**

Rural communities should be encouraged and trained on enterprise development using the natural resources that are at their disposal. Several veldt resources have the potential to be developed and marketed at higher values. This will enhance the success of the CBNRM and improve the income of the country. This training needs financial assistance.

- **Lack of a National Climate Change Policy and Strategy**

- **Limited technical capacity/expertise and research specific to climate change issues.**

- **Inadequate institutional framework to support the coordination and implementation of national programmes**

- **Low level of public awareness in respect of the courses and impacts of climate change on ecosystems, human health, welfare and economy.**

V. Recent climate change activities and projects related to forests and rangelands

Provide a list of climate change projects or other activities that have been implemented or are planned for implementation in forestry and rangeland management.

The following are initiatives to combat climate change in the forestry and rangeland management:-

- **Forest Policy**

Approved by Parliament in 2011, the Forest Policy is a framework that provides guidance and facilitation in the management of forests and range resources of the country through conservation, development, and sustainable use. The Policy defines basic principles, objectives, strategies and action plans for management of forests and range resources through conservation, development, and sustainable utilisation to meet social, cultural, economic, environmental and ecological needs of present and future generations. It represents statements of intent that the government sets out as part of its overall vision for forestry.

- **Parliamentary Portfolio Committee on Wildlife, Tourism, Natural Resources and Climate Change**

Furthermore a Parliamentary Portfolio Committee on Wildlife, Tourism, Natural Resources and Climate Change was established in November 2011. Botswana has also compiled a second report to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) entitled Botswana's Second National Communication (SNC). The SNC identifies sectors of the economy which emit greenhouse gases and also mitigation strategies to reduce greenhouse gas emissions. It further undertakes vulnerability assessments of key economic sectors to effects of climate change and identifies mitigation measures.

- **Promulgation of or review of policies**

To overcome the challenges posed by environmental degradation, it is planned for the next three years (until 2016) to undertake legislative interventions through promulgation of or review of policies, laws, regulation standards and guidelines in Sectors such as Agriculture, Water, Energy, Transport, Mining, Environment and Health.

In addition the consolidation of the Forestry and Range Resources Legislation is being undertaken with the aim of developing a single Forest and Range Resources Act to provide for the institutional and regulatory framework for the sustainable management of forest and range resources. The Act is likely to be finalized by the end of 2013.

- **National Biodiversity Strategy and Action Plan (NBSAP)**

The Environmental Sector continues the implementation of National Biodiversity Strategy and Action Plan (NBSAP).

- **National Environmental Fund**

Botswana has also established a National Environmental Fund. This financing mechanism is meant to ensure access to sufficient resources to maintain and enhance the environmental activity agenda, especially where it concerns civil society involvement.

- **Tree planting**
 The Government of Botswana continues to encourage people to plant trees across the country to mitigate the effects of climate change. During 2012, 63,811 tree seedlings were produced and 122, 931 planted. The plan is to plant 150000 seedlings during 2013 despite the challenges of drought.
- **Management of Wildland Fires**
 Botswana's landscape co-evolved with wildland fires. However, recently their frequency, intensity and area coverage have increased significantly thereby posing potential deleterious effects to our ecosystem. The government is working closely with the government of Australia in training officers and communities to equip them with wildland fire management strategies. To date 1212 fire fighters have been trained and a Fire Management Strategy has been developed. In addition four rural fire brigades have been established in Chobe, Ngamiland, Central and Ghanzi districts, which are working closely with existing urban fire brigades. The country also uses rapid response teams comprising of seasonal fire teams (primarily government officers) and community first responders which are mainly in the Central District (Nata, Kodibeleng and Rakops).
- **Establishment of Tree Nurseries**
 There are currently 202 backyard tree nurseries established across the country and out of these, 49 were assisted through Poverty Eradication funding. Recognizing the contribution of backyard nurseries in poverty eradication, government has included them as an alternative package in the Poverty Eradication Programme.
- **Rehabilitation of Degraded Land**
 A total area of 315Ha is under rehabilitation (Central: 295Ha, Southern: 2Ha, Kgatleng: 3Ha, North-East 10Ha, South East- 5Ha). A rehabilitation plan for Lesunyana in South- East District was developed during May 2013 and hundred (100) trees were planted as an intervention measure. Project funding proposals for both Lesunyana and Mokolodi reserve have been submitted in May 2013 to Forest Conservation Botswana for support. At Gaborone Game Reserve one gabion structure to control gully erosion was completed. Four new degraded areas in Southern, Kweneng, Ngamiland and Chobe have been identified. Topographic survey which was started in Mosu in October 2012 was completed in May 2013. Specific intervention measures as per the survey report recommendations are to be developed. The project will be officially launched on the 17 June 2013 during the commemoration of the World Day to Combat Desertification.
- **Community Based Natural Resources Management**
 Community Based Natural Resources Management (CBNRM) Policy: It provides communities with an incentive for sound management of the natural resource base. It also creates a foundation for conservation based development, in which the need to protect biodiversity and ecosystems is balanced with the need to improve rural livelihoods and poverty.

- **The following are concepts that have been developed but still require funding:**
 - ✓ Management of Pans and Grazing areas around the Pans in Northern Kgalagadi
 - ✓ Establishment of a National Inventory on Forests and Veld Products to monitor and evaluate utilization of these resources;
 - ✓ Rehabilitation of Rangeland Resources in Tubu Area
 - ✓ Indigenous Rhizobia in Botswana Soils
 - ✓ Ecotourism in the Forest Reserves
 - ✓ Utilization of Indigenous Plants and their Conservation and Utilization in Livestock Ethno-Veterinary Medicine
 - ✓ Protecting Wild-Harvested Phytomedicinal Plants in Botswana
 - ✓ Improving Economic Utilization of Dryland Botanical Resources
 - ✓ Makopong Communal Range Management Project
 - ✓ Developing Ways of Identifying the Spatial Distribution of Degraded Areas in the Bobirwa Subdistrict.

VI. Funding opportunities

Indicate bi-lateral and/or multi-lateral partnerships that your country is or has engaged in related to forests, rangelands and climate change

Botswana has accessed funds from the Global Environment Facility to implement the following projects:

- **Forest Conservation Botswana**
Government of Botswana and the United States of America have entered into an agreement to establish a company under the Ministry of Environment Wildlife and Tourism to support projects in Botswana on forest conservation undertaken by communities and other legal entities.
- **Mainstreaming Sustainable Land Management (SLM) in Rangeland Areas of Ngamiland District Productive Landscapes for Improved livelihoods.** The project is implemented by Departments of Forestry and Range Resources, Environmental Affairs, Animal Production, Crop Production and Botswana Meat Commission. It is still at the inception stage and a detailed project proposal is yet to be completed for financing.
- **SADC MRV REDD+**
Botswana is one of the pilot countries in a SADC supported programme on reducing emission from deforestation and forest degradation (REDD+) for the period 2012-2015. This is on the establishment of monitoring systems to measure, report and verify (MRV systems) changes to forest carbon stock as one of the preconditions to benefit from compensation payments of a future REDD+ Mechanism.
- **SADC AMESD Project**

The African Monitoring for Environmental Sustainable Development (AMESD) project is aimed at building capacity within the country to effectively manage wildland fires. This fire detection system can provide fire danger index, 3 day weather forecast and fire radiative index (fire intensity). This has enhanced fire management through the provision of fire danger rating index information which will be publicized in order for the public to avoid starting fires on certain days as it may get out of control due to the prevailing weather conditions.

- **Collaboration with New South Wales-Rural Fire Services (Australia)**

The objective of this project is to build capacity for effective fire management and involves deployment of Australian Fire Experts to Botswana as per identified wildland fire priority areas. Botswana also travel to Australia to acquire exposure on the Australian fire management system. The collaboration started in 2009 and will last 2014/15.

VII. Recommendations and conclusions

A wide range of activities in Botswana are dependent on the natural environment for growth and sustainable development. To ensure that the natural environment continues to provide this support, several environmental issues will need to be continually undertaken. These include issues such as sensitization of; the public, business community and non-governmental organizations to environmental friendly practices. This will require that supportive legislation be reviewed such that they conform to changing times and prevailing circumstances.

Based on the needs and gaps already identified we recommend that developing countries be assisted with technical guidance and supported to access available funding to further prepare for challenges of climate change.