

TARGET 15: CLIMATE RESILIENCE

Climate resilience can be generally defined as the capacity for a socio-ecological system to: absorb stresses and maintain function in the face of external stresses imposed upon it by climate change and (2) adapt, reorganize, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts.

With the rising awareness of climate change impacts by both national and international bodies, building climate resilience has become a major goal for these institutions. The key focus of climate resilience efforts is to address the vulnerability that communities, states, and countries currently have with regards to the environmental consequences of climate change. Currently, climate resilience efforts encompass social, economic, technological, and political strategies that are being implemented at all scales of society. From local community action to global treaties, addressing climate resilience is becoming a priority, although it could be argued that a significant amount of the theory has yet to be translated into practice. Despite this, there is a robust and ever-growing movement fuelled by local and national bodies alike geared towards building and improving climate resilience.

The natural resources base of The Gambia has been subjected to a wide variety of adverse human-induced impacts. Consequently, the resources have degraded considerably to their present undesirable state. The three most persistent threats on protected area resources (National Parks and Nature reserves) includes logging, infrastructural developments and land conversion. Demand for timber and non timber products on protected areas are high. Most of the protected area surroundings are being degraded. Road construction and other infrastructural developments to some extent, have cause major disruption in the process and functions in particular of wetland ecosystems. Annual burning of the forest presents a major threat to biological resources both within and outside protected areas. Non-sustainable utilization of natural resources has been in existence since time immemorial as a result of religious and cultural beliefs. The wrong perception of natural resources as free goods for the poor and resources for the commons generally, that are replenished by God, has proved to become a catalyst for continued overexploitation, posing serious challenges and threats to biodiversity in a fast growing nation like the Gambia. Until now conservation of critical and unique entities remains an unwelcomed affair. Conservation is still faced with the challenges of increasing demand for environmental goods and services such as food, water, housing materials and land, just to name but a few. In the absence of any significant improvement in livelihood of many rural Gambians, continued exploitation of the natural resource base with the current population growth rates becomes highly inevitable. Non sustainable utilization practices including mangrove cutting as an

alternative for fuel wood in much of the Greater Banjul area and for fencing and roofing purposes in the North Bank Region points to a grim future for biodiversity and its dependent human populations. Unregulated and illegal hunting practices are common throughout the entire country. Destructive fishing practices in its various forms are common in the Greater Banjul Area and beyond to the lower reaches of the River Gambia and the rest of the country.

Illegal harvesting of thatch grasses and the cutting down of tree branches to collect wild fruits is a common non-sustainable method of natural resource utilization, a practice often perpetuated by cross border poachers from Senegal adjacent to Bao bolon Wetland Reserve in the North Bank (Management report 2007). Shifting cultivation and itinerant farming practices that enable a sizeable population to establish ownership over every single strip of land leads to further fragmentation of wildlife habitats and destruction of migratory corridors. Illegal logging of timber and fuel wood is rampant in the Fonis, Jarras, Kombos, URR and the Kiang West area. Industrial and household waste dumping into wetlands of Tanbi National Park, Tanji Bird Reserve and Kotu Creek is of serious concern. Continued erosion along the Atlantic coast has been attributed to numerous illegal sand mining activities in the areas of Kartong and Bijilo.

Unregulated charcoal burning activities in Kombo East around the villages of Tubakuta, Ommorto, and Giboro demonstrate the increase dependency on natural resources by the population for their livelihood. Land tenure rights and the demand for land outside traditional farming areas are also steadily leading to massive cutting down of mangroves to cultivate rice in the North Bank Region. Local level intervention to restore rice ecologies through the construction of non-environmentally friendly anti-salt dams in the region have resulted into the abandoning of potential rice growing zones in areas such as Farafeni, Kosemar, Foni Jarrol etc.

The Gambia's coastal and marine areas are under increasing pressure. A large proportion of the country's population resides in coastal areas and depends upon them for their livelihoods. Population growth and in-migration as a result of disrupted rainfall patterns and land degradation in the hinterland translates into growing pressure on coastal and marine resources. There is also evidence of significant pressure on species of global and regional concern such as nesting and migratory birds and marine turtles, the eggs of which are frequently collected; sharks, harvested for their fins; and manatees, hunted for meat, as well as growing conflicts between the population and species such as hippopotamus as the two are increasingly forced to depend upon the same resources for survival. The coast also

is the primary tourism attraction of The Gambia, which alongside other economic development initiatives is increasing development pressure in this zone.

The Kololi coastal zone is confronted with a range of “creeping” environmental issues, such as coastal erosion, changes in coastal sediment dynamics and morphology and a decline in the functioning of protective ecosystems (e.g. mangroves). Coastal dynamic modelling, using bathymetry, wave climate data from 2000 to 2009 (Bijl, 2011) concluded that the cause of the high erosion rate at Kololi Beach is driven by multiple processes. The combination of a large amount of shell fractions in the sediment, sand deficit due to sand mining and the effect of sea level rise all exert a high influence on sediment transport. There is a natural trend in erosion along the coast of The Gambia, caused by alongshore gradients in the longshore transport and the effect of sea level rise. A changing reef bathymetry and changing wave climate have compounded the erosive processes. It is expected that sea level rise projected for the Gambia will likely amplify the adverse impacts that are already being felt.

There is strong national commitment to protecting the country’s natural resources. DPWM is the government agency responsible for ensuring the management of the country’s protected area network as well as for the conservation of its biodiversity both within and outside this network. While, DPWM is expected to take the lead in ensuring application of existing policies and legislation and to promote initiatives on the ground leading to sustainable management and use of biodiversity resources, it is recognised that it cannot do this alone. DPWM hence works in close collaboration with other government agencies, NGOs and civil society partners.

In recent years, there has been serious conservation efforts, particularly in community protected areas, series of planting has taken place ranging from mangrove to indigenous tree species that are seriously declining in population, annual tree planting led by the Department of Forestry, training of volunteers, development of individual species action plans, bye-laws, management plans and eco-tourism plans for some community protected areas, couple with awareness campaign on the importance and the need to conserve our environment. Also there has been series of surveys and inventory done to enhance informed decision by management. The staff numbers has been increased and patrol intensified to enable the apprehension of offenders who are prosecuted mostly at the District level.

The establishment of community forests and agro-forestry initiatives has halt/reduced land degradation particularly in the North Bank Region, where land degradation is a major threat.

The enhancing resilience of vulnerable coastal areas and communities to climate change Project promotes a paradigm shift towards a climate resilient coastal development through its integrated and holistic approach to managing climate risks for coastal areas for approximately 59,140 vulnerable people in the Kololi stretch and surrounding communities of Serrekunda (including 35,000 women) through two (2) inter-linked Components:

Output 1: Natural coastal defence systems strengthened to reduce the exposure of coastal communities and key infrastructure to climate risks.

Output 2: Strengthening the policy and institutional framework for the implementation of an integrated coastal zones management in Gambia.

The project "enhancing resilience of vulnerable coastal areas and communities to climate change", is a four year project devised to enhance resilience of vulnerable coastal areas and communities to climate change and to reduce the country's vulnerability to sea level rise. The alternative livelihood component of this NEA/UNDP/GEF Coastal Resilience project is striving to ease Climate stress in affected local coastal communities whose farmlands and rice fields are affected by the phenomenon of Climate Change. One of the supports the project rendered to these affected local communities is the establishment of modern horticultural gardens for them as an alternative to the rice fields and farms in the wetland affected by salt intrusion. Each of these garden hosts to an over-head water tank with a capacity of over 15,000 cubic litres that will supply running water through laid-pipes to over fifteen reservoirs within the garden in an effort to provide easy access to water from any position in the garden. The gardens are expected to serve these communities in both dry and raining season, as Water and security being major problems faced by most communities in the sustenance of any project is adequately addressed. In addition, all the gardens are fortified with modern fencing techniques that can serve the communities for the next thirty years.

Coastal resilience project (USD \$900,000) in Tendaba village, aimed at tackling three key aspects: coastal defence work, livelihood support and institutional strengthening with a constructed dyke of 650 meters long, at the village. These among other efforts are been done to build capacity for a socio-ecological system to: absorb stresses and maintain function in the face of external stresses imposed upon it by climate change and (2) adapt, reorganize, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts.

The various activities highlighted above and the policies and strategies put in place will contribute to the realisation of the following SDGs, SDG 6: Ensure the availability and sustainable management of water and sanitation for all; SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation; SDG 10: Reduce inequality within and among countries; SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable; SDG 13: Take urgent action to combat climate change and its impacts; SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development; and SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss

To what extent are ecosystem resilience and the contribution of biodiversity to carbon stocks being enhanced through conservation and restoration?

To a great extent because in recent years, there has been serious conservation efforts, particularly in community protected areas, series of planting has taken place ranging from mangrove to indigenous tree species that are seriously declining in population, annual tree planting led by the Department of Forestry, training of volunteers, development of individual species action plan, bye-laws, management plans and eco-tourism plans for some community protected areas, couple with awareness campaign on the importance and the need to conserve our environment.

• To what extent are at least 15% of degraded ecosystems restored, contributing to climate change mitigation and adaptation, and to combating desertification?

Almost 15% or more percent of the degraded ecosystems have been restored, although a proper coordinated approach of evaluating how much was restored was not done but knowing the ecosystems heavily affected by degradation and the portions of those areas that are restored certainly if mapped out accounts for more than 15% . There is need to map out the areas and calculate to know the exact percent that has been restored.

- **How is the extent of degraded habitat changed since the country adopted the Strategic Plan for Biodiversity 2011-2020?**

It has change greatly, after experiencing low yield for some years, conservationist were able to convince the farmers as well demonstrate the ecological relationship between trees and soil fertility, that has change the mindset of most farmers in their mode of operandi in conducting their farming practices couple with the campaign of planting million trees annually led by the Department of Forestry. Also there has been a great achievement in increasing the number of Protected areas, DPWM managed to establish thirteen new community protected areas, as well as helping them development management plans and bye-laws to enable its protection.

- **What areas and/or how much habitat have been restored per ecosystem type, and are these areas mapped?**

Restoration has been done mostly within wetlands both inside and outside of PAs, series of mangrove planting took place in different areas, also there has been planting of indigenous tree species in protected areas. There has not been a comprehensive assessment or mapping of restored area according to ecosystem types but coordinates are available for most of the areas where planting was conducted.

- **Are any of the restored areas important for carbon sequestration? To what extent have these been mapped spatially?**

The mangrove stand were massive restoration was done within Tanbi wetlands National Park and in some community protected areas, are important for carbon sequestration and also the indigenous tree species that have been planted mostly within Pas.

- **What types of restoration activities are being used and how effective are they?**

Periodic restoration is done particularly for mangrove ecosystem, and this has proven to be very effective.

Annual tree planting mostly of indigenous tree species during the raining season (of a target of 1 million trees) is led by Department of Forestry but this is not very effective because after planting the trees are not under any body's care leaving them at the mercy of the gracing livestock and frequent bushfires in some areas.

- **How are the social, economic and environmental objectives and the engagement of all relevant actors, including indigenous peoples and local communities, and women, being accounted for?**

In almost all the mangrove plantings, women and children were the majority in most of the communities, women are the champions in environmental protection in the Gambia, and they are also the oyster collectors.

- **How are restoration activities affecting ecosystem resilience?**

It is affecting it positively because now the salt intrusion in most areas is redressed enabling the reclaim of old rice fields.