FEDERAL REPUBLIC OF SOMALIA

National Biodiversity Strategy and Action Plan (NBSAP)

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Contents

Acronyms and Abbreviations

AOI	Area of interest
CBD	Convention on Biodiversity
CIFOR	Centre for International Forestry Research
CITES	Convention on International Trade in Endangered Species
CR	Critically Endangered
DD	Data Deficient
EEZ	Exclusive Economic Zone
EGS	Ecosystem Goods and Services
EN	Endangered
FAO	United Nations Food and Agriculture Organization
GDP	Gross Domestic Products
GEF	Global Environmental Facility
GHG	Green House Gases
GIS	Geographic Information System
GPS	Global Positioning System
ICRAF	World Agroforestry Centre
IUCN	International Union for the Conservation of Nature and Natural Resources
MAB	Man and Biosphere
MEA	Multi-lateral Environmental Agreement
MPA	Marine Protected Areas
NAP	National Action Programme (of UNCCD)
NAPA	National Adaptation Programme of Action (of UNFCCC)
NBSAP	National Biodiversity Strategy and Action Plan
NCS	National Conservation Strategy
NGO	Non Governmental Organization
NRM	Natural Resource Management
NSC	National Steering Committee
NDVI	Normalized Difference Vegetation Index
ODA	Overseas Development Assistance
PA	Protected Areas
PIF	Project Identification Form
PTF	Project Task Force
REDD	Reducing Emissions from Deforestation and Degradation of Forests
SDF	Somaliland Development Fund
SMART	Specific Measurable Achievable Realistic Time-bound
SWALIM	Somalia Water and Land Information Management
UNCCD	United Nations Convention on Combating Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education Scientific and Culture Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNSC	United Nations Security Council
VU	Vulnerable
WRI	World Resource Institute
WWF	World-Wide Fund for Nature

Executive Summary

Context for this National Biodiversity Strategy and Action Plan (NBSAP) is set by the key stakeholders with the following objectives:

i. creating a shared understanding of biodiversity among the stakeholders at the national and regional levels in Somalia; and

ii. aligning their understanding as well as commitment to biodiversity conservation with the overall Strategic Plan for Biodiversity 2011-2020.

The CBD definition of biodiversity, "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes which they are part of; this includes diversity within species, between species and of ecosystems" is adopted. The importance of biodiversity is encapsulated at Ecosystem Goods and Services (EGS) level, commencing from the provisional services to life supporting systems such as watersheds, etc. The link of overall Somali economy with biodiversity is explained as the direct and indirect contribution of biodiversity towards the economy goes beyond 80%. This can be justified while looking at the watershed and nutrient cycles support to agriculture and livestock sectors. The EGS also feed the energy requirements through elements such as charcoal, etc. Another contribution of the biodiversity is enhancing resilience on the face of disasters – natural and man made.

As a first step to achieve this NBSAP, the key stakeholders agreed to an inclusive process of taking on board the relevant actors both in Somalia and abroad. Series of focused group discussions, structured interviews, two training and six consultative workshops were held in Mogadishu and the zonal capitals of Somalia. In Nairobi, meetings were held with International Organizations such as UNDP, UNEP, WWF, IUCN, World Agroforestry Centre, CIFOR, etc. In order to infuse the contemporary global insight, the expertise of the Global NBSAP Forum was consistently attained. Beside extensive literature review, efforts were made to make use of the tacit indigenous knowledge of the Somali communities. Together with the Somali stakeholders, the draft NBSAP is refined through the substantial insight of CBD Secretariat, FAO Headquarters & Regional office, and the NBSAP Forum. The final validation workshop was held in Mogadishu in August 2015 which was chaired by the Deputy Prime Minister of Somalia together with State Minister for Environment and the FAO Representative for Somalia. This workshop was attended by representative of all the key stakeholders who unanimously validated this NBSAP. The project: (I would explain here briefly the work that has been done to achieve this NBSAP).

The status of biodiversity of Somalia was considered in the context of two larger biodiversity hotspots, predominantly Horn of Africa and a southern encroachment Coastal Forests of Eastern Africa Hotspot. This was further elaborated on the basis of six eco-regions of the country, five terrestrial regions and one aquatic/coastal region. The aquatic eco-region is confined to the coastal belt and coastal wetlands, as with very narrow continental shelf. Somalia's deep seas are characterised by upwelling and migration phenomenon that naturally replenish the biodiversity beyond the coastal belt. The situation in each of these regions is analysed in the context of representative biodiversity, its current status and the prevailing threats. Although Somalia is famous for its species diversity and endemism with more than 5000 plant species and 1332 animal species, dominated by overall endemism in general and

plants endemism in particular, nevertheless the level of degradation is clearly evident in all the five zones. Although data available is limited, and access to most of the biodiversity hotspots is restricted by security situation in the country, and a comprehensive biodiversity assessment is yet to be made, evidences collected suggest that considerable degradation of the biodiversity resources of Somalia is ongoing. Many of the potential flagship species are either locally extinct or otherwise threatened.

The key drivers behind this biodiversity degradation are clustered in a. direct human-led drivers and b. indirect drivers. The direct drivers are habitat degradation & fragmentation, unchecked hunting/poaching, overgrazing, deforestation for charcoal making & other uses, urbanization, agriculture expansion and mining. The indirect drivers include climate change & its associated extreme events of floods, droughts, storms, etc.; and invasive species, conflict and post conflict situation. The other indirect drivers are mostly elaborated in gaps and needs such the issue of limited capacity and finances.

Gaps and needs that limit the ability of Somali people and government to strengthen biodiversity conservation and sustainable use have been considered. These include weak institutional capacity and the absence of synergy among biodiversity managing actors. In most areas, a sectoral approach prevails over a holistic and more coherent approach that would generally be more effective. The lack of baseline assessments of biodiversity, including species that are directly used, is also to be included as a major gap as any effective management requires a sound baseline assessment. Although around forty terrestrial and Marine Protected Areas are considered for management revival, effective management is still to be put in place. Several institutional areas also need strengthening, among these policy and laws, staffing, skills, technology and networking need due attention. The reversal of the prevailing degradation process demands considerable finances, which are not available at the moment, thus such financial gap needs to be adequately filled through indigenous and ODA support. Last but not the least is the issue of insecurity, considering this as a leading challenge, a systematic approach needs to be developed to move ahead with the conservation activities despite the security issue. This can be done by working through the local communities on one hand and using remote sensing and GIS that may substitute the actual presence of international development partners to the maximum possible extent.

Keeping in view the status of biodiversity, the associated drivers of degradation and the gaps/needs in effective management a coherent coping mechanism is devised in the shape of strategic framework for biodiversity conservation and its sustainable use.

The Strategic Framework for biodiversity conservation and sustainable use: Through a consultative process, led by the Government, the strategic framework is formulated which consists of vision 2050, goal & objectives, 8 overarching principles, 14 strategic approaches that will guide the five main priority areas of Somalia National Biodiversity Strategy and Action Plan. The priority areas are supported through 20 Aichi targets supported with 71 sub targets that will be achieved through 233 SMART indicators. Keeping in view the specific geo-political context of Somalia, a two-phased time frame is adopted with Phase I ending by 2020 and Phase II concludes by 2030.

Strategic framework in summary: The Somali people envisions that, “by 2050 their biodiversity is restored and conserved followed by its sustainable use”. The NBSAP provides

a strategic framework that systematically translates this vision into actions leading to achieving it. NBSAP is based on the principles of empowerment of people with the rights and responsibilities to ensure that polluters pay, intergenerational equity is in place, indigenous knowledge is considered duly and the NBSAP objectives are mainstreamed through adequate policy, legislation and inclusive planning.

The Strategic Framework for biodiversity conservation and sustainable use in Somalia

VISION: By 2050, Somalia's biological diversity is appreciated, restored, conserved and its components are utilized in sustainable manner that contributes to the socio-economic development of the nation.

MAIN PRIORITIES: In conformity with the Strategic Plan for Biodiversity 2011-2020, five main priority areas were agreed that consist of: I). Creating understanding of the drivers of biodiversity degradation together with response measures; II). Reduce the direct pressures on Somali biodiversity; III). Safeguarding ecosystems, species and genetic diversity; IV). Enhance the benefits to all from biodiversity with emphasis on sharing it with marginalized groups; and V). Enhanced participatory planning, knowledge management and capacity building.

The Programmatic approaches: a) developing conducive policy & legislative instruments, b) strengthening the stewardship role towards intergeneration equity, c) adapting both in-situ & ex-situ conservation measures, d) forging inter and cross-sectoral partnership for entrepreneurship, e) assessing resource baseline & establishing benchmarks, f) encouraging the integration of scientific & indigenous knowledge, g) mainstreaming of biodiversity conservation in overall development process, h) facilitating the resource mobilization through conventional & non-conventional sources, i) creating response mechanism against the drivers of degradation, j) raising mass-scale awareness through communication & outreach mechanism, k) promoting incentive measures and l) strengthening bi-lateral, regional and international cooperation.

The summary of the priority areas its associated targets, sub targets and indicators are tabulated as follows:

Priority Areas	Targets	Sub Targets	Indicators
1	4	27	70
2	6	16	74
3	3	6	39
4	3	9	23
5	4	13	27
Total	20	71	233

The National priority areas are to be attained through series of targets guided by the twenty Aichi Targets as follows:

I. Creating understanding of the drivers of biodiversity degradation together with response measures:
    1. By 2022, People are amply aware through the formulation and implementation of knowledge-based communication and outreach strategy while using all the promising fora of professionals, local practitioners, media, academia, religious fora, etc. and through media including workshops, training, focused discussions, mass communication, etc.
    2. By 2028, at the latest, biodiversity values have been integrated into national and zonal development plans (specifically 5 years plans) and other poverty reduction processes and are being incorporated (as appropriate) into national accounting and reporting systems.
    3. Subsidies relevant to biodiversity are assessed, incentive management mechanism is in place and by 2030 harmful incentives are phased out whereas biodiversity friendly incentives are in place.
    4. By 2020, ecosystem related sustainable production and consumption ensured through collaborative steps including stakeholders' interface management, mobilizing finances, ensuing joint efforts of business enterprises and government towards value added & sustainable use of biodiversity products/services.

II. Reduce the direct pressures on Somali biodiversity through:
    5. By 2025, the rate of loss of natural habitats is assessed and concrete steps are in place to slow down the pace of degradation to half through two-fold measures of a). Addressing the drivers of degradation and b). Proactive efforts such as effective reviving of at least 30 protected areas (including marine protected areas) through concerted rehabilitation efforts.
    6. By 2030, while focusing on 8 MPAs along the coast of the South-Central, Puntland and Somaliland, coastal resources such as crustaceans, mangroves, coral reefs, marine turtles, cetaceans, etc. are sustainably managed and the on-going degradation is reduced by 80% through integrated coastal resources management in general and community based interventions in particular. This also includes reducing illegal fishing and waste disposal by 80% and applying conservation measures which will encourage recovery plans for endangered and threatened aquatic species.
    7. By 2030, areas under agriculture, aquaculture and forestry are managed sustainably by bringing significant areas under sustainable resource management in each of the five eco-regions through diversifying management practices including but not limited to integrated watershed management, climate smart agriculture, water harvesting, conserving indigenous genomes, REDD+ readiness in natural forests, promoting agroforestry in Juba & Shebelle

areas, arresting invasive species to 50% and curbing 60% deforestation for charcoal making.

8. By 2025, marine and terrestrial pollution is properly assessed and abatement measures are in place. This includes bringing down the toxic disposal in marine water to levels that is safe for the ecosystem function and biodiversity productivity.
9. By 2027, the extent and nature of invasive species *Prosopis*, Cactus, Indian crow, etc. are assessed, species for eradication are prioritized; and at least 20% of them are eradicated and the control mechanism of 40% of the prioritized invasive species is in place.
10. By 2025, the multiple anthropogenic pressures on coral reefs and the Junipers forest of Golis range that are affected by climate change are diminished by 30%, through demonstrating integrated coastal areas management and sustainable forest management respectively; the anthropogenic pressures on other vulnerable ecosystems such as mangroves, southern coastal mosaic forest, etc. affected by climate change are diminished by 40%.

III. Safeguarding ecosystems, species and genetic diversity by:

11. By 2026, the areas of particular ecological importance (mainly Protected and Marine Protected Areas) are prioritized and at least 33% of these areas are conserved and protected. In coastal/marine resources these includes mangroves, coral reefs, sea/migratory birds, crustaceans & pelagic fish, marine turtles' nesting and feeding grounds, whereas among the terrestrial resources the 33 Protected Areas (both proposed and existing) are focused.
12. By 2018, the exact status of various key species is assessed in representative eco-regions with special focus on biodiversity hotspots and potential flagship species, the management plan and the implementation mechanism is in-place and by 2030 the endemic threatened fauna and flora species are protected through restoring 35% of forest canopy;
13. By 2022, improved management of medicinal and aromatic plant species such as Frankincense, Myrrh & other tree species including the Commiphora through reseeding, collection, processing and developing strategic marketing and protected pricing are in place and at least two sophisticated Gene & Seed banks are functional. Elaborate management plan for genetically diverse cultivated plants and farmed & domesticated animals of Juba – Shebelle basins is also in place.

IV. Enhance the benefits to all from biodiversity with emphasize on sharing with and benefiting marginalized groups through:

14. By 2020, the mechanism for access to benefits sharing and equitable distribution of benefits and obligations is in place and by 2025, the distribution and accessibility of the ecosystems that provide essential services is improved by 35% from the current level, with particular focus on the vulnerable groups (poor, vulnerable, women, unemployed youth, indigenous groups, nomads).

15. By 2020, for both terrestrial and coastal forests, sustainable forest management programme with focus on REDD+ readiness is in place; and for selected intensive agriculture areas, by 2018, climate smart agriculture programme is in place. By 2030, at least 33% of the degraded coastal forest restored with upto 40% of carbon sequestration and 30% of the terrestrial forest are conserved with 17-25% carbon sequestration.
16. By 2016, the Nagoya Protocol is ratified by Somalia and by 2018, access to genetic resources and its fair & equitable distribution is enforced.

V. Enhance participatory planning, knowledge management and capacity building with the following:

17. By 2015, Somalia has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
18. By 2017 the compatibility of biodiversity related traditional knowledge and its prospects for grafting with the government management & the prevailing knowledge stream is assessed; by 2018 the customary use of biological resources is assessed and the gaps through policy interventions. By 2020, the grafted biodiversity management knowledge and practices are mainstreamed in the demonstration projects and initiatives.
19. By 2016, the knowledge and technology gap assessment is accomplished and by 2017 select initiatives for technology transfer and knowledge enhancing are commenced and; by 2020 essential modern technology and knowledge are demonstrated with at least four initiatives in respective eco-zones.
20. By 2015, the resource requirement for sustainable biodiversity management is assessed and resource mobilization strategy from conventional and non-conventional sources is in place, the implementation of which is commenced in 2016 leading to doubling the resource base by 2020.

CHAPTER 1: INTRODUCTION

This chapter deals with setting the context for the overall NBSAP process in Somalia including generating shared understanding of biodiversity and its value for the people of Somalia. The background to the NBSAP is explained in the context of its biodiversity in general and the country's ratification of Convention on Biological Diversity in particular, along with other obligations and opportunities associated with signing of this convention. At the end of the chapter the outlay of the NBSAP is presented.

1.1. Background to the National Biodiversity Strategy and Action Plan:

Somalia became the 193rd part to the Convention on Biological Diversity (CBD) when it ratified it in September 2009. The notice of ratification was registered with the CBD Secretariat in December 2009. By ratifying the CBD, Somalia committed to attain the objectives of CBD in Somalia as well as to contribute to this beyond its political borders through ripple effects of interventions as well as through proactive participation in the international efforts towards conservation of biodiversity, the sustainable use of its elements and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.

After ratification, the Federal Government of Somalia committed to the conservation of its biodiversity and as a first step to this commitment requested GEF in November 2011 to finance the formulation of Somali National Biodiversity Strategy and Action Plan with the technical assistance of FAO. GEF approved the project (Enabling Activity) in March 2013, whereas due to the changes in Federal Government, the implementation could commence in July 2014.

The NBSAP is thus the first effort in the history of Somalia to holistically and systematically look at the overall spectrum of biodiversity – ecosystems, species and genetic diversity. The formulation process comprise of situation analysis on one hand and formulating the strategic & action planning both however with keen follow-up of the CBD Strategic Plan 2011-2020 and its Aichi Targets. The major challenges include the lack of previous NBSAP, as the other countries have already adopted similar frameworks since more than ten years and are now aligning their NBSAPs with the CBD Strategic Plan and Aichi targets. The second challenge is handling the post conflict situation of Somalia, where access is difficult and perverse sensitivities associated with the conflict still prevails. Nevertheless through the consistent leadership of the Federal Government and the sincere efforts of the zonal environmental Ministries an inclusive and holistic approach, underlined as follows, for the formulation of NBSAP is adopted.

1.2. Overview of the NBSAP development process in Somalia

To ensure quality of an inclusive participatory approach, the following process was adopted for the NBSAP development in Somalia:

Principles of the consultation process: In the first series of meetings between FAO and other relevant institutions, the NBSAP team developed clear understanding of the sensitivities of Somali context, where all the zones (South-Central, Puntland and Somaliland) have to be brought on board and all these zones have to be given due attention & opportunity in the consultation process. So the leading principles for consultation were as follows:

- A balanced approach, instead of a top down approach, has to be adopted between the three zones and each one has to be given due importance in the course of consultation and validation, and
- As a post conflict country, with smoldering remnants still existing, the NBSAP team must understand the sensitivity of the situation on one hand, while not compromising on the quality of the consultation process and the related outputs.
- A grafted approach where based on the scientific knowledge derived from empirical evidences (both hands-on and remote sensing-based) and literature review will be integrated with the indigenous knowledge mostly available in tacit form. Based on this grafting of both the streams of the knowledge this NBSAP is developed.
- The process as a whole is led by Federal Government of Somalia, coordinated by the State Minister of Environment/GEF Focal Point together with the Environment Ministries of the Interim Administrations/Zones.

While keeping in view the above mentioned principles the NBSAP process was derived to stay effective in attaining the stipulated objective in a principle-centred manner comprise of the following:

a. Focused Group Meetings

Focussed group meetings were identified as a consultation mechanism for consolidating the NBSAP process/road map. Series of meetings were held with UNDP due to its recent experience of accomplishing the NAPA process. UNEP was consulted for its overall experience of the Enabling Activities such as UNFCCC 2nd National Communication and UNCCD NAP Alignment which they are leading in Somalia. UNEP tossed the idea of Enabling Activity focussed group comprise of FAO, UNDP & UNEP to share the ideas and also join hands in implementing these projects in Somalia. IUCN East Africa Region Office was found a very useful institutions in terms of their biodiversity related experience of Somalia. They shared useful ideas of how to go ahead with the NBSAP process in Somalia and also provided substantial information and literature link on the biodiversity and environment of Somalia. Meetings were held with ICRAF & CIFOR and their knowledge on the transboundary initiatives between Somalia and Ethiopia as well as their land-use planning process was found quite relevant, and they shared their lessons in effectively handling consultations in complicated contexts such as Somalia.

The Somali Government was taken on board right from the beginning and focussed discussions were held with them about implementing NBSAP process. Such meetings included meetings with the sessions with Environment Directorate, Office of the Prime

Minister, Federal Republic of Somalia; Ministry of Environment & Rural Development of Somaliland; and Ministry of Environment, Wildlife and Tourism, Puntland. The meetings were held under the chairpersonship of the senior officials/Ministers and the consultation mechanism and the overall road map were devised based on the collective wisdom. These meetings helped in finalizing the representation in the succeeding meetings and workshops of the NBSAP process.

b. Secondary data and literature review:

The literature review was done in a systematic manner, starting with early twentieth century down to date, with four distinctive periods of colonial era, post-colonial till the outbreak of civil war, the war/conflict period and the stabilization period. Literature is scantly available for a period of the active conflict (post 1991 to 2006), the anomaly of indigenous knowledge also coincides with this period as with the displacement phenomena the whole fabric of the tacit knowledge got disrupted. Important documents such as National Conservation Strategy (NCS) were developed to the stage of inception, however is yet to be produced as full-fledged Somalia's NCS. Nevertheless, the literature gap was filled with structured interviews of key stakeholders and the consultation process.

c. Consultation process

Beside partner organizations based in Nairobi, series of meetings and consultative workshops, together with field visit, were hold with key stakeholders in Mogadishu, Somaliland, Puntland and Interim Administration of South West at Baidoa. The overall process of consultation was coordinated by the Ministry of Environment, Federal Government of Somalia. In all the regions the process was led by the respective Ministries. These events were aimed at soliciting input on one hand and sensitizing/training the stakeholders on the other.

c (i): The LBSAPs as input in the NBSAP formulation process: through series of consultation workshops both in Puntland and Somaliland two Local Biodiversity Strategy and Action Plans were developed for each of these zones. The LBSAPs are subsumed in the strategic framework of the NBSAP and thus the targets & indicators for these regions are derived from these LBSAPs. Beside the targets & indicators formulation, the process in the Puntland and Somaliland happened to be very useful in understanding the drivers of biodiversity degradation and the gap analysis.

c (ii): Finalization of the lead & support sectors to achieve the targets: For the Administrations of Mogadishu, Puntland, South West, and Somaliland, the respective Ministries of Environment led the process of NBSAP. Among the key Ministries, Forestry, Livestock & Range, Fishery and Marine Resources, Agriculture, Water & Energy, Planning & International Cooperation and Ministry of Finance participated in all the consultation and NBSAP finalization. The other stakeholders include community representatives, private sector, NGOs, academia, media and research institutions participated. Nevertheless, during the finalization workshop in Mogadishu, the responsible sectors/ministries were further deliberated and agreed for each target and sub target.

d. Global peer review through NBSAP forum

FAO is aware of the quality standards of NBSAP and therefore sought to be part of the development of contemporary NBSAPs around the world. FAO Somalia, therefore, engaged with NBSAP forum (with experts around the world coordinated by CBD, UNEP and UNDP) to interactively seek the guidance around the world and thus incessantly improving the Somalia's NBSAP. In this regard the lessons of the conflict countries such as Afghanistan, Iraq, South Sudan, D.R. Congo, Mozambique, etc. were focused on one hand as well as the success stories of NBSAP reviewing countries on the other.

e. Remote Sensing and GIS based analysis and base-lining

Among the leading challenges, was to come up with quality analysis of the biodiversity potential and the associated drivers of degradation in a reliable manner and shorter time. This gap was filled through FAO SWALIM project's GIS & Remote Sensing and through systematic analysis of time-series satellite imageries, the status of the Somali eco- regions was assessed. Innovations such as NDVIs were pioneered in the NBSAP process for the first time and this analysis was used to examine the ongoing habitat degradation due to various factors such as deforestation, invasive species, agriculture/urban expansion, sheet/gully erosion, etc. The SWALIM facility was also used for developing series of maps for the NBSAP Somalia.

f. Complementarity drive with other GEF enabling agencies

The GEF has approved multiple Enabling Activity Projects such as NAPA, NAP Alignment, Climate Change 2nd Communication Report, NBSAP, etc. to facilitate the implementation of UNFCCC, UNCCD and CBD in Somalia. UNDP, UNEP and FAO are the respective GEF implementing agencies and all these conventions are interdependent in nature, therefore these projects must exchange and learn from each other. We, FAO, UNDP and UNEP are therefore systematically exchanging to avoid duplication and ensure complementarity in process and final products.

g. Project Task Force (PTF)

FAO internal project steering mechanism, PTF comprise of representative of FAO Somalia Office, FAO Africa Regional Office at Addis Ababa and NBSAP/GEF focal point in FAO headquarters at Rome. PTF assess and guide the NBSAP progress and maintains the quality standard of the NBSAP process & product. PTF also works as the bridge between national, regional and global NBSAP related opportunities and challenges.

h. The National Steering Committee

This forum comprise of 12 members with balanced representation form the Somali government, civil society and international organizations. Although the NSC is the overall decision making body responsible for providing quality guidance and orientation during the NBSAP process, however this also functions as the critical mass for the promotion of

biodiversity cause of Somalia. The NSC maintains the cohesiveness of this NBSAP process with the vision of the Convention on Biological Diversity and other related global agreements. The forum also works as advocacy and awareness raising team to promote the biodiversity concerns of Somalia among key national and global actors. The NSC guides the NBSAP managers to cross-fertilize the biodiversity related knowledge, learn from the best practices of other countries and also disseminate Somalia's lesson learnt and challenges to global forums and relevant countries.

1.3. Structure of the National Biodiversity Strategy and Action Plan

This overall analysis & conclusion is based on the information and its synthesis obtained through the consultation mechanism described in preceding section. This portion of the assessment report outlines the overall situation of Somalia's biodiversity including current status, change patterns & trends, drivers of biodiversity loss, the policy and regulatory framework Institutional & human capacity, and gaps and needs to strengthen biodiversity conservation and sustainable use in the country. This also reflects the value of biodiversity in relation to human well-being.

The first section comprise of introduction that deals with understanding biodiversity, the value of biodiversity, background of the Somalia's National Biodiversity Strategy and Action Plan, overview of the NBSAP development process and structure of this National Biodiversity Strategy and Action Plan.

The second section deals with the status and trends of Somalia's biodiversity and biological resources. This is done with respect to terrestrial and aquatic biodiversity where as the latter comprise of both inland water bodies as well as coastal belt. The marine resources are confined to the coastal belt as the EEZ is not touched in detail.

The third section deals with the drivers of biodiversity loss in the country with a bit of historical perspective. Efforts are made to discuss these drivers along the important milestones of Somalia history such as the colonial period, from independence to collapse of the Siad Barre regime, from the beginning of the civil war till date. This continuum shall go on till 2020 - the deadline for meeting Strategic Plan for Biodiversity 2011-2020 and the associated Aichi targets. Nevertheless, the last leg of this continuum (the strategic planning) will be captured in the final NBSAP and thus not forming part of this document.

The fourth section captures the policy and regulatory framework that govern the government-led biodiversity management in Somalia. This highlights the Federal Republic of Somalia's constitutional & policy framework, along with the specific features as covered by the policy and regulatory framework of the two zones (Somaliland and Puntland). The latter part of this section highlights existing institutional and human capacity for the enactment/implementation of the policy & regulatory provisions.

The fifth section deals with the gaps & needs to strengthen biodiversity conservation and sustainable use in Somalia. A two dimensional framework is used for the gap and needs assessment that include the seven zones (comprise of both aquatic & terrestrial biodiversity)

and the various sectors including forestry, wildlife, agriculture, fisheries (inland & marine), livestock and environment.

The last section deals with the strategic and action plan to cope with the biodiversity related challenges prevails in Somalia. This section comprise of the vision, goal & objective, principles, strategic approaches, main priority areas, the NBSAP targets and corresponding actions against the agreed targets.

Efforts are made to compile the rest of supporting documents and material in the annexes section. So this section contains all the contents that substantiate the analysis and strategic and action plan. Maps and tables are inserted in the relevant sections rather than in the annexes.

1.4. Understanding biodiversity

Although biodiversity is defined in many ways, here we refer to its definition by the CBD and IUCN, as this is in the context of conservation of biodiversity. The Convention on Biological Diversity, 1992, defines biodiversity as, "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes which they are part; this includes diversity within species, between species and of ecosystems".

IUCN defines Biodiversity as the variability among living organisms - animals, plants, their habitats and their genes - from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. This includes diversity within species, between species, and of ecosystems (https://www.iucn.org/iyb/about/bio_glossary/).

The description of biodiversity mostly follows the hierarchical approach of ecosystem, species and genes. Thus the ecosystem diversity refers to the variety of habitats that occurs within a large landscape, ranging from biome (the largest ecological unit) to microhabitat. The species diversity refers to the variety of species within a given geographical area. Whereas, the genetic diversity refers to the variation within single species i.e. between populations of single species and between individuals of single population within the same species.

For enhanced understanding of biodiversity, two sets of glossaries developed by CBD and IUCN – The World Conservation Union are attached as annex I with this document.

1.5. Importance of biodiversity

Somalia lies in the Horn of Africa biodiversity hotspot, one of only two hotspots (the other being Succulent Karoo in SW Africa) that are entirely arid. By virtue of centred at the arid Horn, this biodiversity hotspot is thus centred at Somalia. Despite its arid nature, the hotspot has evolved significant endemism. Although the entire hotspot covers 1.5 million km2, most of the plants actually inhabits in small proportion of the hot spot. The estimated 5,000 vascular

plant species, with over half endemic species, of the hotspot are concentrated in fewer areas and Somalia is among those concentrations of plant endemism. The dominant vegetation type is Acacia – Commiphora bushland, which provided for thousands years frankincense (from Boswellia sacra and B. frereana in Somalia) and myrrh (from the widespread Commiphor myrrha and C. guidottii) to Africa and Middle eastern countries as far as Egypt. In the entire Horn of Africa biodiversity hotspot, Somalia hosts the Yeheb nut (Cordeauxia edulus, VU), an evergreen shrub or small tree with yellow flowers and edible, highly nourishing seeds. Hundreds of new species have been discovered in Somalia alone in the last 20 years, most notable among them the Somali cyclamen (Cyclamen somalense). Known only from a small area in northern Somalia, the plant was a surprising discovery in tropical Africa, as the genus Cyclamen is otherwise found only in the Mediterranean region.

Somalia is famous for bird endemism in the region, as 7 out of 24 endemic bird species are found only in Somalia. Warsangli linnet (Carduelis johannis, EN) is among the most notable endemic bird species in the hotspot and is found only in northern Somalia. The mammalian endemism is relatively low and the most notable endemics are several antelope species, including the beira, dibatag, Speke's gazelle and silver dikdik. Somalia also hosts the famous Somali wild ass and the desert warthog. Among the wild cats, Cheetah was observed during the NBSAP formulation process in Sool region of northern Somalia. The Horn of Africa's highest levels of endemism occur among reptiles, with more than 90 species found nowhere else. The hotspot's six endemic reptile genera include Haackgreerius, a monotypic genus of skink found in Somalia, and Aeluroglena, which is represented by a single species of snake, A. cucullata (Conservation International, 2008).

Despite its reasonable richness the biodiversity in Somalia is threatened by the habitat degradation due to deforestation, over grazing, agriculture expansion, and host of other man-made and natural factors. In order to effectively manage this distinct but threaten biodiversity, Somalia needs concerted efforts to conserve and restore its biodiversity through the road-map which the Somali people elaborated in this NBSAP.

The concept of Ecosystem Goods and Services (EGS) explains the significance of biodiversity in holistic terms. The CBD reflects on the importance of biodiversity through EGS that include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, traditional, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth. EGS such as watershed protection, pest control, nutrient cycling and pollination sustain productivity in agricultural ecosystems, the major food and fiber provider for human on earth. The ecosystem functions serve as life support phenomena and the role of biodiversity related to cultural and religious spheres of life explains how biodiversity influences human life in totality. When impaired or degraded, extreme poverty and hunger are more difficult to address and to overcome. In the long term, the loss of biodiversity that results in a reduction of crop and livestock genetic diversity and in the decreased availability of wild biological resources, threatens food security for the whole population (http://www.cbd.int/development/about/important.shtml).

The importance of biodiversity goes beyond the consumptive aspects such as its use for food, medicine, source of energy, etc. and thus influences all the aspects of human life. While reflecting on the importance of biodiversity, IUCN – The World Conservation Union signifies the nexus of biodiversity with food and energy security. The species and habitat diversity

reduces the vulnerability to natural hazards such as fires and flooding. This diversity has outstanding role in regulating watershed services both at the catchment and command levels.

Life in Somalia has a strong association with the biodiversity – the goods and services emanated from the ecosystem. Commencing from the provisioning services include but not limited to traditional medicines, food (in various forms including agri-based and from the wild both aquatic & terrestrial) and water (generation, cleaning and replenishment). Keeping in view the rather predominant pastoral and agri-based economy of Somalia, EGS significantly provides the regulating services such as flood, drought, pest and disease control. Biodiversity can play a dominant role in off-setting the effects of climate change, examples include restoration of mangroves & corals for artisanal fishery. East African country such as Tanzania & Kenya has greatly benefited from the cultural services of biodiversity including but not limited to spiritual, recreational and cultural aspects. Somalia, with conservation efforts, can substantially benefit from the cultural services of biodiversity. Keeping in view the significance of livestock and free-gazing for Somali economy, the EGS supporting services of nutrient cycling and watershed maintenance becomes as important as circulatory function for human life. Other essential services such as pollination and pest control can't be imagined without ample biodiversity in a given landscape.

The biodiversity of Somalia is an important factor of resilience on the face of various natural and man-made disasters in the country. Examples are the local gene pool of the agriculture crops and livestock that is evolved to absorb natural disasters such as droughts, floods, famine, etc. whereas when the conflicts lead to choking of the supply lines and money based economy for almost two decades, the EGS still supplied the essential survival provisions to the country.

According to the World Bank, livestock is the mainstay of the economy and 60% of the population derives a livelihood from pastoralism-based livestock production. The export of livestock and meat generates 80% of foreign exchange earning (http://www.worldbank.org/en/country/somalia/overview). This pastoralist based livestock derives its existence from the semi-arid ecosystems of the country and thus depends on the biodiversity. Beside the livestock, agriculture sector is the main stay and this sector counts on biodiversity both in terms of its gene-pool to stay resilient on the face of rotational disasters of flood and drought. Agriculture sector on the other hand derives its existence from the ecosystem in-terms of its water & nutrient requirements. The energy requirement of this pre-dominantly rural society is also met by the ecosystem – mainly through charcoal.

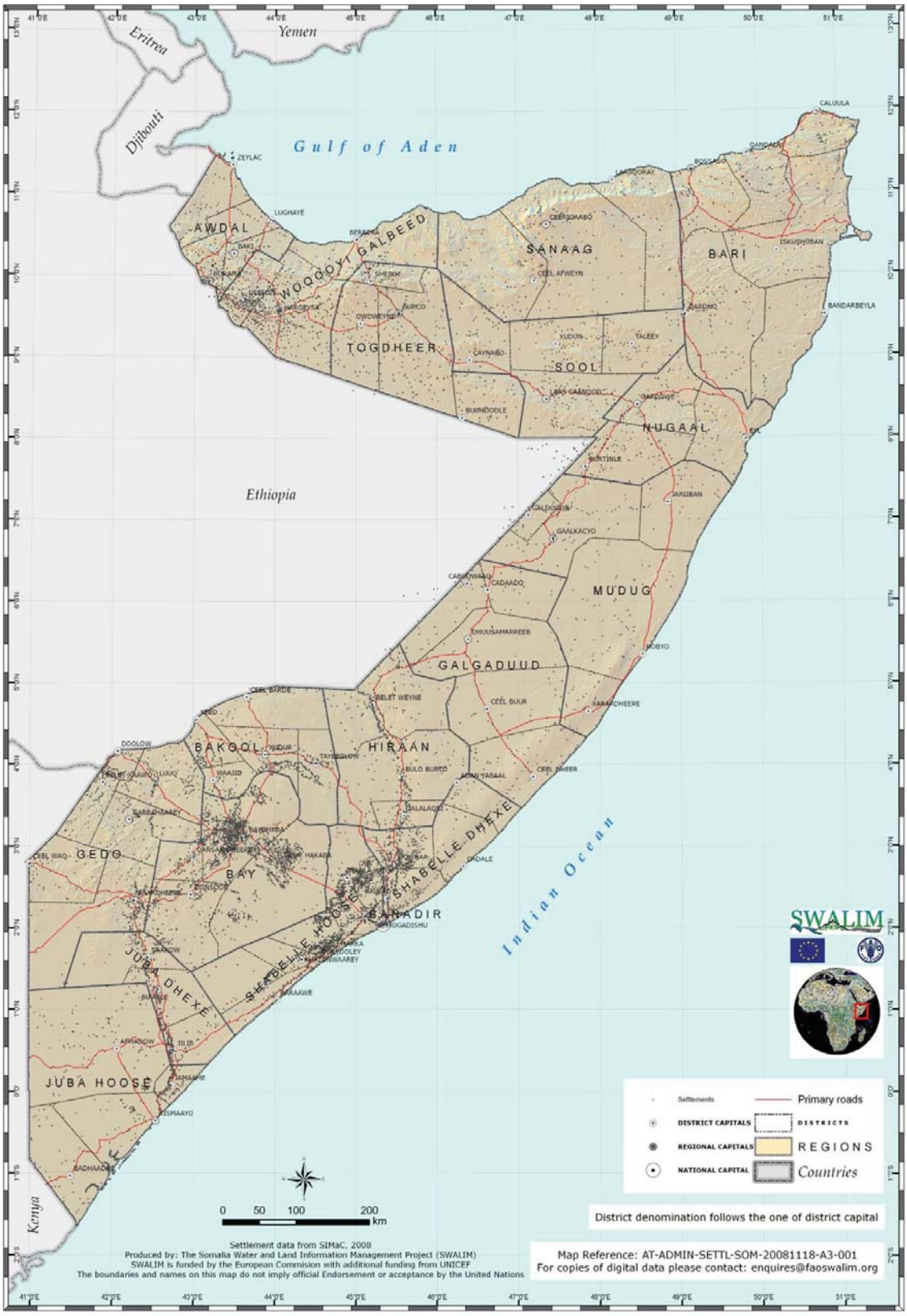
So the nexus of biodiversity with the socio-economic and bio-physical aspects of Somali life can be profoundly observed in all possible details.

1.6. Generic Profile of Somalia

A detailed profile of Somalia is presented in Annex 1 that comprises of series of maps and elaborates description. Somalia in snapshot (refer to Map 1) is described as the eastern most country of Africa, has total area of 637,657 Km2, with longest coastline (3,025 Km) in

continental Africa, and borders Djibouti (58km), Ethiopia (1,600 Km) and Kenya (682 Km). Its land area is 98.4% (627,337 Km2) and water area 1.6% (10,320 Km2). Somalia is characterised by hot, arid and semi-arid climate, with two wet seasons (April to June, and October to November) of approximately 500 mm in the northern highlands, 50-150mm along coast, and 300-500 mm in the southwest. With the global climate change, local climate extremes such as drought, floods, storms, etc. are likely to increase in frequency and ferocity. Topographically the country comprise of highlands in the north with the rest of the country mainly plateaus and plains, coastal plains, Juba and Shebelle the main and only permanent rivers, nevertheless these rivers remain mostly subterranean before entering the Indian ocean. Irrigated agriculture is on around 1% area (6,234 Km2), rain-fed agriculture is around 7% (23,446 Km2), natural vegetation from closed to sparse is 83% (528,400 Km2), bare areas 11.7 % (74,819 Km2), water bodies 1.6% (10,320 Km2) and built areas only 0.1% (650 Km2) (FAO, SWALIM, 2013). Administratively Somalia is divided in 18 regions.

Map 1: Administrative Map of Somalia, including distribution of settlements



Two classes of woody vegetation found with total area 83% but sparse in nature. Area under natural woody vegetation closed to open is 52.7% with 336,612 Km2 and natural woody vegetation sparse or herbaceous is 30% with 191,751 Km2. Nevertheless the dense forest vegetation is confined to the patches in the Golis Mountains in the north and the coastal mosaic forests of the southeast. This however shall not exceed than 3% of the total area of the country. The woody vegetation is dominated by Acacia and Commiphora shrub and woodlands. Extensive areas of riverine forests have been cleared for agriculture, and localized dryland forests are clearance for charcoal. Mist forests in north only true forests, however are under the threat of degradation and deforestation. Increased pressures on forests for charcoal – especially for urban areas – huge demand, also export trade. Somalia is part of the Conservation International Horn of Africa Hotspot which has over 60 endemic genera, over 2,750 endemic species and 24 important bird areas. Some part of the country falls in Somalia-Masai region of plant endemism (Savannah and shrub lands) and a smaller area in the south comprise of the Zanzibar-Inhambane region.

The coastal and marine belt is characterised by fringing reefs and coral patches in Gulf of Aden, with smaller area under mangroves concentrated in three sites along the coast of the Gulf. On Somalia Indian Ocean Coast, fringing and back reef lagoons from the Kenya border to Kismayu are found, with the largest concentration of Mangroves near Kismayu. From Kismayu onwards there are no reefs, because of nutrient rich deep water upwelling, which supply very important offshore fisheries (tuna). Artisanal fishing at low level, not a widespread tradition, but pressure has increased due to displacement of people from inland to coast. Traditional shark and ray fishing is done on Gulf of Aden coast for the salted/dry local (regional) market, however is currently shifted to shark fin export to Asia. Illegal, unregulated and unreported (IUU) fishing by foreign vessels is now a critical issue.

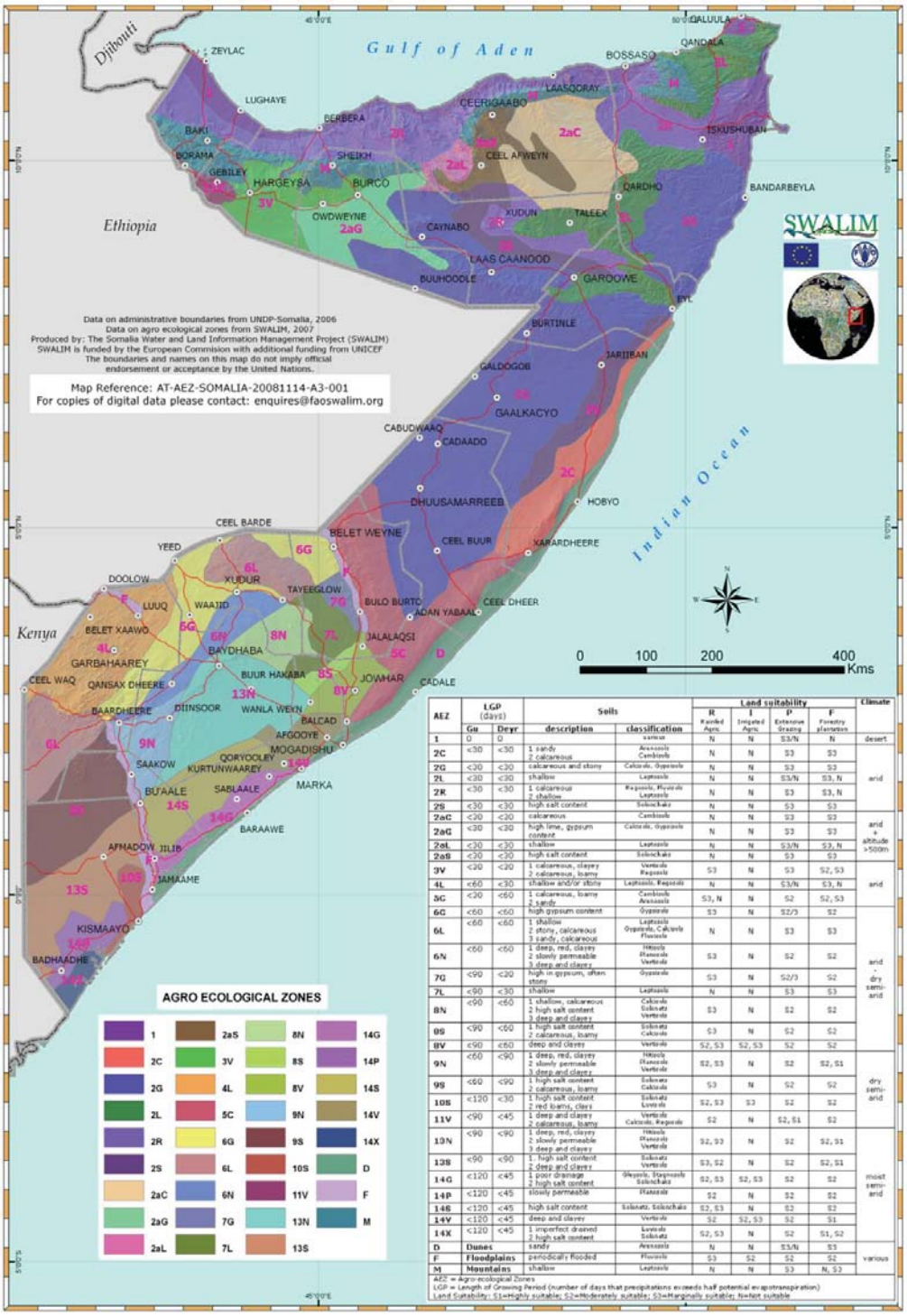
Renewable internal freshwater resources in the country are on the decline (589 m3 in 2005-2009 to 572 m3 in 2010-2014; World Bank, 2014), with skewed distribution regionally – most availability in the Juba and Shebelle basins. Water is the critical resource that ultimately determining livelihoods. Historically water management integrated with livestock management, however currently much unplanned water is supplied for construction that increases pressures on rangelands. Irrigation for agriculture use to account for over 90% of water use.

There are about 16 people per km^2 and an annual growth rate of 2.8%, the population is estimated at 10,496 million (2013; World Bank, 2014), with 52 % female and 47 % male consists of approximately 64% rural and 36% urban. Poverty level is high with nearly 80% of rural population living in poverty (less than $2 per day), while a total 53.4% live in extreme poverty (less than $1 per day). Six major clans with four are mainly pastoralist and two agriculturalists concentrated in Juba and Shebelle areas; there is lack of clarity of land tenure and security of rights to the land. The country is sparsely populated (refer to map 1), however with concentration found in the lower Shebelle, Banadir, Juba areas in the South, whereas around Hargeysa in the North West. This distribution of population provides substantial unoccupied land for the wildlife and natural ecosystems to thrive in this rather arid environment.

Main food crops are sorghum, millet, maize, rice. Main cash crops were bananas, sugar, cotton. Crops are limited mainly to irrigated areas, but an increase in high risk opportunistic rain fed cultivation removes land from livestock based systems. The Government emphasis

is on cultivation based agriculture as main vehicle for livelihood improvement with indigenous crop varieties (sorghum, cowpeas), around 14% of the population are engaged in farming, with average 0.2 ha per person (World Bank, 2012)

Map 2: Agro-ecological Map of Somalia



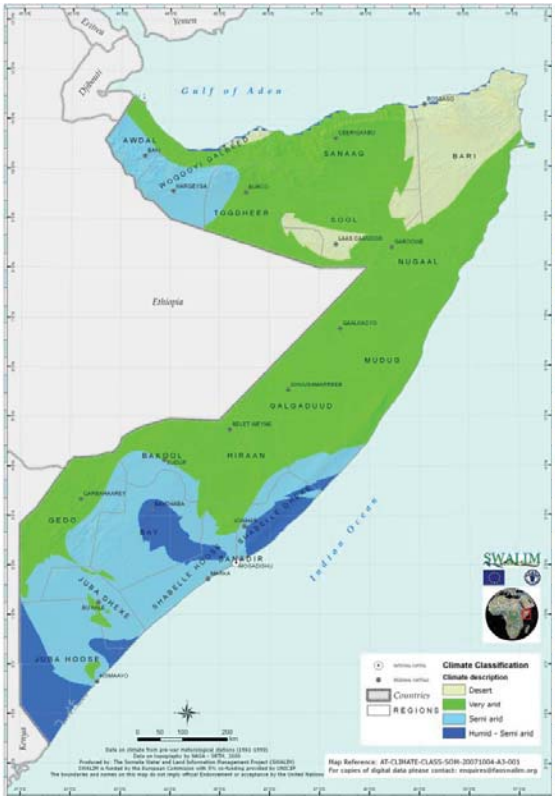
AEZ	LGP (days)		Soils		Land suitability				Climate
	Gu	Deyr	description	classification	R Rainfed Agric.	I Irrigated Agric.	P Extensive Grazing	F Forestry plantation	
1	0	0		various	N	N	S3/N	N	desert
2C	<30	<30	1 sandy 2 calcareous	Arenosols Cambisols	N	N	S3	S3	
2G	<30	<30	calcareous and stony	Calcisols, Gypsisols	N	N	S3	S3	
2L	<30	<30	shallow	Leptosols	N	N	S3/N	S3, N	arid
2R	<30	<30	1 calcareous 2 shallow	Regosols, Fluvisols Leptosols	N	N	S3	S3, N	
2S	<30	<30	high salt content	Solonchaks	N	N	S3	S3	
2aC	<20	<20	calcareous	Cambisols	N	N	S3	S2	
2aG	<30	<30	high lime, gypsum content	Calcisols, Gypsisols	N	N	S3	S3	arid + altitude >500m
2aL	<30	<30	shallow	Leptosols	N	N	S3/N	S3, N	
2aS	<20	<20	high salt content	Solonchaks	N	N	S3	S3	
3V	<20	<20	1 calcareous, clayey 2 calcareous, loamy	Vertisols Regosols	S3	N	S3	S2, S3	
4L	<60	<30	shallow and/or stony	Leptosols, Regosols	N	N	S3/N	S3, N	arid
5C	<20	<60	1 calcareous, loamy 2 sandy	Cambisols Arenosols	S3, N	N	S2	S2, S3	
6G	<60	<60	high gypsum content	Gypsisols	S3	N	S2/3	S2	
6L	<60	<60	1 shallow 2 stony, calcareous 3 sandy, calcareous	Leptosols Gypsisols, Calcisols Fluvisols	N	N	S3	S3	
6N	<60	<60	1 deep, red, clayey 2 slowly permeable 3 deep and clayey	Nitisols Planosols Vertisols	S3	N	S2	S2	arid - dry semi-arid
7G	<90	<20	high in gypsum, often stony	Gypsisols	S3	N	S2/3	S2	
7L	<90	<30	shallow	Leptosols	N	N	S3	S3	
8N	<90	<60	1 shallow, calcareous 2 high salt content 3 deep and clayey	Calcisols Solonetz Calcisols Vertisols	S3	N	S2	S2	
8S	<90	<60	1 high salt content 2 calcareous, loamy	Solonetz Calcisols	S3	N	S2	S2	
8V	<90	<60	deep and clayey	Vertisols	S2, S3	S2, S3	S2	S2	
9N	<60	<90	1 deep, red, clayey 2 slowly permeable 3 deep and clayey	Nitisols Planosols Vertisols	S2, S3	N	S2	S2, S1	
9S	<60	<90	1 high salt content 2 calcareous, loamy	Solonetz Calcisols	S3	N	S2	S2	dry semi-arid
10S	<120	<30	1 high salt content 2 red loams, clays	Solonetz Luvisols	S2, S3	S3	S2	S2	
11V	<90	<45	1 deep and clayey 2 calcareous, loamy	Vertisols Calcisols, Regosols	S2	N	S2, S1	S2	
13N	<90	<90	1 deep, red, clayey 2 slowly permeable 3 deep and clayey	Nitisols Planosols Vertisols	S2, S3	N	S2	S2, S1	
13S	<90	<90	1. high salt content 2 deep and clayey	Solonetz Vertisols	S3, S2	N	S2	S2, S1	
14G	<120	<45	1 poor drainage 2 high salt content	Gleysols, Stagnosols Solonchaks	S2, S3	S2, S3	S2	S2	moist semi-arid
14P	<120	<45	slowly permeable	Planosols	S2	N	S2	S2	
14S	<120	<45	high salt content	Solonetz, Solonchaks	S2, S3	N	S2	S2	
14V	<120	<45	deep and clayey	Vertisols	S2	S2, S3	S2	S1	
14X	<120	<45	1 imperfect drained 2 high salt content	Luvisols Solonetz	S2, S3	N	S2	S1, S2	
D	Dunes		sandy	Arenosols	N	N	S3/N	S3	
F	Floodplains		periodically flooded	Fluvisols	S3	S2	S2	S2	various
M	Mountains		shallow	Leptosols	N	N	S3	N, S3	

AEZ = Agro-ecological Zones
LGP = Length of Growing Period (number of days that precipitations exceeds half potential evapotranspiration)
Land Suitability: S1=Highly suitable; S2=Moderately suitable; S3=Marginally suitable; N=Not suitable

Economics and livelihoods: Livestock the main economic base for the country. Many natural products sold – especially Frankincense (used to be 4th largest foreign currency earner) and for Myrrh Somalia used to be worlds largest producer. Industry at the moment is small scale and mainly service sector, however there is potential for processing and value adding on natural resources and biodiversity products. Huge potential exists for Somali industrial fisheries and new artisanal fisheries development if IUU is adequately addressed. The GNI per capita has grown substantially from $7,303 in 2005 to 10,679 in 2013 (World Bank, 2014). There are large remittances (estimated at between $300-$500 million per annum), while donor support is estimated at about $115 million per annum (2000 figures)

Social Services such as health and education indicators are among the poorest in Africa with high mortality rates (115 deaths per 1000 births) and estimated life expectancy at birth is 47. Infectious diseases, nutritional deficiencies and birth related problems are major health risks, and water borne diseases are on the increase. HIV/AIDS prevalence estimated at 0.4 1% (2013; World Bank). Primary school enrolment is only 20.8% for boys and 16.9% for girls. The overall adult literacy rate is of 25% for males, and 12% for females with the literacy in rural areas being very low. In addition to low education levels, there are been a great brain drain to other countries. Though over half the population, women have insignificant voice. But many civil society groups negotiating for greater equity in decision making, nevertheless, with increased democracy the role of women has substantially improved.

Natural disasters such as Tsunami is best known, however effects of droughts and floods are far more serious. From 1961-2004, 18 floods killed 2,600 people, and 12 droughts killed 19,600 people (IUCN, 2006). With land conversion for irrigated agriculture, deforestation for charcoal and urban expansion, effects of drought is exacerbated. Massive coral bleaching occurred worldwide in 1998 due to climate change and resulted in widespread coral mortality, which is likely to have impacted Southern Somalia and Gulf of Aden coast.



Map 3: Climatic Map of Somalia

Map 4: Bathymetry of Somali Waters

CHAPTER 2: BIODIVERSITY OF SOMALIA

Global biodiversity richest places are concentrated in 34 hotspots of biological diversity. Somalia lies in the Horn of Africa biodiversity hotspot. This arid biome is a renowned source of biological resources. Along with the Succulent Karoo of the south-western Africa, the Horn of Africa is one of only two biodiversity hotspots, that is entirely arid. In the ancient times its fame was associated with frankincense, myrrh and other natural commodities to be taken back North along incense route through the Arabian deserts.

The dominant vegetation type is Acacia-Commiphora vegetation which is a dense bushland of 3 to 5 m tall with scattered emergent trees up to 9 m. Most of the characteristic species of the main canopy are multiple-stemmed bushes or small bushy trees that are branched near the base. Main species *Acacia bussei, Acacia mellifera, Acacia nilotica, Balanites rotundifolia, Boscia coriacea, Boswellia sacra and B. frereana,* Commiphora myrrha, Commiphora africana, etc. This area is home to a number of endemic and threatened antelopes, notably threatened species like the beira (*Dorcatragus megalotis*), the dibatag (*Ammodorcas clarkei*), and Speke's gazelle (*Gazella spekei*). This hotspot also holds more endemic reptiles than any other region in Africa. Other distinctive endemics include the Somali wild ass *(Equus africanus somaliensis*) and the sacred baboon (*Papjo hamadyas*).

According to Conservation International the Horn of Africa is also one of the most degraded hotspots, beside others such as Madagascar lowland forests (Conservation International, 2015), Succulent Karoo (Conservation International, 2014), etc. in the world, with only about 5 percent of its original habitat remaining. Overgrazing is the most destructive force, but charcoal harvesting along with insufficient management efforts by the unstable government control have also been major problems, Conservation International, 2008.

Table 1: Biodiversity comparison among East African Countries

		Mammals		**Birds**		**Plants**			
Country	Area Km^2	Endemic	Total	Endemic	Total	Endemic	Total	% of land transformed from natural habitat to other land-uses	Response to degradation in terms of % of land protected
Burundi	27830	0	107	0	451	not known	2500	37	5
Djibouti	23200	0	61	1	126	6	826	1	1
Eritrea	117600	0	112	0	319	not known	not known	19	4
Ethiopia	1104300	31	277	28	626	1000	6603	39	5
Kenya	580370	23	359	9	844	265	6506	13	6
Rwanda	26340	0	151	0	513	26	2288	52	8
Somalia	637660	12	171	11	422	500	3028	6	0
Uganda	241040	6	345	3	830	not known	4900	36	7
All countries	2758340	72		52		1797		24	4

Source: UNEP, 2006. Africa Environment Outlook 2

Surrounded by the Horn of Africa zone, Somalia southeast has an important extension of the Zanzibar- Inhambane forest (described in section 2.1.5) that forms the coastal mosaic belt with unique biodiversity extending from the South. Within this context, the endemisms of Somalia's biodiversity are given in the following table:

Table 2: Endemisms of Somalia's biodiversity (http://www.cepf.net/resources/hotspots/africa/Pages/Horn-of-Africa.aspx)

Taxonomic group	**Species present in Somalia**	**Endemic Species**	**Percentage Endemism**
Plants	3165*	800	25
Mammals	220	20	9.1
Birds	697**	24	3.4
Reptiles	285	93	32.6
Amphibians	30	6	20
Freshwater Fishes	100	10	10

* Flora of Somalia, vol. 3

** Birdlife international report the number of bird species as 566 with 9 endemic (http://www.birdlife.org/datazone/country/somalia).

The Data Gap: During the course of consultations and literature review carried out for the preparation of this NBSAP, the absence of data as well as mismatching figures from different sources were repeatedly confronted. For example various sources present different figures for birds, such as the Birdlife International mention of a total figure of 566 with 9 endemic birds and 17 as globally threatened birds. The other sources mentioned above give different count. The major deviation was observed in the number of elephants with a high figure of 6000 brought down to 70 in southern Somalia.

The status and trends of Somalia's biodiversity and biological resources

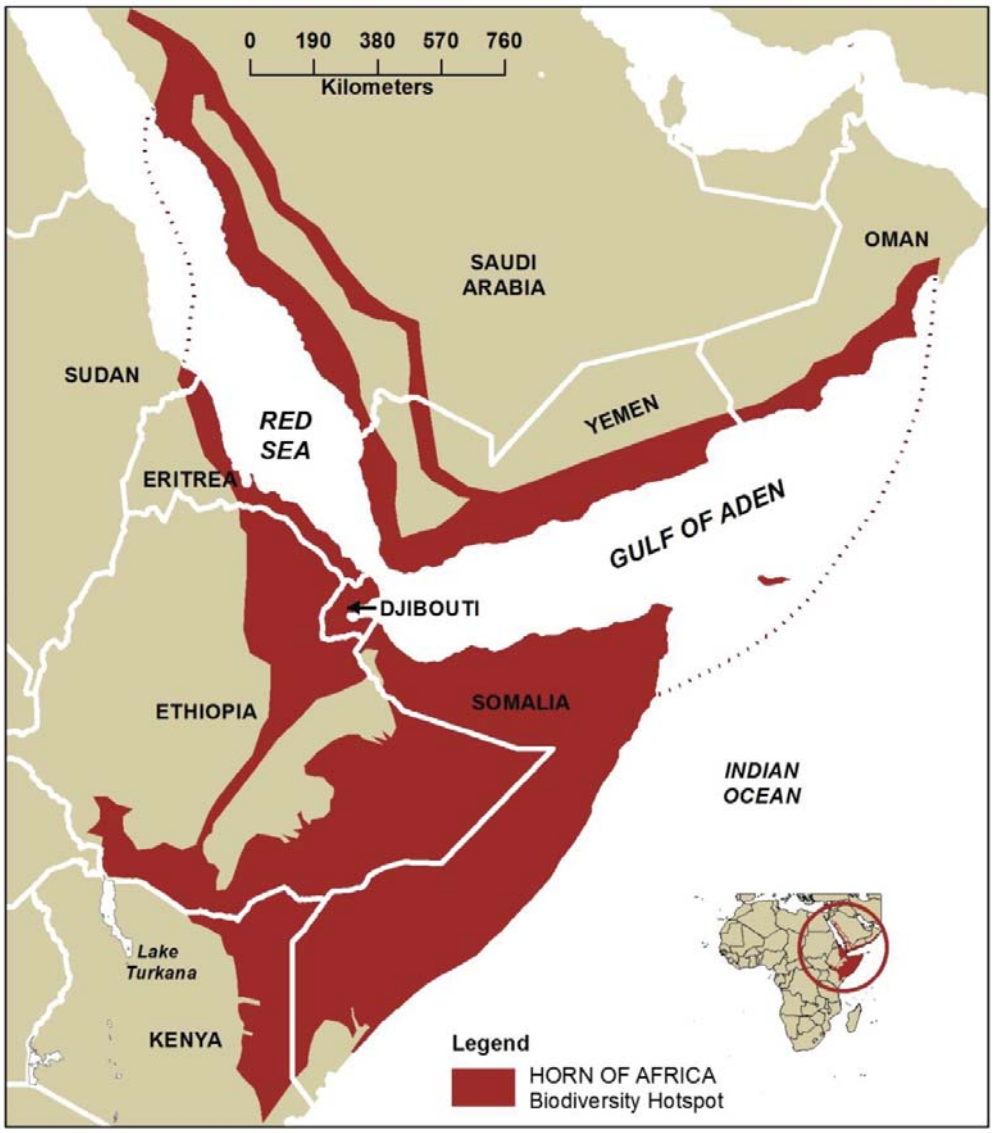
Arid and semi-arid conditions prevail in Somalia since ages. This "stability" helped biodiversity evolving in harmony for and adapt to this apparently less-hospitable semi-desert environment. Beside its harsh climate and xeric vegetation, the country is still home to high level of endemism that is rooted in its remarkable location where the two global zones of endemism (Horn of Africa Biodiversity Hotspot and Coastal Forests of Eastern Africa Hotspot, refer to Map 5) meet each other. Early colonial officials (such as R.E Drake Brockman, 1910) reported on the astonishing abundance and diversity of wildlife. Somalia at the time had a reputation of being one of the best wildlife havens in Africa. Till 1980s the country was reported to host around 3,023 species of higher plants and was thus considered as a centre of floral endemism (White, 1983).

Even as recently as the mid-1980s, the status of wildlife in Somalia was reported as being sparse and scattered due to a combination of livestock grazing and illegal hunting (IUCN/UNEP, 1986). As with the fauna depleted by poaching and land degradation, nevertheless, large concentrations of livestock together with the felling of trees for charcoal and firewood adversely affected species composition, ground cover and the structure of vegetation. Grazing pressure from livestock and soil erosion are now a serious problem and, together with periodic droughts, have had a devastating effect on the vegetation and soils.

Somalia has the most extensive and least spoiled coastline in Africa. Important coral reefs, seabird colonies and turtle nesting beaches are currently unprotected. At the end of the last century there were believed to be large dugong populations and extensive sea grass beds in near shore waters. Important seabird nesting sites include Mait Island, Zeila Island, and islets off Mogadishu. According to IUCN – The World Conservation Union, the area has distinct and abundant biodiversity, including 87 species of corals, 140 species of reef fish and the cetaceans includes delphinids such as common dolphin (*Delphinus delphis*), Spinner Dolphin (*Stenella longirostris)*, Spotted Dolphin (*S*. *attenuate*), etc. The birds' diversity and presence is also of peculiar nature. Together with this features, the presence of mangroves and sea weeds make these areas suitable for managing as Marine Protected Areas (IUCN – 1999). However the lack of adequate management on one hand and excessive and illegal use of the marine and

coastal resources has impacted the aquatic biodiversity which still has the potential to replenish, notwithstanding requires immediate and appropriate measures.

Map 5: Horn of Africa Biodiversity Hotspot, with Coastal Forests of Eastern Africa Hotspot



The overall status of threatened species of Somalia as per the IUCN red-list is follows:

Table 3: Threatened species in Somalia

Mammals	Birds	Reptiles*	Amphibians	Fishes*	Mollusks*	Other Invertebrates*	Plants*	Total*
15	17	4	0	26	2	60	42	166

Table 4: Overall status of threat plants and animals in Somalia

Somalia	EX	EW	Sub total	CR	EN	VU	Sub total	NT	LR/cd	DD	LC	Total
Animals	0	0	**0**	6	20	98	**124**	148	0	151	1,472	**1,895**
Plants	0	0	**0**	3	16	23	**42**	44	0	5	188	**279**

(source: www.iucnredlist.org)

IUCN Red List Categories: EX - Extinct, EW - Extinct in the Wild, CR - Critically Endangered, EN - Endangered, VU - Vulnerable, LR/cd - Lower Risk/conservation dependent, NT - Near Threatened (includes LR/nt - Lower Risk/near threatened), DD - Data Deficient, LC - Least Concern (includes LR/lc - Lower Risk, least concern).

The detailed examination of Somalia's biodiversity is provided (done with the help of literature review as well extensive consultation with stakeholders, as detailed in Annex II) in the context of terrestrial and aquatic biodiversity as follows:

2.1. Terrestrial Biodiversity of Somalia

Rather than administrative or political boundaries, biodiversity follows the ecological regional boundaries therefore the terrestrial biodiversity of Somalia is examined in the context of its five eco-regions that the country shares with its neighbours on all three sides. The terrestrial biodiversity is transboundary in nature as are the ecoregions that the country possesses. The five ecoregions as agreed by multiple sources (such as White, 1983; A.D. Leslie, 1990 and WWF, 2014) are adopted for our terrestrial biodiversity analysis. Mangrove vegetation, is however, dealt in the section of aquatic biodiversity. Thus the terrestrial biodiversity is elaborated in the ecoregions mainly determined by the vegetation type, however explaining the fauna and flora both (delineated in map 6) with the following five eco-regions:

2.1.1. Acacia – Commiphora bushland
2.1.2. *Juniperus excelsa* forest in the mountainous belt of Golis
2.1.3 Evergreen and semi – evergreen bushland
2.1.4 Semi – desert grassland, bushed grassland and bushland.
  a. Hobyo grasslands and shrublands
  b. The Ethiopian xeric grasslands and shrublands
2.1.5 Zanzibar – Inhambane forest

2.1.1 Acacia – Commiphora bushland

Occupying largest part of Somalia, with very variable in structure and species, this lies within the Somali-Masai regional center of endemism, and Somali-Masai semi-desert grassland and shrubland. The predominant trees species in the ecoregion belong to the *Acacia* and *Commiphora* genera. In lower elevation, with less rainfall, the vegetation becomes semi-desert scrubland. Forest vegetation once abundant, is now largely been destroyed by human activity.

The ecoregion represents ancient and stable habitat and therefore houses a high number of arid-adapted species, many of them endemic.

Map 6: Eco-regions of Somalia

Representative Biodiversity of the eco-region:

Although 1,250 plants recorded from the region, however the extent of endemism is not known. Lying in the Horn of Africa, the region is notable for endemism of mammals in general and antelopes in particular. The examples are Dibatag (*Ammodorcas clarkei*, VU) found only in Somalia, Beira (*Dorcatragus megalotis*, VU), Hirola (*Damaliscus hunteri*, CR) and Speke's gazelle (*Gazella spekei*, VU). There are also a number of smaller mammals including four *Gerbillus* species, one *Microdillus* species, one white-toothed shrew (*Crocidura greenwoodi*, VU), and the walo (*Ammodillus imbellis*, VU), a gerbil known only from Somalia. The Somali warthog (*Phacochoerus aethiopicus delamerei*, VU) is also near endemic to this ecoregion.

Widely distributed but threatened ungulate species include dorcas gazelle (*Gazella dorcas*, VU) and Soemmering's gazelle (*Gazella soemmeringi*, VU). African wild ass (*Equus africanus somaliensis*, CR) inhabits this region, nevertheless the extent is not confirmed. The beisa oryx (*Oryx gazella beisa*) was formerly widespread throughout Somalia, however with excessive hunting had exterminated this antelope over much of its Somalian range by the 1980s but it is still distributed over a wide range in Ethiopia. The gerenuk (*Litocranius walleri*) also occurs and has a wider distribution, extending further south into Kenya. The greater and lesser kudu (*Tragelaphus strepsiceros*, Timberbis) once abundant in Somalia, now can be found in areas of Acacia-Commiphora woodland in the Ethiopian section of this ecoregion.

Elephants (Loxodonta africana, EN) and buffalo (*Syncerus caffer*) were previously widespread in the wetter portions of this ecoregion Lion (*Panthera leo*, VU), leopard (*Pathera pardus*, EN), cheetah (Acinonyx *jubatus*, VU), and striped and spotted hyaenas (*Hyaena hyaena* and *Crocuta crocuta*) are the main large carnivores in this ecoregion, however the extent can't be confirmed in Somalia. Including the endangered wild dog (*Lycaon pictus*) most of these species can be found in the Ethiopian section of this ecoregion.

Cub of Cheetah (*Acinonyx jubatus*) in Garowe (Courtesy: von Klaus Lorenz)

Most of the endemic species of animal and plant are associated with dry habitats, but the riverine habitats along the Juba and Wabi Shebele support two strictly endemic birds, the Degodi lark (*Mirafra degodiensis*, VU) and the Bulo Burti bush-shrike (*Laniarius liberatus*, CR), qualifying as an Endemic Bird Area. The Abyssinian yellow-rumped seedeater (*Serinus xanthopygius*), the short-billed crombec (*Sylvietta philippae*, DD), and Sidamo bushlark (*Heteromirafra sidamoensis*, VU) are all restricted to this ecoregion as well, while the sombre chat (*Cercomela dubia*, DD), white-winged collared-dove (*Streptopelia reichenowi*), Salvadori's weaver (*Ploceus dicrocephalus*), and the scaly babbler (*Turdoides squamulatus*) are considered near-endemic.

Current Status of biodiversity:

The habitats of the ecoregion are mainly dry woodlands and scrub, with a gradation to grasslands and deserts in the driest places. Most of these areas remain unfragmented and intact, as the human population is low and agriculture is concentrated along watercourses and close to the coastline. This ecoregion has been severely affected by political instability and war over the past few decades. Large mammal populations have been depleted throughout the ecoregion, especially in Somalia where there has been no federal government since 1991. Since then the conservation activities in the eco-region, like the other parts of the country, are almost dormant. For example Beisa oryx (*Oryx gazel/abeisa*), formerly widespread, but now reduced by poaching to a mere 1000 – 1200. The Alifuuto (Arbowerow) Nature Reserve, is found here, although there is no systematic information about the status of this site, the anecdotal information reveals a far from satisfactory status of this reserve.

Flagship species such as the elephant (*Loxodonta africana*), black rhino (*Diceros bicornis*), lion (*Panthera leo*) and Swayne's hartebeest (*Alceaphus swaynei*) is believed to be locally extinct, while the wild ass (*Equus asinus somalicus*), is also reduced to few dozen (Sommerlatte & Umar, 2000). The cheetah (*Acinonyx jubatus*), giraffe (*Giraffa camelopardalis*), Grevy's zebra (*Equus grevy*) and three rare species of gerbil are also reduced to critical status. The Abyssinian genet (*Genetta abyssinica*) might occur in the north, and the rare golden rumped elephant shrew (*Rhynchocyon chrysopygus*) might occur in coastal forest in the extreme south, but their status and conservation requirements are not known (IUCN, 1990).

A bustard from North-West Somalia (Courtesy: Ugo Leonardi, FAO, SWALIM)

Somalia is the most important country for bustards in the northern hemisphere, with restricted populations of Heuglin's bustard (*Neotis heuglini*), Hartlaub's bustard (*Eupodotis hartaubii*), and the little brown bustard (*E. humilis*). Larger species, namely the Arabian bustard (*Ardeotis arabs*) and Denham's bustard (*Neotis denham*), a declining species, are heavily hunted (IUCN, 1990).

Nature of Threats

Habitat degradation: Habitats have become degraded in many places through grazing by livestock and fuel wood collection, particularly close to villages and towns. Throughout this ecoregion, riverine vegetation is often extremely degraded. Some economically important species, such as the Yeheb nut (*Cordeauxia edulis*) may be declining due to overgrazing.

Climate change: There has been a long history of human habitation in the Horn of Africa. However, droughts dramatically decrease livestock numbers and allow native vegetation to recover. Native plants and animals are also adversely affected by drought, but not as severely as livestock (Kingdon, 1989).

Poaching: Following decades of political instability and warfare, status of most endemic/near-endemic large mammals has declined dramatically and their ranges are fragmented due to poaching in the eco-region. Conflict with farmers is a serious threat to the dwindling elephant population.

Essential conservation measures:

Improved management of existing/new protected areas and better law enforcement are the main conservation requirements. With the return of the stable government to Somalia, it will be essential to support the government to re-establish protected areas and safeguard the remaining populations of large mammals. Regional conservation planning should be encouraged but will obviously be difficult to achieve.

2.1.2. *Juniperus excelsa* forest in the mountainous belt of Golis

Mainly falls in the mountainous belt of Golis, this ecoregion stretches along the coast of Somalia, through both Somaliland and Puntland. It stretches from the Shimbiris Mountain (2,416 m – the highest point in Somalia) east of Hargeysa to Raas Caseyr, covering the tip of the Horn of Africa and continuing till the Somali coastal plain. The mean rainfall varies from 200 mm in low-lying areas annually to far greater at higher elevations, such as slopes near Maydh receives 700 mm annual, the highest for Somalia.

Representative Biodiversity of the eco-region:

Due to the political instability in the country, this area remained less accessible for decades and therefore the status of biodiversity of the ecoregion is not updated. Much of the information that does exist is old and cannot be considered reliable. Nevertheless, it is recorded that there are over ten species of endemic plants represented here; for example, the monotypic genus *Renschia,* four endemic species of *Helianthemum and* one endemic species of *Thamnosma*. Both WWF and IUCN (Friis and Lovett, 1996) regard this as a center of endemism for plants, although the high mountain region is rich in endemism, however this is also found at lower elevations.

Among the mammals, the rare antelopes beira (*Dorcatragus megalotis,* VU) and Speke's gazelle (*Gazella spekei*, VU), the Salt's dikdik (*Madoqua saltiana*) and Soemmerring's gazelle (*Gazella soemmerringii*, VU) are also found here. These are threatened and suffer from over-hunting and from grazing competition with livestock.The near-endemics small mammal species are *Atelerix sclateri*, *Acomys louisae* and *Elephantulus revoili*. The snakes *Spalerosophis josephscorteccii* and *Leptotyphlops reticulatus* and the lizard *Pseuderemias savagei* are among strict endemic reptiles, along with two other reptiles *(*Somali Snake (*Aeluroglena cucullata*) and *Haackgreerius miopus)* near-endemic to the ecoregion.

The Somali pigeon (*Columba oliviae*, DD), the Somali thrush (*Turdus ludoviciae*, CR), and the Warsangli linnet (*Carduelis johannis*, EN) are among the endemic birds to this area. The severely threatened Somali thrush and Warsangli linnet are confined to juniper forests at higher elevations.

Current Status of biodiversity:

There is no accurate information about the habitat within this ecoregion mainly due to the continued political difficulties in the country. It is known that these forests are degraded and gone through deforestation. At lesser habitable lower elevations the forest is better as at the lower reaches the habitat tends to be semi-deserts in many areas. Within the ecoregion few forest reserves exists, as the only protected areas, for example the Daloh Forest Reserve – area of montane *Juniperus* forest. Some other patches are considered to be on the higher elevation areas of the Surud-Ad-Al Madu and Mosca highlands. These areas have not been adequately managed for quite some time since the outbreak of civil unrest in the country.

Nature of Threats

The consultation workshops both in Puntland and Somaliland revealed that the major threats to the ecoregion is the cutting of *Juniperus* trees for timber & fuel wood, intensive grazing by goats and other livestock. Poaching of larger mammals is also a chronic problem. Due to the prolonged political instability in the ecoregion additional threats arise besides the chronic poaching led by the breakdown of management authorities. Notwithstanding the current initiatives set up to conserve forests and wildlife, these are not well documented.

Essential conservation measures:

The baseline assessment of this forest region's biodiversity is essential for improved management. Various alternatives to cutting the tree and degrading the environment needs to

be worked. The assessment should also include exploring the possibility for REDD and efforts needs to focus on REDD readiness for the country in general and this zone in particular. Other possible road map for the region could be preparing for UNESCO's Man & Biosphere Reserves (MAB) initiative. The overall objectives of these interventions should be divert pressure from the forest stock and associated biodiversity and provide the inhabitants with rather better & environment friendly alternatives. The energy and fodder requirements should be fulfilled through other means such as alternative/renewable energy (solar, wind, micro-hydel, etc.) and rotation grazing, etc. respectively.

2.1.3 Evergreen and semi – evergreen bushland

This zone is an ecotone between the Acacia Commiphora bushland and *Juniperus* excels forest and is found in areas above 1500 meters and with rainfall exceeding 450 mm, this zone can also be found in gullies in lower altitude. The dominant species in this vegetation type is *Buxus hilderbrandtii*, *Aloe eminens*, *Cussonia holstii*, *Dodonea viscosa*, *Euphorbia grandis*, *Pistacea aesthiopica*, etc. At the higher elevation the species composition changes and fuses with the *Juniper* forest.

Representative Biodiversity of the eco-region:

As an ecotone of the two dominant eco-regions (Acacia Commiphora bushland and *Juniperus excelsa*) the biodiversity in general is transitional in nature and the overall context is dealt in the two regions.

2.1.4 Semi – desert grassland, bushed grassland and bushland

As this ecoregion follow the Somalia-Masai semi-desert grassland and shrubland vegetation zone with two distinct blends of, a. Hobyo grasslands and shrublands - narrow coastal strip along the coast of Indian Ocean stretching from the horn down to south of Mogadishu and b. northern coast of Somalia (*Somaliland*) and b. The Ethiopian xeric grasslands and shrublands, stretches from the horn of Africa to the border with Djibouti. The details of both the zones are described as follows:

a. Hobyo grasslands and shrublands

Stretching down the southeast coast from the Horn of Africa, the Hobyo Grassland and Shrubland ecoregion consists of white and orange sand dunes dominated by perennial dune grasslands and sedges. The unpredictable rainfall and inaccessibility of the area have prevented thorough exploration, however around 1000 vascular plant species are likely to be found here, with high species endemism. This region also supports six endemic species of birds, mammals and reptiles. However, little is known of the current status of this coastal ecoregion, due to political instability.

Representative Biodiversity of the eco-region:

The zone is the extended part of the Somali-Masai region of endemism with principle shrubby species as *Aerva javanica, Indigofera sparteola, Jatropha pelargoniifolia (glandulosa), Farsetia longisiliqua, etc*. *Buxus hildebrantii, Maytenus undata*, *Vepris eugeniifolia* are found

here in the mesic limestone gorges. *Dirachma somalensis*, one of two endangered species in the Dirachmaceae family, is its richest known locality. Other endemics include *Amphiasma gracilicaulis* and *Lochia parvibracta*. Plants have adapted to the climate in several ways, succulents are common and the *Puntia genus* is found in this ecoregion. Many of the endemics are cushion plants shaped by the sand-laden winds.

Two endemic mammals, the silver dik-dik (*Madoqua piacentinii*, VU) and the Somali golden mole (*Chlorotalpa tytonis*, CR), are also found here. Among the rather rare larger mammals include dibatag (*Ammodorcas clarkei*, VU), Soemmerrings gazelle (*Gazella soemmerringii*, VU), Salts dikdik (*Madoqua saltiana*) and Speke's gazelle (*Gazella spekei*, VU). These mammals have rather restricted range in the Horn of Africa. Among the endemic reptiles, *Haackgreerius miopus* and *Latastia cherchii* are found here; five other species of reptile that are nearly endemic are also found here.

Ash's lark (*Mirafra ashi*, EN) and the Obbia lark (*Spizocorys obbiensis*, DD) are the strictly endemic birds and are restricted to the coastal fixed-dune grasslands. The ecoregion is an Endemic Bird Area, of the Central Somali Coast. Although the level of endemism is quite high, the overall number of species in the ecoregion is relatively low.

Current Status of biodiversity:

Due to the long-standing and continued political instability in Somalia, it can't be established that how much of the habitat remains intact and how much is fragmented in this ecoregion. The only official protected area is Lag Badana Bush-Bush National Park, but this is undoubtedly no longer functional.

Nature of Threats

Up-to-date information on the nature and extent of threats is not available. However this is known that the local people use the scrub and grasslands of the ecoregion for grazing and fuelwood collection. Due to displacement, as a result of political instability and clan warfare, of the people from the urban areas to the coastal belt has impacted this habitat. As a result the belt is subject to over use, and conservation measures are void at the moment.

b. The Ethiopian xeric grasslands and shrublands

This arid to semi-desert ecoregion bordering the coast in the north and Golis Mountains in the south in Northern Somalia (Somaliland), lies mainly between sea level and 800 meters (m) elevation. With many hills and massifs, range up to 1300 m, the region is extremely active tectonically, experiencing earthquakes and volcanoes. The climate is very hot and dry and rainfall is very low and becomes least near the coast. Soils developed over the lava deposits are mainly lithosols, while regosols are predominant on the Quaternary and pre-Cretaceous basinal deposits. There are very few permanent watercourses.

Representative Biodiversity of the eco-region:

Due to political instability the current biodiversity status of the eco-region is not accurately assessed. However the following are known to exist in the region:

Acacia mellifera and *Rhigozum somalense* dominate the basaltic lava fields while scattered *Acacia tortilis*, *A*. *nubica*, and *Balanites aegyptiaca* can be found in the sandy plains. Stands of *Hyphaene thebaica* occur in depressions and along wadis.

Among mammals, African wild ass (*Equus africanus somalicus*, CR) and Beira antelope (*Dorcatragus megalotis*, VU) occur in the region, Dorcas gazelles (*Gazella dorcas*,VU), Soemmerring's gazelles (*Gazella soemmerringii*, VU), Salt's dikdik (*Madoqua saltiana*), and gerenuks (*Litocranius walleri*) all still occur. Beisa oryx (*Oryx beisa*) persist, but have been greatly reduced by hunting pressure. Among small mammals gerbil *Gerbillus acticola* is found here.

Among birds endemism is generally low, with strict endemics limited to Archer's lark (*Heteromirafra archeri*, VU). The reptilian fauna is relatively rich, but there are very few amphibians, two geckos, Arnold's leaf-toed gecko (*Hemidactylus arnoldi*) and a subspecies of the northern sand gecko (*Tropiocolotes tripolitanus somalicus*) are found here. Among the plants, dragon ombet (*Dracaena ombet*, EN) and Bankoualé palm (*Livistona carinensis*,VU) are notable.

Current Status of biodiversity:

With very low human population density (less than one person per km^2 in some parts) the dominant ethnic group is pastoralist Somali clan, the Issas. But animal grazing is rampant and the conservation status of this ecoregion is not good, with few protected areas and lack of enforcement in existing ones. Although large blocks of "natural" habitat remain, much has been degraded through over-exploitation. Among the major threats are overgrazing, tree cutting for fuel & timber, clearance for agriculture along the watercourses is also a major problem. Most large mammal species have been severely reduced through hunting. Some species, such as giraffes (*Giraffa camelopardis*), are believed to be locally extinct.

2.1.5 Northern Zanzibar-Inhambane Coastal Forest Mosaic ecoregion

This is an extension of the northernmost ecoregion of the eastern and southern African coastal forest belt in Somalia and this northern margin forms an isolated forest outlier along the Juba Valley. This eco-region has great diversity of habitats contributes to the unique richness of the eco-region with high endemism among the plants in particular. Natural habitats, especially small forest patches, are highly threatened primarily from conversion to agricultural land, although various forms of extraction also pose significant threats. The region is characterised by the extreme variability in rainfall from year to year, with dry seasons that sometimes extend into droughts and rainy seasons that can cause severe flooding.

This ecoregion forms a part of White's (1983) Zanzibar-Inhambane regional mosaic and due to the exceptional level of plant endemism, this regional mosaic has recently been reclassified as the Swahili regional centre of endemism. Here the complex integration of moist and drier forests exists with features such as fire-climax savannah woodlands, seasonal and permanent swamps, and littoral habitat is emphasized.

Representative Biodiversity of the eco-region:

Although the exact extent of the biodiversity in Somali part cant be assessed at the moment mainly due to the civil unrest in the area, nevertheless whole ecoregion (together with Kenya & Tanzania) supports a large number of endemic species, at a density among the highest in the world. The forest diversity in the overall region is very high and around 3,000 species in 750 genera are confined to forest habitats with trees account for the greatest proportion. Some of the more abundant trees are *Afzelia quanzensis*, *Scorodophloeus fischeri*, *Dialium holtzii*, *Hymenaea verrucosa*, *Millettia struhlmanni*, *Berlinia orientalis*, *Cynometra* spp., and *Xylia africana*. Lianas are also common, as are shrubs, herbs, grasses, sedges, ferns, and epiphytes.

The endemism is not concentrated only in the forest areas but also found in drier bushland and grassland habitats. Biologically, the drier forest types within this ecoregion are the most distinctive, with mono-specific genera and numerous endemic species, especially within the plants. An outstanding feature of the flora is the close relationship with certain forests in West Africa.

Among the endemic birds Yellow flycatcher (*Erythrocercus holochlorus),* Sokoke Pipit *(*Anthus sokokensis*)* (EN), Clarke's weaver *(Ploceus golandi)* (EN), and Mombasa Woodpecker (*Campethera mombassica*) are believed to be found here. Sokoke Scops Owl (*Otus ireneae*, EN), Fischer's turaco (*Tauraco fischeri*), plain-backed sunbird (*Anthreptus pallidigaster*, EN), spotted ground-thrush (*Zoothera guttata*, EN), east coast akalat (*Sheppardia gunningi*, VU) and the southern-banded snake eagle (*Circaetus fasciolatus*) are also supposed to be found here.

With pronounced endemism, around 158 species of mammals are found here, among which the most diverse mammal groups are bats (58 species), rodents (27+ species), carnivores (19 species), primates (14 species), and shrews (14 species). This high rate of species richness is due to the mixing of habitats in the ecoregion, and hence the large number of savannah, wetland and forest species which can be found in close proximity. Of the 94 reptile species occurring in the ecoregion, 47 are forest-dependent and 34 are strictly endemic.

Millipedes, molluscs, and butterflies also exhibit high diversity and moderate levels of endemism. There are 1,200 species of molluscs in the region, 125 of which are confined to forests. Of the regional total, 207 species are endemic, of which 86 species confined to forests. Butterflies are represented by 400 forest species, of which 75 are endemic.

A young Martial Eagle found in Toghdeer, North-West Somalia (courtesy: Ugo Leonardi, FAO SWALIM)

Current Status of biodiversity:

The forest habitat in this ecoregion is highly fragmented, and the habitat is facing multiple threats including conversion to agriculture fields & habitation, quarries, poaching, deforestation for charcoal, land degradation, lack of alternatives for the locals, etc. Deforestation for charcoal is still going on and in 2013; tree loss estimation was calculated for 745 km2 area near Jilib where a tree loss of 124,060 trees, equal to 4.90% of the tree cover was found, F. Remobld et.al 2014. Representative mammal species such as the hirola *(Beatragus hunteri),* is now reduced to only to the Lag – Dere region along the Kenyan border, just due to over hunting elsewhere. Elephants, belonging to what may be a distinct small subspecies Loxodonta africana orleansi, still survive in the south, but poaching is extensive and their numbers is estimated as low as 70, Elephant Database 2013. The black

rhinoceros has been poached almost to extinction, although it might survive in the Lag Badana area at the southernmost tip of the country (UNEP, 2006).

In other parts of the ecoregion there are number of conservation projects are going on, nevertheless on the contrary in Somali area of the ecoregion, there is no active conservation interventions taking place. The proposed National Parks of Lag Badana and Bushbush are essential for the conservation of this unique but extremely threatened biodiversity hotspot. The better conservation in the bordering countries in this zone is leading to the exodus of wildlife from the Somali area of the ecoregion.

2.2 Aquatic biodiversity of Somalia

The aquatic biodiversity of Somalia is looked in the context of coastal/marine environment and inland/onshore wetlands respectively. The very long coast with marine and coastal wetlands, inland wetlands, (lakes/reservoirs, rivers, inland flood plains, swamps) forms Somalia's major ecological system in which biological resources thrive. Like the terrestrial biodiversity resources, exact and ample information is not easily available. Nevertheless on the basis of partial available information the aquatic biodiversity is elaborated in two sections covering coastal and terrestrial wetlands as follows:

2.2.1 Coastal biodiversity of Somalia

Somalia has 3300 Km^2 coastline (UNEP, 2005), longest in mainland Africa, that offers extended range of opportunities and challenges related to biodiversity conservation and sustainable use of its products. Although Illegal, Unreported and Unregualted (IUU) has prevailed in the very extensive Somali Exclusive Economic Zone (EEZ), however given the consistent migration patterns and the upwelling process this goes through perpetual replenishment and thus the fishery resource remained intact. Beside, EEZ fishery is mainly tapped by International vessels with minor presence of local artisanal fisheries. Thus keeping in view the artisanal and communal nature of the coastal resource management, its intensive use and the complex & threatened nature; our analysis of the marine biodiversity is confined to the coastal belt rather than the overall EEZ.

The Somali coast is characterised with an extended range of biodiversity including six species of mangroves *(Avicennia marina, Rhizophora mucronata, Ceriops somalensis, Bruguiera gymnorrhiza, Sonneratia alba* and *Xylocarpus obovatus*, FAO-SWALIM, 2010), at least 74 species of scleractinian coral, 11 species of alcyonacean (soft) coral and two species of fire coral; about 140 species of coral fish, various pelagic fishes, abundant cetaceans, large and diverse schools of dolphins (1 500 and 1 800 individuals), including large cetaceans baleen whales. The coast has several potential spots for migratory birds.

Coastal Zones of Somalia:

Keeping in view its distinctive characteristics, the Somali coastline can be divided into 5 zones (UNDP, 2011 & IUCN, 2006) as mentioned below (see Map 8: Coastal Zones of Somalia):

Zone 1: From south to north, this commences from the coast of Kenya and ends at the south of Kismayu. This also includes the barrier islands. The zone possesses diverse and complex collection of mangroves, coral reefs, beds of sea-grass and lagoons.

Zone 2: This zone runs from Kismayu to Adale and is characterized by sand dunes and low cliffs. The coastline has a very narrow continental shelf and the coast undergo high energy waves. In some places fringing coral reefs are found in this zone.

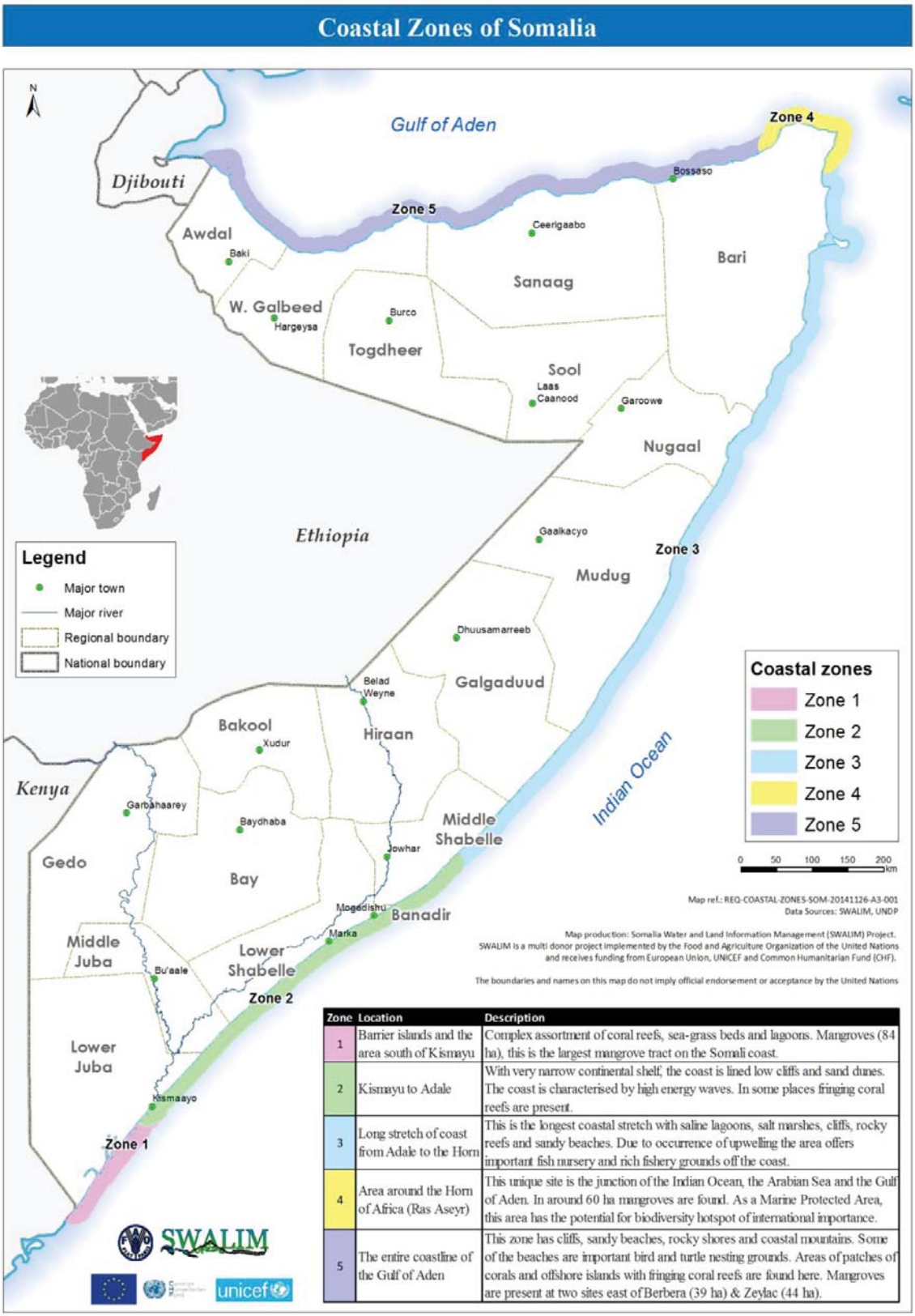
Zone 3: This zone forms the longest section of the coast and runs from Adale to Ras Asyer at the Horn. Upwelling occurs and the area provides important fish nursery and rich fishery off the coast. This zone has sandy beaches, rocky reefs, cliffs and salt marshes & saline lagoons; this stretch is further divided into the following four sections:

- Adale to Gara'ad, upwelling is dominant phenomena here. The section possesses sandy beaches and rocky reefs with profound coverage of algal coverage.
- Gara'ad to Foar, upwelling is also common here, with small stretches of beaches the coast is dominated by rocky headlands and cliffs. Rocky reefs with algal coverage are a dominant feature of this section.
- Foar-Hurdiya to the Hafun Complex, this region provide important fish nursery due to its shallow sandy bays, saline lagoons and salt marshes.
- Hafun Peninsula to Ras Aseyr; in the southern part cliffs form the coastline whereas sand dunes forms the northern part. This is a high energy coastline where towards the north upwelling occurs with relatively lower energy.

Zone 4: Around the Horn of Africa, this is a unique section as here Gulf of Aden, the Indian Ocean and the Arabian Sea meet. Due to its biodiversity potential and its unique global position, this section has the potential to be developed into a biodiversity hotspot of international importance.

Zone 5: This belt covers the entire coastline of the Gulf of Aden and possesses sandy beaches, cliffs, rocky shores and coastal mountains. There are two sites of mangroves present in this zone. Some of the beaches are important bird and turtle nesting grounds such as Saad a Din, etc. Patches of corals and offshore islands with fringing coral reefs are also found here.

Map 7: Coastal zones of Somalia



Zone	Location	Description
1	Barrier islands and the area south of Kismayu	Complex assortment of coral reefs, sea-grass beds and lagoons. Mangroves (84 ha), this is the largest mangrove tract on the Somali coast.
2	Kismayu to Adale	With very narrow continental shelf, the coast is lined low cliffs and sand dunes. The coast is characterised by high energy waves. In some places fringing coral reefs are present.
3	Long stretch of coast from Adale to the Horn	This is the longest coastal stretch with saline lagoons, salt marshes, cliffs, rocky reefs and sandy beaches. Due to occurrence of upwelling the area offers important fish nursery and rich fishery grounds off the coast.
4	Area around the Horn of Africa (Ras Aseyr)	This unique site is the junction of the Indian Ocean, the Arabian Sea and the Gulf of Aden. In around 60 ha mangroves are found. As a Marine Protected Area, this area has the potential for biodiversity hotspot of international importance.
5	The entire coastline of the Gulf of Aden	This zone has cliffs, sandy beaches, rocky shores and coastal mountains. Some of the beaches are important bird and turtle nesting grounds. Areas of patches of corals and offshore islands with fringing coral reefs are found here. Mangroves are present at two sites east of Berbera (39 ha) & Zeylac (44 ha).

Fishery Development Zones of Somalia:

From the fishery development perspective the Somali coast is divided into seven fishery development zones, Map 9 (source Ministry of Fishery and Marine Resources, Government of Somalia.

Map 8: Fishery Development Zones of Somalia

2.2.2 Wetlands biodiversity

Somalia's wetlands are elaborated on the basis of Hughes and Hughes (1992) description together with Country Environmental Profile for Somalia (IUCN 2006), Marine Environment Diagnostic Assessment (UNDP 2011) and FAO – SWALIM water resources database. Keeping in view the dry nature of the country, rather a smaller area is under the perennial wetlands, most of which are in the south of the country.

For watering livestock and sometime also as source of irrigation, around 240 reservoirs have been constructed in various parts of the country. Although the broader significance of these reservoirs for biodiversity is limited, however, at times they serve as resting points for birds, as well as feed the flora around. In the central districts no major wetlands exist except various sink holes, the only small only small lake of biodiversity significance lies at 4°15'N, 46°30'E (IUCN 2006) off which shelters the endemic blind fish *Phreatichthys andruzzii*. There are also several large pans towards the coast which seldom hold water and when they do it is only for brief periods.

Following are the four categories of wetlands with biodiversity significance in Somalia:

a. Wetlands of the Shebelle – Juba Rivers:

The sub-coastal valley of River Shebelle is characterised by swamps and floodplains. Here along the three channels of the river, a swamp of 25 km wide and 150 km long covering around 3,000 km2 area exists with high potential significance for biodiversity. The Juba at the upper reaches in Somalia, has some swamps and floodplains along its deeply entrenched bed, however below this region there are no permanent swamps but a flood plain exists. There are nevertheless around 60 km2 of old river courses exists that flood seasonally. At the meeting point of Shebelle and Juba an extensive floodplain exists, followed by marshy land after which these rivers drain estuary at Jumba, where most of Somalia's mangroves are found.

b. Wetlands of the Laag district

Laag (Lag) is temporary large water course that drain into southern Somalia mainly from Kenya. The principle one is Laag Dheera with tributaries such as Laag Bor, Laag Kutulo, etc. they form the broad floodplains during rainy seasons. These laags have formed a floodplain covering a surface area of 330 km^2. Most of the water from the Bor joins Laag Dheere resulting into a large pan. Laag Dheere has several permanent swamps along its course, covering a surface area of nearly 60 km^2 in its upper reaches and 50 km^2. This joins the Juba River 40 km before the estuary. Another large pan of 330 km2 surface area is situated on the plateau, 120 km north of the Bor and Dheere wetlands. The pan is flooded by over 20 small watercourses annually albeit for a short period.

c. Tidal wetlands

These wetlands are found in the Gulf of Aden, mainly in the west where 27 watercourses drains into the area between Saada Din Island and Saba Wanak. This area is basically a continuous salt-marsh developed on sediment washed down from the Ogo Mountains. Some of the tidal wetlands are also found in bays in the East of Somalia. On the Indian Ocean

Coast two tidal wetlands are found (10°35'N, 51°06'E and 10°21'N, 50°57'E respectively). Further South tidal swamps exist between 1°57'N and 45°15'E. In the south near the Kenya border, tidal wetlands also occur along the coast.

d. Bullehs, Tugs and Dholos

A bulleh is a small endorheic depression which is filled by runoff after a storm. These have distinct soil types which retain moisture and as a result have richer vegetation than surrounding areas. Tugs are small temporary watercourses with low gradient. When in flood their waters spread over a wide area and cause broad alluvium deposits. Tugs often end in inland deltas which are known as dholos. These are often set in the valley of a larger watercourse or may spread over raised coral reefs along the coast. These systems also have dense vegetation.

2.3 Drivers of biodiversity change in Somalia

Changes in biodiversity and in ecosystems are almost always caused by multiple, interacting drivers. Changes are driven by combinations of drivers that work over time (such as climate change) or level of organization (such as local zoning laws versus international environmental treaties) and that happen intermittently (such as droughts, wars, and economic crises). The most common type of interaction is synergetic factor combinations: combined effects of multiple drivers that are amplified by reciprocal action and feedbacks, (Millennium Ecosystem Assessment, 2005). The Somalia's situation depicts the true picture of these synergistically interacting drivers. The drivers of biodiversity change in Somalia are follows:

For the direct drivers, beside the available literature & consultation with the key stakeholders, with the help of FAO-SWALIM and EU, seven areas were identified to assess the habitat degradation/fragmentation as a result of agriculture expansion, gully/sheet erosion, habitation expansion and deforestation (both generic and charcoal based). The analysis was based on the time series (2003-2014) available images on Google Earth. The extent of the covered examined areas by the Area of Interest (AOI) ranges from 17 to 400 km^2 and in each area one typology of degradation was assessed during this period of over ten years, shortly described in one field of the data-base. These time series images of these seven sites (selected in three eco-regions (Juniperus excelsa forest, semi-desert grassland/bushland and Acacia-Commiphora bushland) are analysed through both visual analysis and NDVI based examination. The analysis is captured in the following description and statements that examine the direct drivers of biodiversity loss, the direct drivers are follows:

2.3.1 Habitat fragmentation/degradation

In Somalia the habitat fragmentation and degradation is shaped by various factors, however in particular by deforestation, erosion, gullies formation, encroachment for agriculture and infrastructure for communication & habitation. In the context of Somalia, the impact of fragmentation becomes significant as the biodiversity in general and the mammalian fauna in particular roams in a transboundary nature, the fragmentation setbacks this process. Species that are specialized to particular habitats and those whose dispersal abilities are weak suffer from fragmentation more than generalist species with good dispersal ability (WRI, 2005). This is true for the endemic species of Somalia such as Somali wild Ass and endemic angulates.

Nevertheless species with good dispersal ability such as the larger cats have moved to the contiguous less-fragmented habitats in Kenya and Ethiopia. Although habitat degradation is pronounced in the form of gully formation and encroachment for settlement, (the FAO-SWALIM seven point analysis established the 22 km^2 sample area near Qardho in Bari/Sool region of the semi-desert grass/bushland depicts accelerated gully formation juxtaposed with the encroachment of natural habitat for settlement – 9.28 N, 49.03E).

The habitat fragmentation & degradation is quite generic to Somalia, however the Southern Somalia is more affected due to encroachment for agriculture in the Shebelle & Juba basins and Cowpea belt of central eastern parts of the country. The deforestation for charcoal is another leading factor, that is reported since at least 1950s, nevertheless after the collapse of the Government in 1991, substantially enhanced and revolutionized since the beginning of the current millennium as this is now the main source of financing the ongoing militancy in the southern Somalia, (details of charcoal-led deforestation is in deforestation section).

The forests of the north can't be accessed physically due to security situation, nevertheless on the basis of available time-series satellite images, no significant vegetation change can be observed.

Small fragments are therefore unfavorable for those species that require interior habitat, and they may lead to the extinction of those species, such as African Wild Ass – *Equus africanus somalicus*, Hirola antelope – *Beatragus hunter*, Archer's Lark – *Heteromirafra archeri* and Somali Trush – *Turdus ludoviciae*. Fragmentation affects all biomes, but especially forests and major freshwater systems, (WRI, 2005); thus the forest of the South with species such as Acacia bussei, etc. are severe threat due to the fragmentation caused by revolutionized charcoal business. The freshwater wetlands in the Juba/Shebelle systems are the victims of fragmentation for agriculture expansion.

On the other hand, large concentrations of livestock together with the felling of trees for charcoal and firewood have had a profound impact on species composition, ground cover and the structure of vegetation (Sommerlatte and Umar, 2000). Grazing pressure and soil erosion are now a serious problem and, together with periodic droughts, have had a devastating effect on the vegetation and soils.

2.3.2 Invasive species

In freshwater habitats, the introduction of alien species is the second leading cause of species extinction, and on islands it is the main cause of extinction over the past 20 years, along with habitat destruction (WRI, 2005). Although not limited to, however the major invasive species in Somalia is *Prosopis juliflora*, together with *Prosopis pallida* and *P. chilensis* were initially introduced to East Africa for the stabilization of dune systems and for providing fuel wood after prolonged droughts in the 1970's (Von Maydell 1986). In many areas the species have hybridized to an extent that the current varieties have lost most of their valuable woody attributes and aggressively outcompete native shrub and tree vegetation (Pasiecznik 2001). The recent study (unpublished) conducted by FAO-SWALIM, assesses the invasion of *Prosopis* in Somaliland and confirms that it is encroaching only productive areas under agriculture or forestry. In the desert or semi-desert areas its infestation is rather insignificant. The islands and mountain areas are also infested.

The results also confirms that *Prosopis* is widely spread across Somaliland with a particularly high concentration in the Woqooyi Galbeed region. Also the pattern of invasion confirms that it invades first lowlands next to rivers and Wadis as well as peri-urban areas both inland and along the coast (FAO-SWALIM, Rembold, F. and Leonardi, 2014).

The other leading invasive species is Indian crow, and this in particular affect the avian biodiversity, not only due to competition for food but also the chicks and eggs of various birds form the feed of the Indian crow, the worst factor is its ever increasing number without much control mechanism available for both these leading invasive species. So far the available eradication measures are not cost-effective and in the rather limited financial and institutional capacity of the Government, this can be only be attempted in a project mode.

2.3.3 Over exploitation/over-use

a. Hunting/poaching:

Although referred with astonishing abundance and diversity of wildlife in early 1900s by hunters and colonial officers, Somalia at the time had a reputation of being one of the best wildlife havens in Africa (UNEP, 2006). However over the time, the situation kept on deteriorating and as by 1980s, the status of wildlife in Somalia was reported as being sparse due to livestock grazing and illegal hunting (IUCN, 1986). Now with the exception of small patches of wildlife, many species are believed to be approaching local extinction.

Hunting wild animals for meat has never been widely practised in Somalia, although certain species were hunted prior to the enactment of the 1969 law of Fauna (Hunting) and Forest Conservation for their skins and as trophies (UNEP, 1984). During the 1960s, approximately 60,000 gazelle skins, 250,000 dikdik skins, 18,000 kg of ivory and between 3,000 and 5,000 live monkeys were exported.

On poaching no reliable updated data is available; nevertheless the anecdotal information reveals that random hunting for meat still exists particularly in case of antelopes, whereas species such as cheetah, etc. are caught for smuggling to the gulf countries. A senior officials revealed that only in the month of Septembers/October six cheetahs were confiscated while on the way to Gulf countries, where one piece is sold up to USD 20,000 and kept in personal zoos.

Somalia has ratified the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), but few if any practical measures are being taken to ensure its implementation. Like for the fisheries, the wildlife is also subject to illegal, unreported and unregulated trapping and trafficking.

b. Overgrazing:

Somalia's economy and livelihoods are predominantly driven by livestock sector, with grazing rather than stall feeding is the norm. The predominant livestock species are goats, sheep, camel and cattle. Free-grazing prevails on indigenous pattern, the nomadism follows

the availability of forage & water, and is not done on rotational purposes to provide rest period for the vegetation to be grazed on sustainable basis. The free/over grazing has led to habitat degradation in multiple ways such as leading to stunted growth of vegetation due to browsing pressure, over-grazing on the other hand has marred the natural regeneration of the woody vegetation. The hoeing phenomenon together with the removal of the vegetation cover has facilitated the gully and sheet erosion. Thus the process of land degradation is perpetuated by the mutually reinforcing degradation factors of soil erosion together with suppressed regenerative capacity of the natural vegetation – the protective cover of the soil and habitat in general.

The excessive number of the livestock, besides the overgrazing, pushes away the wildlife in general and ungulates in particular, because of direct competition for forage and space. On the other hand predator in general and cats in particular are threatened as the ranching community clears them away to protect their livestock. In some areas such as Nugaal, Puntland (see pic), the grasslands are profusely rich, and support the grazing pressure with less depletion, however the huge presence of livestock outcompete the wildlife, due to the mentioned factors.

c. Deforestation:

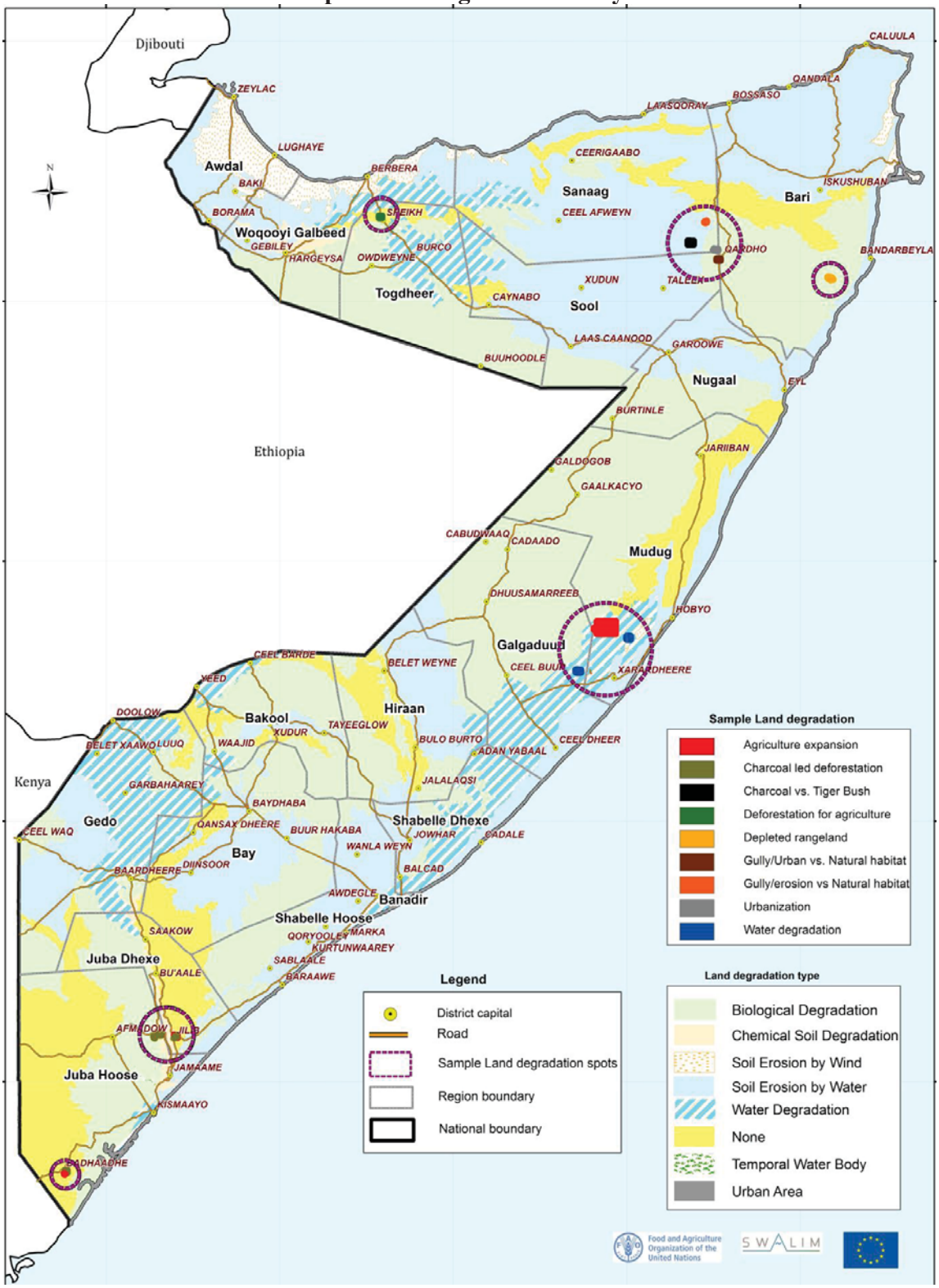
Somalia is not a forest rich country with less than 3% area covered by close canopy forests. This is distributed in the Golis Mountains of the north and the Coastal Forest Mosaic, south off-Kismayu. Close to open canopy Acacia and Commiphora vegetation covers a vast part of the country. Despite being a forest poor country, deforestation is a reported fact, since 1970s, on rather a localized scale for firewood, timber and charcoal making. The Golis forests are affected to fulfil the local firewood & timber requirements. The Acacia & Commiphora belt is subject to deforestation for charcoal making predominately. The process is observed to revolutionize since the late 1990s, however increased tremendously when the charcoal becomes the financial source of the militancy of clan and extremist warfare.

The favourite wood for charcoal comes from *Acacia bussei* and a recent study by FAO – SWALIM) for Puntland estimates the annual rate of *Acacia bussei* decline at about 5%. According to a WSP report, the charcoal output of north-east Somalia in 1996 was estimated to be in the order of 4.8 million sacks,each weighing 25-30 kg (WSP, 2001). Producing such a volume required cutting approximately 2.1 million *Acacia bussei* trees. At an average density of 60 trees per hectare, this translates into a deforestation rate of 35 000 hectares of land per year. Extrapolating the above figures for production of the 10 million sacks of charcoal produced in the South Somalia during 2011 (only export), means felling 4.375 million trees or clearing 72,916 hectares of land. Considering the above mentioned extent of *Acacia bussei* tree felling in Somalia and no re-plantation, this species was placed on the Red List of threatened species in 2009 by the IUCN (FAO – SWALIM, 2014).

Charcoal driven deforestation is also confirmed in the tiger bush ecosystem of Sool Plateau in North Eastern Somalia, where for the period from 2001 to 2006 an annual tree loss of 2.8% with complete absence of reforestation for five years was noted (S.M.Oduori, et.al, 2011). To the local people this is the cat belt and cheetah population is still observed in this region. This is also one of the regions in Eastern Africa most frequently hit by drought and at the end of 2009 it was classified as “humanitarian emergency” area by the IPC (Integrated Food Security Phase Classification) as a consequence of 4 consecutive drought seasons (FSNAU, 2010).

In another study by SWALIM FAO, while using the Very High Resolution (VHR) satellite imagery of early 2011 and early 2013, tree loss over a 6000 km2 area along the Juba River in Southern Somalia was observed. The analysis of the changes between the two dates led to an average tree loss estimation of 3.3%, corresponding to 520,520 trees over the 2 years period (FAO SWALIM, 2014).

Map 9: Land degradation analysis



The UN consider the charcoal based deforestation and the associated complex issues surround its production leading to triple threats for Somalia: a. irreversible environmental degradation

including habitat degradation & fragmentation, b. perpetuating conflicts and c. dependence on short-term income from an unsustainable livelihood option (UN Somalia, 2014). Thus with this triple reinforcing impact the charcoal based deforestation is effectively impeding prospect for sustainable development in the country. Realisation of these multifaceted issues resulted in imposition of a ban on the import of Charcoal from Somalia by the UN Security Council in February 2012 (UN joint project proposal (UN Somalia, 2014). However the UN monitoring mission report of 2014 indicates the charcoal based deforestation is still in place and the product is mainly exported rather than used locally, and the resulting profits are used to fuel the extremist's hostile activities in Somalia. The overall international market value of the charcoal exported in 2013 and 2014 can be estimated to be in excess of $250 million, but could be much more given that the Monitoring Group may not have identified all shipments (UNSC, 2014).

All these studies conclude that a charcoal led deforestation in Somalia is a chronic and active phenomena which is so far not been adequately addressed, whereas the damage to the habitat is persistently grave.

2.3.4 Climate Change as driver of biodiversity loss:

The recently completed National Adaptation Programmes of Action (NAPA) provides an elaborate account of the climate change – biodiversity nexus under the sectoral vulnerabilities. The extreme climate events of alternating droughts and floods cause adverse effects on biodiversity. The drought exacerbates deforestation for charcoal, increases hunting, and accelerates soil erosion due to deforestation, bush fires, wildlife migration and reduction of biodiversity. It also leads to increased number of pests and pathogens. The flooding lead to soil erosion and loss of nutrients, wildlife migration, reduced aquatic reproduction and productivity of habitat and causing local extinctions. The droughts also affect marine biodiversity by reducing the plankton production, increased salinity in coastal ground water due to salt water intrusion and coral reef destruction due to higher Sea Surface Temperature (NAPA Somalia, 2014).

Climate change in the past century has already had a measurable impact on biodiversity. Observed recent changes in climate, especially warmer regional temperatures, have already had significant impacts on biodiversity and ecosystems, including causing changes in species distributions, population sizes, the timing of reproduction or migration events, and an increase in the frequency of pest and disease outbreaks. The coral reefs of Somalia have undergone major, although often partially reversible, bleaching episodes due to the local sea surface temperatures increase by 0.5–1^{o} Celsius above the average of the hottest months. Precipitation patterns have changed spatially and temporally, and global average sea level rose 0.1–0.2 meters. By the end of the century, climate change and its impacts may be the dominant direct driver of biodiversity loss and changes in ecosystem services globally; Somalia can't be an exception to this at the least.

Somalia has increasingly suffered in the recent decades from alternating flash floods and droughts, thus can't escape the given impacts of climate change as direct drivers of biodiversity loss.

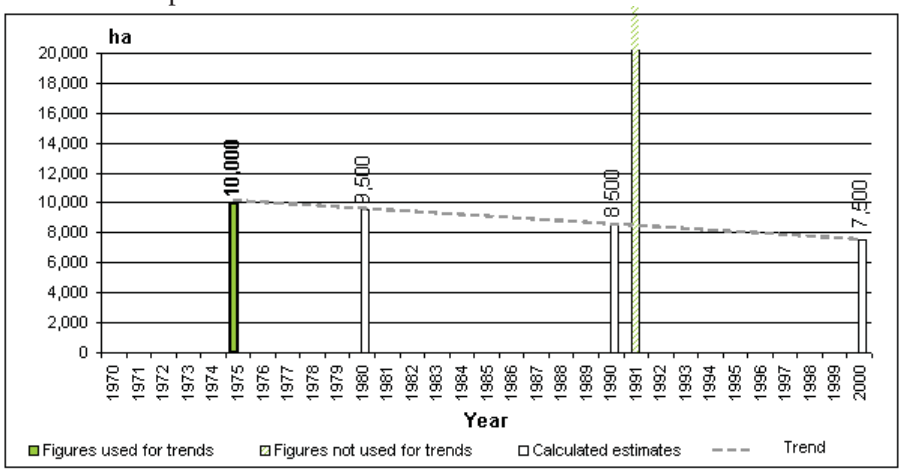
The scenarios developed by the Intergovernmental Panel on Climate Change project an increase in global mean surface temperature of 2.0–6.4o Celsius above preindustrial levels by 2100, increased incidence of floods and droughts, and a rise in sea level of additional 8–88 centimetres between 1990 and 2100. Harm to biodiversity will grow worldwide with increasing rates of change in climate and increasing absolute amounts of change, however with very low level of preparedness, Somalia will be the worst affected of these changes, despite the fact that its contribution to the global GHG is rather negligible.

Recent studies, using the climate envelope/species-area technique, estimated that the projected changes in climate by 2050 could lead to an eventual extinction of 15–52% of the subset of 1,103 endemic species (mammals, birds, frogs, reptiles, butterflies, and plants) analysed (WRI, 2005). For Somalia, the extent and nature of biodiversity loss due to climate change needs to be adequately investigated as so far reliable data is not available, nevertheless the fact remains that harm to biodiversity will grow worldwide with change in climate, and countries such as Somalia with least preparedness, will suffer the most.

2.3.5 Drivers of change for the coastal biodiversity:

The major driver to the change of the coastal biodiversity of Somalia are the excessive use of these resources on one hand and the pollution in the shape of waste disposal, oil spillage, run-off, waste coming from the settlements, etc. Various threats are mentioned as follows:

- **Mangrove depletion:** The mangrove of Somalia are facing multiple threats and the depletion process is vivid, among the major issues are cutting the mangrove for timber and firewood, overgrazing and browsing, waste disposal, sand dune encroachment, flood water erosion and oil spillage, (FAO-SWALIM, 2010). The dumping of toxic waste is also mentioned, however can't be further substantiated in relation to mangrove depletion. Trends in mangrove area over time clearly shows the deforestation, the annual rate of deforestation is around 1 per-cent:



Trends in mangrove area extent over time, the estimates for 1980, 1990 and 2000 have been calculated applying FRA 2000 (FAO, 2001),

Year	1975	1980	1990	2000	2005
Area	10 000	9500	8600	7800	7300

Somalia mangrove status along the timeline (FAO, 2005)

- **Coral Bleaching:** Although varying considerably in condition the coral community on the reefs have been affected by bleaching to some degree. The shallow reefs to the east of Berbera had suffered badly, where the deeper reefs were in better condition. The Red Sea coral reefs from Berbera to the border of Djibouti are reportedly in relatively good condition, where at Saad a din islands, coral diversity, fish populations and individual fish sizes were large (Pilcher and Alsuhaibany 2000). Coral bleaching had a significant impact during the 1997/1998 El Niño.
- **Coral mining:** Limestone mining on the coral reef exists mainly off southern towns such as Marka and Barawe. The communities in these two towns mine limestone on the shore for use in house construction. Lime making is also common for whitewashing and house decoration. The mining for limestone degrades the coastal landscape in addition to causing inundation, sedimentation and erosion (UNDP, 2011).
- **Sand mining:** Sand mining is very popular in all coastal towns and fishing villages in Somalia. Most of the mining takes place in sand dunes. Mined sand is mixed with cement, coastal soil and gravel to make bricks for construction. This activity destabilizes the coastal sand dunes (UNDP, 2011).
- **Urban expansion:** The civil unrest and war in Somalia has led to the displaced people with least waste management arrangements, and thus led to increased solid waste generation and dumping of garbage directly onto the sea shore. Due to lack of regulation, almost all the coastal cities and towns use the beaches as garbage dumping sites. Over the years, a huge volume of garbage has accumulated on the beaches. In addition, runoff from agricultural lands and urban areas also bring into the coast animal and human wastes, pesticide and fertilizer residues that degrade water quality and ecosystem health (UNDP, 2011).

CHAPTER 3: INSTITUTIONAL FRAMEWORK FOR BIODIVERSITY OF SOMALIA

The overall institutional framework for biodiversity conservation and the sustainable use of its components can be elaborated as follows:

3.1. Constitutional support to environment and biodiversity

Although this NBSAP is the first framework document that outlines the overall strategic and action planning for sustainable development of Somali biodiversity, nevertheless the essential institutional space is provided by the new constitution of the country. This constitution, including the constitutions of Somaliland and Puntland, places strong emphasis on environment, land rights and natural resources. Article 25 states that "*Every person has the right to have a share of the natural resources of the country, whilst being protected from excessive and damaging exploitation of these natural resources*". Article 45 of the Constitution is focused on further explaining the overarching environment decrees; 1) the government shall give priority to protection and preservation of biodiversity and ecosystems, 2) all people have a duty to safeguard the environment, 3) the federal government and member states should address the existing issues of hazardous waste, desertification, deforestation & environmental degradation, and 4) the Federal Government shall adopt general environmental policies for the Federal Republic of Somalia. Constitution of the Puntland State of Somalia elaborates, in congruence with the Federal Constitution, the environment related clauses by holding the state and its people responsible to restore and protect the environment. It also prohibits the export of charcoal, wildlife animals and acts leading to desertification. The constitution of Somaliland emphasises on the sustainable use and protection of elements of biodiversity by enunciating to *take all possible steps to explore and exploit all these resources which are available in the nation's land or sea. The protection and the best means of the exploitation of these natural resources shall be determined by law. The state shall encourage indigenous economic production such as agriculture, livestock, fisheries, minerals, production of frankincense and myrrh and gum etc., and manufacture based on indigenous products*. The constitutions pronounce the formulation of special laws to regulate the protection of the environment.

3.2. The policy and regulatory framework

At the policy level considerable work is done, that although support the various elements of biodiversity conservation, nevertheless a cohesive and focussed biodiversity conservation policy framework still needs to be in place. The various policies and strategic frameworks that are relevant to biodiversity conservation and its mainstreaming in the overall development process are follows:

Three policy and legal instruments that are directly dealing with biodiversity conservation of Somalia comprise the National Wildlife Policy, National Wildlife Strategic Plan and National Forestry and Wildlife Act. All of these instruments are in draft shape and are in varying stages of approval by the Federal Cabinet, nevertheless contains promising elements which, subject to effective implementation, shall substantially contribute to the implementation of the

National Biodiversity Strategy and Action Plan as well as of relevance to Strategic Plan for Biodiversity 2011-2020 and its Aichi targets.

Under the overall coordination of directorate general of environment, the National environmental policy is drafted and is awaiting cabinet's approval. As an enactment apparatus of this policy, the National Environment Act is also drafted, however pending approval. In 2010, the Ministry's Environmental Strategic Plan was updated, however several elements still need revision due to rapidly changing policy landscape. The Environmental conservation Act developed in 1998 is still in place and deals with various aspects of environmental protection.

The Food and Water Security Strategy of 2013, developed by Ministry of Planning & International Cooperation, is a broader framework that provides a starting point for the overall mainstreaming of biodiversity conservation in the National development process.

3.3. Institutional and human capacity

At the Federal level, the State Minister for Environment based at the office of Prime Minister, coordinates the environment related policy, strategy and medium-term plans. Beside, coordinating the broader institutional aspect of environment this office also serves as the focal point for various Multi-lateral Environment Agreements (MEA) including Convention on Biological Diversity. The office also performs the function of GEF coordinating body and looks after the subject of biodiversity. Although other relevant ministries such as Ministry of Livestock, Forest & Range and Ministry of Fishery also looked after the components of terrestrial & aquatic biodiversity, nevertheless these institutions goes by a sectoral approach to forestry or marine resources without a cohesive approach towards biodiversity conservation. The Federation of Somalia comprise of 5 Interim Administrations namely Mogadishu, Puntland, Somaliland, South West and Juba Land. The NBSAP is coordinated at the Federal Level by State Minister for Environment, whereas in all the Interim Administrations the respective Environment Ministries coordinate the subject of biodiversity and will be responsible for coordinating implementation of the NBSAP & LBSAPs in their respective zones. In some zones the biodiversity management capacity is more pronounced than others, for instance Somaliland and Puntland are relatively seasoned in planning for biodiversity conservation, which they exhibit while developing their own Local Biodiversity Strategy and Action Plans. The Ministry of Planning and International Cooperation together with Ministry of Finance is responsible for federal level planning and budgeting the resources. For the implementation of NBSAP the coordination between these Ministries and Zonal Environmental Ministries is performed by the State Minister of Environment.

In Somaliland, the Ministry of Environment and Rural Development is mandated to manage environment, including biodiversity conservation. The Ministry is responsible for developing policies and strategic plans related to environment, including biodiversity. This Ministry is responsible for coordinating the environment related interface among other relevant ministries, non-government organisations and international development partners and private sector towards enhanced environmental conservation. The responsibility of forest conservation and wildlife conservation, management & breeding also rests with this Ministry. Conducting research and its dissemination is the responsibility of this Ministry.

In Puntland, the Ministry of Environment, Wildlife and Tourism (MoEWT) is mandated to conserve & sustainably use biodiversity and its products. The Ministry is also responsible for the development of relevant policies and strategic plans, besides overseeing the implementation of these policies and plans. As focal institution, this also carry the responsibility to coordinate & collaborate between various governmental, non-governmental organizations, international development partners and private sector for the promotion of sustainable management of the components of biodiversity. The ministry is also mandated to conduct research and its disseminate findings related to renewable natural resources of Puntland.

Figure 1: The Federation of Somalia with five zones/interim administrations

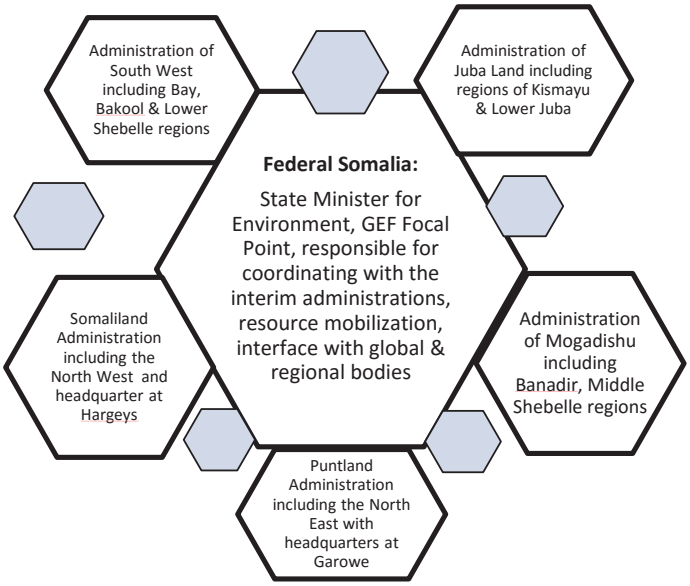
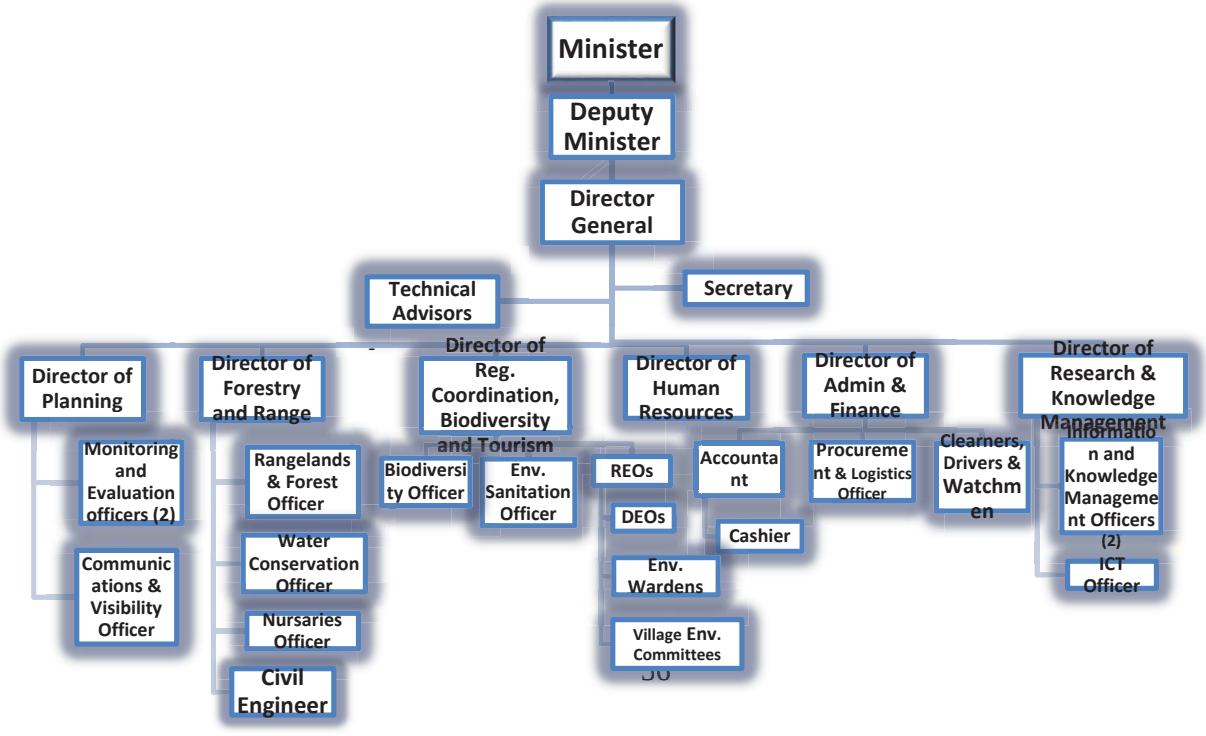


Figure 2: The organogram of Puntland Ministry of Environment, Wildlife and Tourism



The organogram of Puntland Ministry of Environment is presented above to give the idea where the NBSAP will be placed in the Zones/Interim Administrations, however the organogram of various zones/interim administrations are not identical in nature and have been devised to suit the specific dynamics of the respective zone.

3.4. Gaps and needs to strengthen biodiversity conservation

Beside the existence of upstream arrangements – constitutional support, policy & strategic frameworks – the downstream capacity is very limited to implement the policy and enactment instruments. Although the extent and drivers of degraded state of biodiversity of Somalia are elaborated in the previous sections, nevertheless, the gaps related to institutional limitations and the management approaches still needs elaboration. Thus the gaps described in this section focuses on limitations of the institutional capacities and the biodiversity management & its approaches.

3.4.1 Institutional & Capacity gaps:

Given the evolving, yet promising constitutional, policy & legislative framework; the institutional and human capacity is rather limited both at the Federal level as well in Puntland and Somaliland.

The ministries at both the Federal as well as zonal levels are considerably structured, nevertheless they are understaffed, the situation further deteriorates when it comes to the implementation at the level of region or districts. Thus the policies formulated even in participatory manner have lesser prospects of effective implementation on the ground. The regions /districts are staffed with just few persons, there are more people on the list (employed) but due to limited finances available, most of them are not paid and are dormant till the funds arrives.

Despite the presence of the position for research at the Ministry level, the actual capacity to conduct research work is very limited. The research cycle is rather non-existent in the regions and districts, as there is no extension and feedback mechanism of the research services from the ministry to the ground and vice versa. Besides understaffing the ministries as well as the regional hubs are poorly endowed with essential equipment, materials and infrastructure that are necessary for effective operation. The fiscal allocation and the available essential equipment are few compared to what is required. For instance, even essential equipment such as GPS, high definition camera, binoculars and other survey apparatus are seldom available for conducting wildlife surveys or ecosystem mapping.

Although the organizational structures are elaborate, with the scope of integrating indigenous elements of management such as the clan system & traditional management practices, nevertheless the overall multi-dimensional resource requirements is barely touched. The

challenges are manifold such as limited skills and understanding of biodiversity conservation among the lower tier of the relevant staff, the very limited human capacity (in number, skills, systems, equipment, finances, networking, etc.) on the ground. The staff at the ministry level is reasonably educated and the strength is although lean, still comparatively much better when it comes to field staff.

3.4.2 Absence of synergy among managing actors:

Beside the limitation of the public sector institutions mentioned above the other potentially contributing sectors such as private sector, civil society/NGOs and grass-root communities are either not engaged in the biodiversity management scene or otherwise they work in a patchy and non-cohesive manner. Synergy of working together towards a common goal is not evident. Lack of coordination with sectors, such as government departments managing components of biodiversity is coupled with lack of synergy among the broader sectors they ought to manage biodiversity jointly.

3.4.3 Baseline assessment:

Appropriate baseline assessment of the biodiversity resource is essential prior to policy formulation, strategic planning and putting in place corresponding institutional & management arrangements. However in the case of Somalia, given the security and capacity limitations, coming up with appropriate baseline has become increasingly challenging. Several of the potential biodiversity hotspots in the country in general and South-Central in particular are still physically less accessible due to the active conflict or the post-conflict tension. To certain extent, the terrestrial flora can still be mapped with the help of remote sensing; however this can give a rather less differentiated assessment in terms of management details. The fauna needs physical surveys where the satellite images alone can't help much. Assessing the coastal and marine biodiversity is more demanding and that's why and on the face of serious capacity and access issues, the baseline assessment is least available, compared to terrestrial biodiversity.

3.4.4 Management gaps:

There are over 40 potential biodiversity hotspots, several of which were already notified by the government. Nevertheless none of them is managed at least according to the required standards. Systematic and cohesive management (model presented in annex 7) of biodiversity products & services is almost non-existent in Somalia. To the best protective practices prevails in areas where indigenous communal management exists, however in most cases protection follows by rather an unsustainable use, characterised by in-equitable distribution of benefits and management obligations. The weaker segments of the community remain marginal in this context. The biodiversity products are mostly utilized in less-refined form without adding value during the post-harvest processing, thus over-use is associated with resource exploitation beyond carrying capacity on one hand and much less return on the other.

Certification process is non-existent for most of products, thus has carry less chance to compete in the international market with similar products that are certified.

The biodiversity context of Somalia is characterised by indigenous knowledge and management practices. The management arrangements related to resource generation, protection, harvesting, benefits/responsibilities distribution and resource-based conflict resolution existed. However, these indigenous management arrangements significantly eroded due to the prolong unrest in the country. The state-backed/sponsored management arrangements, on the other hand, are not backed by requisite capacity, so not prevails in practice.

Despite of the prevailing weaknesses in both the indigenous & state sponsored management arrangements, the opportunity of mutual reinforcement exist that needs to be appropriately tapped. Thus the adequate integration of indigenous and government arrangements can significantly contribute to the effective management of the biodiversity. However this requires systematic efforts and mutual willingness of the government and respective clans.

3.4.5 Sectoral versus integrated approaches:

Effective biodiversity conservation and its sustainable use entail integrated approach that strike balance between the components of biodiversity i.e. species, genes, varieties & ecosystem on one hand and the various renewable natural resource regimes (forests, agriculture, fishery, rangeland, wildlife, etc.) on the other. However the present management of these resources are sectoral in nature and lacks integration and cohesion.

3.4.6 Capacity gaps

The capacity dimensions at the upstream level of legislation, policy and strategic planning is presented in the preceding section; nevertheless the downstream capacity that is essential for effective implementation of the policy and strategies has a substantial gap vis availability and requirement. The capacity gap is described as follows:

Staffing: The biodiversity rehabilitation followed by effective its management demands intensive efforts that requires sufficient number of staff with diverse competencies. However the staff is insufficiently available and that too underpaid & underequipped. The staffing situation at the ministries is insufficient, but still better than the regions. On the other hand the regions and districts require rigorous efforts and profuse presence of the relevant staff as here the policies are translated in action, however the staff is very scanty (not more than few in any case) thus the enactment of policies and laws on the ground becomes very weak on the face of huge staffing gap.

Beside the insufficient number of staff, the extremely low level of salaries and incentives is another demotivating factor on the face of immense challenge of restoring the lost biodiversity and its subsequent conservation and sustainable use.

Skills: The skills requirement of the conservation and sustainable use of biodiversity is quite high and diverse in nature. This may be categorized in resource assessment, rehabilitation/regeneration, maintenance/protection, harvesting, consumptive & non-consumptive use, value added processing, certification, outfitting/Marketing, equitable distribution of benefits & obligation, conflict resolution and investment for further improvement in the management cycle. A systematic listing and gap analysis of the required and available skills for sustainable biodiversity management is presented in Annex 7. This explains the skills requirement vis a vis gaps not only for the government but also for the other potentially contributing actors such private sector, non-government organizations and grass-root communities.

Technology gap: The appropriate technology for effective biodiversity management comprise of the availability of hardware, the know-how to use & maintenance and subsequent internalization by creating self-reliance. The technology requirement for the various types of biodiversity and its associated management is quite divers in nature. The technology requirement can be broadly divided along the management phases of assessment, rehabilitation, protection/maintenance, harvesting, processing, utilization/marketing and certification. In the Somali context the gap between technology availability and requirement is huge and in several cases the required technology is rather absent at the moment. This has adverse effect on the resource as in the absence of technology the consequence is over-use of resource base with less final return.

Networking gap: Biodiversity conservation and sustainable use demands joining hands for knowledge sharing, resource mobilization and synergetic action. Networking among various relevant actors at the national level in general and international in particular is very weak. Networking with international knowledge & advocacy forums, regional or international laws enforcing bodies, funding foundations and multi-national trust funds and other global forums that deals with the subject is not adequately present.

3.4.7 Investment gap:

In the UN Somalia Integrated Strategic Framework 2014-2016, environment is dealt under the Economic Foundation Priority ‘3’ of PSG ‘4’ that aims at Promoting the sustainable development and management of natural resources by developing legal and regulatory frameworks and building capacity in key Natural Resources Management (NRM) institutions with a budget of $ 30 Million, out of which around $ 10 million is mobilized for climate change. Another proposed relevant joint project is Sustainable Charcoal Production and Alternative Livelihoods with a budget of $ 23.7 million, is pending Government endorsement towards resource mobilization and subsequent initiation. From the Somaliland Development Fund (SDF), $ 2.3 Million is awarded for the project titled, ‘Enhanced Capacity Development for Ministry of Environment and Rural Development for Somaliland’. Beside this less significant funds availability for overall environment sector, the biodiversity conservation is rather marginally focussed here.

For biodiversity conservation, neither an accurate resource requirement is available nor did specific funding set aside for through donors’ assistance. The government support is mainly for salaries and other essential expenses. In our consultation workshops in the three zones

(Somaliland, Puntland and South-Central) the investment requirements for the NBSAP were roughly indicated around US $ 300 Million, with 80% to be mobilized from international development partners with 20% coming from the government and other local resources. Thus around $ 240 million are to be mobilized from various sources to do justice with the NBSAP goals and targets.

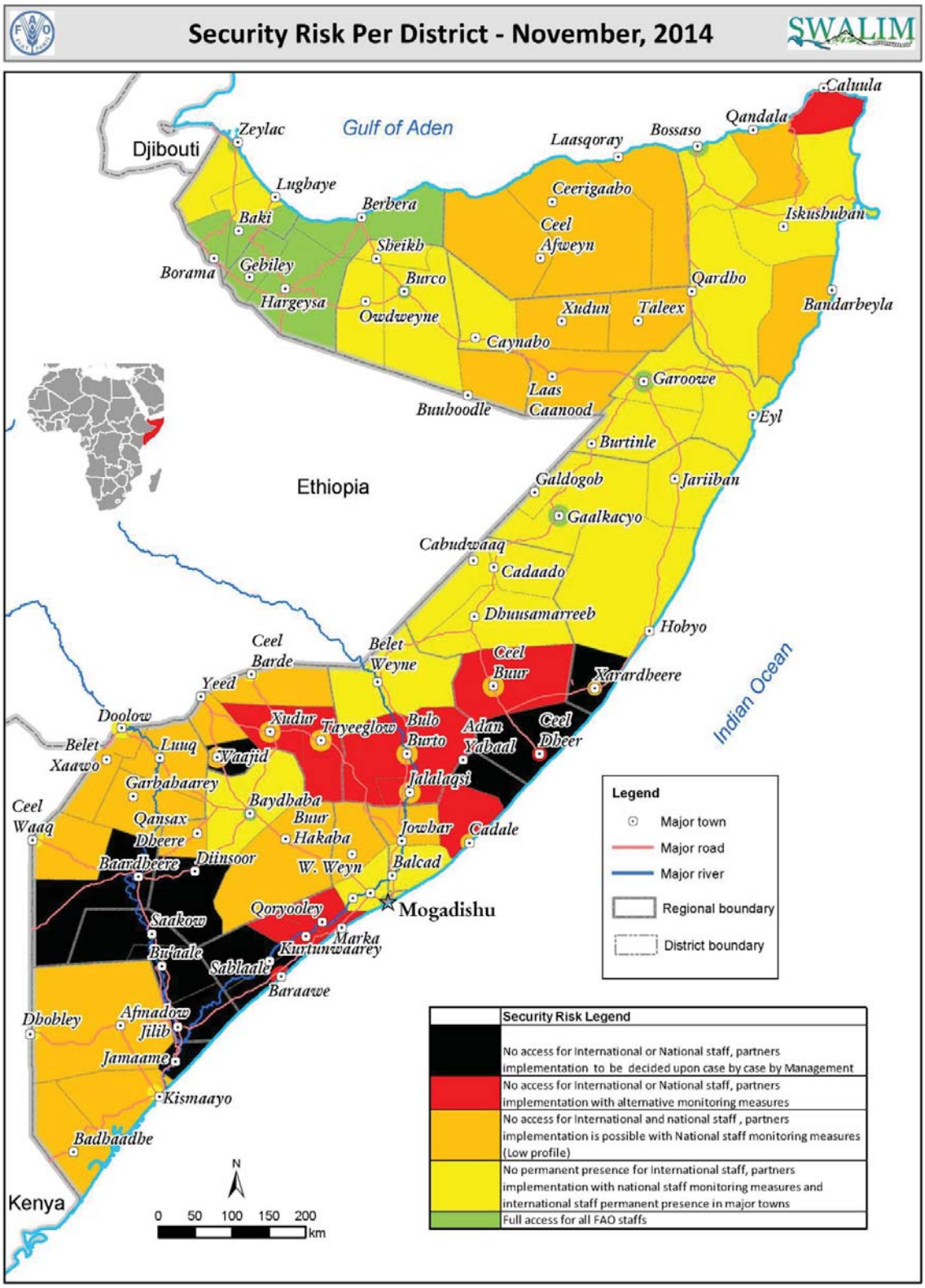
3.4.8 Scheduling gap:

Due to the delayed commencement of NBSAP process (5 years), Somalia is facing the challenge of how to deal with the deadline of Strategic Plan for Biodiversity 2011-2020. Although the planning is done according to this strategic framework and its Aichi targets, however with squeezed timelines and that too in the unpredictable security situation, which may further delay the implementation. Thus the 5 year time of NBSAP implementation is short and the work may spill over well beyond this timeline.

3.4.9 Security/access gaps:

Although the Somali society has proved to be quite robust on the face of prolong instability and the resilience enhancement efforts of the development partners are under way. Nevertheless, the security situation in the country in general and South-Central in particular impeded us in assessing the biodiversity status for the NBSAP process. The consultations were done in triangulated manner, so input gaps were reasonably addressed, however once the NBSAP process is complete the implementation is expected to face setbacks on the face of the security and access issues. At the moment security stability and access situation gets better when we move from south (South-Central) to north (Puntland) and north to northwest (Somaliland). Thus the security map (see Map of Security Risk per District) of the country has to be kept in mind while developing any biodiversity conservation and sustainable use project for Somalia. This doesn't mean exclusion of any area from biodiversity related initiatives, as the deep south has several biodiversity hotspots, but tailoring the NBSAP implementation activities according to the access and security requirements.

Map 10: Security Risk per District



CHAPTER 4: STRATEGY FOR MANAGMENET OF BIODIVERSITY

The Somalia's biodiversity strategy for managing its biodiversity is developed while taking the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Targets.

4.1. Vision, Goal and Objective

Vision for 2050

Somalia's biological diversity is appreciated, restored, conserved and its components are utilized in sustainable manner that contributes to the socio-economic development of the nation.

Goal and Objective

The goal of this NBSAP is to restore Somalia's ecosystems and its biodiversity by 2020. The objective of developing this first NBSAP is to provide a strategic and action framework that systematically rehabilitate and conserve Somalia's biodiversity, enhance the sustainable use of its services and products, and ensure that the benefits and obligations are equitably distributed among various segments of the Somali society.

4.2. Principles Underpinning the Strategy

1. The people of Somalia are entrusted with the ecosystems, its associated products and services and they understand that every form of life is unique and warrants respect from them.
2. The effectiveness of this NBSAP demands conducive environment for policy, legislation and inclusive planning.
3. While following the principle of "Polluters Pays", the users of biodiversity should minimize the environmental impacts as well as consistently invest in replenishing the ecosystems
4. Inter-generational consideration in the use of biological resources is essential for the lasting health of ecosystems and its products & services
5. Attaining political support from all levels (International, National, Regional, District and community level) for the implementation of this NBSAP
6. Adequate maintenance, value-added processing and entrepreneurship, without compromising on the health of ecosystem are the cornerstone of sustainable use of biodiversity.

7. Adapting knowledge based innovations while grafting contemporary scientific and indigenous biodiversity management practices

8. All sectors, stakeholders and local communities that influence biodiversity should plan its conservation according to the National policy

4.3. Strategic Approaches for the NBSAP

1. Embracing of a cohesive and result-based programmatic approach towards integrated biodiversity management

2. Mass scale awareness raising about the current status of biodiversity and its potential for the uplift of Somali people

3. Analysis of the current policy and legislative environment; and developing & adopting conducive policies and legislation for effective biodiversity management

4. Prior to commencing the management of biodiversity, baseline assessment will be carried out and benchmarks for monitoring and review will be put in place.

5. Adapting both in-situ and ex-situ conservation measures in the proposed and existing Protected and Marine Protected areas (see map 11: Protected Areas of Somalia)

6. Encouraging entrepreneurship in community based management towards sustained value added use of products and services stemming from biological resources; this will be attained through tripartite partnership between public & private sectors, and civil society.

7. A consistent and cohesive mechanism for effective interface management of the key actors will be developed and maintained. The forum will work as think tank besides keeping the stakeholders together.

8. The tacit indigenous knowledge will be documented and grafted with the scientific approaches of biodiversity management; this will be catalogued to be readily available for use by the practitioners as well as policy makers.

9. Biodiversity conservation will be mainstreamed in the overall development policies, five years national and zonal plans; this will be facilitated through the planning and international cooperation ministry and environment directorate.

10. Identification and mobilization of conventional and non-conventional financial windows, while commencing from the biodiversity hotspots and expanding to the ecosystems in general

11. Development of an effective response mechanism against the drivers of biodiversity degradation and addressing the gaps in the management

12. Effective reiterative system for knowledge management; communication & outreach will be the cornerstone of biodiversity management in Somalia.

13. Promotion of appropriate incentive measures including clean energy technologies and climate resilient approaches for ecosystems and biodiversity management

14. Adopting concrete measures for strengthening bilateral, regional and international cooperation.

4.4. Main priority areas

The five goals of the global strategic Plan for Biodiversity 2011-2020 are adopted as priority areas to address the pressing issues that affect the biodiversity of Somalia as follows:

1. Adequate understanding of the drivers of biodiversity degradation, adopting response measures in green sector as well as broader development agendas of the government and other key actors (civil society and private sector)

2. Reduce the direct pressures on the biological diversity of Somalia and promote conservation and sustainable use of the component of biodiversity

3. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity in Somalia

4. Enhance the benefits to all from biodiversity and ecosystem services in Somalia, with specific emphasis on marginalized groups

5. Enhancing the implementation of participatory planning, knowledge management and capacity building for biodiversity conservation and sustainable use in Somalia.

4.5. The NBSAP targets

The NBSAP targets are developed in line with the Aichi Biodiversity Targets. Efforts are done to keep these targets strategic, specific, measurable, ambitious; however realistic and generally with the deadline of 2020. They are grouped under the five priority areas of NBSAP. The targets are drafted based on the inputs of the stakeholders in the first series of consultative workshops, whereas these were fine-tuned in the NBSAP finalization workshops with participants from all the three zones (Somaliland, Puntland and South-Central) of Somalia.

Overall strategic framework of NBSAP Somalia

Priority Area 1: Adequate understanding of the drivers of biodiversity degradation, adopting response measures in green sector as well as broader development agendas of the government and other key actors (civil society and private sector)						
Strategic Target 1: By 2022, Somali people are aware of the values of biodiversity and the required steps for its conservation, protection and sustainable use/management.		**Indicators**	**Timeline**		**Cost US$**	**Responsible Institution**
			Phase I	**Phase II**		
1.1	By 2016, communication and outreach strategy for biodiversity with specific focus on the media and academia developed, to be integrated subsequently in the overall mechanism for NBSAP implementation.	• Consultative process with key stakeholders carried out in Mogadishu and interim administrations by 2015 • Marketing/selling the NBSAP to other sectors (beside the environment/green sectors) elaborated • Communication and Outreach Strategy formulated and approved by the Government	2016		150,000	Led by Ministry of Environment together with Ministry of Information & communication
1.2	By 2017, mechanism (with selective implementation commenced) is in place to promote public awareness and understanding of the values of biodiversity and the need for conservation, protection and sustainable use/management	• Information dissemination mechanism on the values of biodiversity (species and ecosystems) and its relevance to human survival is in place. • Communication material (audience sensitive & ecosystem specific) on the current status of biodiversity is developed. • Messages of response actions to restore ecosystems & biodiversity, and the sustainable use of biodiversity products and services developed. • Dissemination demonstrated on pilot scale in Mogadishu and the Interim Administrations through select media	2017		150,000	Ministries of Environment, Ministry of Information and the Sectoral Ministries (Forest, Fishery, Wildlife, Livestock & Range, Agriculture, etc.)

1.3	By 2017, workshops, training, focus group discussions held in both rural and urban centers with the aim of creating immediate awareness	• 3-day training workshop conducted in each zone of Somalia to disseminate information on the status of biodiversity and response actions • Focused group discussions held with policy makers and senior managers in each zone and selecting a cadre of change advocates from them • Training of the change advocates to trigger and sustain the biodiversity awareness and promotion process in each zone of Somalia	2017		200,000	Ministry of Environment
1.4	By 2017, user-friendly compendium of best practices and lessons learnt developed for sustainably managing biodiversity and ecosystems	• Inventory of biodiversity management practices done for Somalia • Analysis of 'what worked and what didn't' for biodiversity in Somalia and the East African Region accomplished • A user-friendly compendium of best practices and lessons learnt developed and the crux is shared in in the awareness workshops at the Zonal and Federal levels.	2017		50,000	Ministry of Environment, together with Sectoral Ministries
1.5	By 2019, media and academia engaged in promoting of awareness about biodiversity	• 5 Training & action planning sessions (2-day each) held for media and academia focal points in each zone of Somalia to understand and disseminate the dynamics of biodiversity. • The Media focal points disseminate the biodiversity degradation and the coping strategies on FM Radio and TV channels • The Academia focal points held series of lectures in selected Universities	2019		150,000	Ministry of information and communication together with Ministry of Environment
1.6	By 2021, curriculum of schools greened, with special focus on	• The current curriculums of schools is analyzed and elements of biodiversity		2021	250,000	Ministry of education, coordinated by Ministry of environment

	biodiversity and ecosystem conservation	and ecosystem conservation integrated • 100 teachers, 20 in each zone, trained to impart the revised curriculum in schools • Test application of the revised curriculum facilitated in 100 schools, 20 in each zone of Somalia.				
1.7	By 2022, the influence of Religious Leaders used for biodiversity conservation and the sustainable use of its products	• 20 Religious leaders engaged in various zones of Somalia to speak about environment and biodiversity with the Islamic perspective • 5 two-day conferences held, one in each Somali zone focused on the significance of biodiversity in Islam. • Compendium of biodiversity and environment related teachings in Islam is developed and disseminating this through media.		2022	170,000	Ministry of religious affairs Ministry of Communication and Information Coordinated by Ministry of environment
1.8	By 2022, rural vocational environmental schools with emphasis on biodiversity and ecosystems set up	• 10 private vocational schools/colleges identified & engaged, 2 in each zone, to impart vocational education related to environment • Environmental Vocational Education material developed with special focus on biodiversity and tested in 5 selected schools/colleges in Puntland, Somaliland and Mogadishu • Environmental Vocational Education piloted in 10 schools/colleges		2022	200,000	Ministry of Labour, Ministry of education and Ministry of Environment
Strategic Target 2: By 2028, at the latest, biodiversity values have been integrated into national and zonal development plans (specifically 5 years plans) and other poverty reduction processes and are being incorporated (as appropriate) into national accounting and reporting systems.						

2.1	By 2016, National and International Partners engaged and partnerships forged for mainstreaming biodiversity in the overall development agenda	• At least 3 multi-partite MOUs signed between the Environment Ministries of Federal Government of Somalia with the following entities: a. Ministries of Fishery, Forestry, Agriculture, Livestock, Energy, Petroleum & Mining, etc. b. the Planning and Finance Ministries c. The International Development Partners (donors, UN, networks, etc.) d. the private sector working with natural resources and biodiversity goods and services e. Media and Academia f. Research institutions	2016		50,000	Ministry of planning & International cooperation Ministry of Foreign Affairs; coordinated by Ministry of Environment
2.2	By 2018, Valuation of Benefits from biodiversity & its products done and the current investment in biodiversity management assessed	• Senior Representative of Finance Ministry is included in the NSC and Biodiversity Roundtable by 2016 • Tools and mechanisms that assess biodiversity in term of social, economic and financial benefits are developed by2017. • The physical inventory of biological benefits associated with ecosystems is developed and corresponding investment is assessed by 2018.	2016 – 2018		160,000	Ministry of Environment Ministry of Planning & International Cooperation and Ministry of Education
2.3	By 2023, biodiversity services and products at the level of Financial Institutions of Somalia mainstreamed.	• The Federal Republic of Somalia and the Zonal governments systematically assess /account of the biodiversity share in the GDP and set aside proportionate finances for its sustainable management by 2019		2016 - 2023	1,800,000	Ministry of Finance and Ministry of Planning Coordinated by Ministry of Environment

		• Biodiversity related financing is doubled to the present level by 2023				
2.4	By 2024, biodiversity at the level of National Development Planning mainstreamed	• Planning & International Cooperation Ministry is represented at biodiversity forums such as NSC, Roundtable, etc. by 2016 • Biodiversity screening check-list developed and adopted by the Planning & International Cooperation Ministry by 2019; • Development projects are screened with this checklist for biodiversity concerns by 2020		2015 - 2024	1,200,000	Ministry of Planning & International Cooperation, coordinated by Ministry of environment
2.5	By 2023, substantial allocation in the National five-year Plan for biodiversity conservation programs included	• Biodiversity related initiatives get doubled to the present level by 2023 in a the National Five-year Plan		2023	1,500,000	Ministry of environment Ministry of Planning
2.6	By 2025, Contribute to the successful implementation of Somali NBSAP By 2025 Somali leaders have included protection and sustainable management in their development plans and providing appropriate financial and human resources.	• Conducted an advocacy campaign to convince Somali leaders to prioritize biodiversity conservation by 2017, • A critical mass of parliamentarian advocates biodiversity conservation by 2020 • Key international development partners included in the biodiversity forums by 2016		2025	2,100,000	Ministry of environment & Ministry of Finance
Strategic Target 3: By 2030, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international						

obligations, taking into account national socio economic conditions.						
3.1	By 2018, the subsidies that damage and/or benefit the biodiversity of Somalia assessed and action plan for addressing these subsidies are formulated.	• Consultations held in Mogadishu and the Interim Administrations with stakeholders including private sector by 2016 • Subsidies that damage or benefit the biodiversity is assessed and the impacts on biodiversity is examined by 2017 • List of biodiversity harming subsidies devised and agreed by 2017 • Action plan for addressing the issue of relevant subsidies formulated by 2018	2016 – 2018		80,000	Ministry of environment Ministry of Commerce and Industry Ministry of Agriculture Ministry of Ports & Telecommunications
3.2	By 2020, the phasing out of subsidies commenced by the Government that damage biodiversity	• Piloted the phasing out aimed at minimum 20% reduction of subsidies harmful to biodiversity by 2020	2016 – 2020		100,000	Ministry of environment, together with relevant ministries
3.3	By 2020, incentives and subsides mechanism devised to benefit the communities that promote best practices to conserve biodiversity	• Envisaged, agreed and approved the incentives and biodiversity friendly subsidies by 2017 • Mechanism is in place to award incentives and biodiversity-friendly subsidies in lieu of services to conserve biodiversity by 2018 • 8 businesses communities selected and awarded for their biodiversity conservation best practices with bio-friendly subsidies/incentives by 2020	2017 – 2020		100,000	Ministry of environment Ministry of Commerce and Industry

3.4	By 2025, mechanism for punishing the companies that promote harmful materials that effect biodiversity & ecosystems is in place, this may include imposing high taxation and/or banning, etc.	• Support cell in the Ministry of Environment is in place that assist the Ministry in preparing cases against biodiversity harming companies/organizations by 2019 • At least 20 cases processed by the court/authorized body by 2025		2017 – 2025	100,000	Ministry of environment Ministry of Commerce and Industry Ministry of Justice
3.5	By 2025, alternative income sources are provided to local communities engaged in charcoal making for their livelihoods. These may include Non-wooded Forest Products, Bee Keeping, collection & recycle waste and sell it to recycling companies, etc.	• At least 20 charcoal business communities identified and converted to biodiversity friendly businesses by 2017 • 50 persons trained in value-added management of Non-wooded Forest Products by 2017 • At least 20 charcoal businesses replaced with small-size biodiversity businesses and 1000 families benefited by 2017 • 2 small scale waste to energy enterprise installed and operational by 2015		2017 – 2025	1,200,000	Ministry of Environment & Planning and International Cooperation Ministry of Commerce and Industry
3.6	By 2022 adequate incentive mechanism for the local community is in place to conserve biodiversity hotspots with potential for tourism in all the zones of Somalia.	• 100 persons trained in biodiversity promoting business focusing on 10 priority hotspots by 2017 • Participatory business plans for 20 community based enterprises developed by 2018 • Initiation grants, $ 10 K each provided to set-up 20 community based biodiversity promoting enterprises 2020 • Biodiversity business are operational by 2022		2017 – 2022	1,600,000	Ministry of Environment Ministry of Local Government, Ministry of Tourism Ministry of Commerce and Industry

3.7	By 2021 subsidies will be given to companies of LPG gas, Solar and other energy sources companies who are environmental & biodiversity friendly	• 5 companies awarded on competitive bases for providing subsidized alternative energy sources to charcoal dependent communities • 200 community organizations provided with alternative energy on 50% reduced prices • 200 community organizations reduce the deforestation in their respective areas by 20%		2021	6,000,000	Ministry of Environment Ministry of Industry and Commerce Ministry of Agriculture Ministry of Fisheries and Marine Resources Ministry of Livestock, and Pasture
3.8	By 2030 all the harmful subsidies are completely phased out and/or measures are taken to provide biodiversity friendly substitute where phasing out of subsidies is not possible.	• Alternative biodiversity friendly subsidies are provided for essential substances and services by 2025 • All the harmful subsidies to biodiversity are completely phased out by 2030		2030	1,000,000	Ministry of Environment Ministry of Industry and Commerce
Strategic Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.						
4.1	By 2017 government facilitate the interface with business enterprise and communities to commence the demonstration of conservation and sustainable use of biodiversity resources in all representative eco-regions of Somaliland.	• Biodiversity Round Table formed and functional with representative of business enterprises, community, government to steer the interface between the key stakeholders by 2016 • Generic tripartite terms of partnership (TToP) developed and endorsed by the Biodiversity Round Table (BRT) by 2017	2017 -17		50,000	Led by Ministry of Environment, with the of support Ministry of Planning and International Cooperation
4.2	By 2016, Somali government commence the implementation of resource mobilization strategy	• Resource mobilization strategy outlined that covers both conventional and non-conventional donors and endorsed by	2016		500,000	Led by Ministry of Environment, with the of support Ministry of Planning and International

	formulated as support document to this NBSAP	2015				Cooperation
4.3	By 2018 development partners and stakeholder should make a priority for funding biodiversity and ecosystem conservation programs	• 5 Project Proposals developed for priority biodiversity hotspots conservation and development by 2016 • At least 2 project approved by the donors by 2018	2018		200,000	Ministry of Environment & other key stakeholders
4.4	By 2018 government and business enterprises should work in a cooperating manner to promote biodiversity conservation through terms of partnership for selected initiatives such as joint promotion of companies that recycle waste; and promote the value added and sustainable use of biodiversity products and services.	• At least 5 TToPs signed by Government, Community Organizations and Business Enterprises for undertaking joint biodiversity friendly businesses by 2020	2020		1,000,000	Led by the Ministry of Environment together Zonal Ministries, Private Sector and selected community organizations
4.5	By 2020 business enterprises and government shall promote companies that can demonstrate the sustainable management of biodiversity products and services.	• Business promotion and outreach mechanism formulated under the overall guidance of BRT by 2018 • Business promotion is embedded in the CEPA strategy by 2018 • At least 3 biodiversity promoting businesses awarded with special recognition by the BRT by 2020	2020		1,000,000	Ministry of environment and Planning & International cooperation and Private Sector
Priority Area 2: Reduce the direct pressures on the biological diversity of Somalia and promote conservation and sustainable use of the component of biodiversity						
Strategic Target 5 : By 2025, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.						

5.1	By 2016, the Zonal governments commence the stock taking of its renewable natural resources both terrestrial and coastal and complete this by 2017.	• Baseline assessment of 10 potential biodiversity hotspots (6 terrestrial and 4 coastal/marine) carried out by 2017, that include biological and demographic aspects both	2015-2017		1,500,000	Environment and line ministries of the Federal Government of Somalia as well as the Interim Administrations
5.2	By 2016, concrete steps are planned for reducing the loss of natural habitat are taken that include addressing the drivers including, but not limited to, charcoal led deforestation, invasive species, rangelands degradation, mangrove & coral reefs degradation, institutional limitations, etc.	• Participatory ecosystem based land-use plans are developed for 10 potential hot spots addressing the drivers with joint enforcement and alternatives provision by 2017	2016		1,500,000	Environment and line ministries
5.3	By 2017, the efficacy of existing protected areas is adequately assessed and additional protected areas both terrestrial and marine are notified.	• The efficacy of 4 existing protected areas assessed by 2016 • At least 20 protected areas/natural reserves notified by 2017	2017		1,000,000	Environment and line ministries
5.4	By 2025, Eco zone specific rehabilitation/conservation schemes demonstrated through the domestic and ODA (both multilateral and bi-lateral) financial windows	• At least USD 20 million mobilized for the rehabilitation of biodiversity in Somalia through ODA and non-conventional financial windows • At least 5 innovative biodiversity rehabilitation/conservation projects are on the ground by 2020		2017-2025	20,000,000	Environment and line ministries
5.5	By 2025 at least 70% of all the Protected Areas (PA) and Marine Protected Areas (MPA) are effectively managed and the dossier for at least 5 representative protected areas are prepared as Biosphere Reserves under the Man and Biosphere (MAB) Programme of UNESCO	• Effective management is in place at least in 70% of the notified protected areas (both Marine and Terrestrial) by 2020 • Dossiers for MAB are prepared and submitted to UNESCO for at least 5 protected areas representing each eco-zone by 2025		2016-2025	7,000,000	Ministry of Environment and other relevant sectoral Ministries and Ministries of the Zones

5.6	By 2025, the loss of the five representative habitats of Somalia and its coastal zone is reduced by 40% compared to the present situation through series of interventions	• Rehabilitation of 5000 km2 degraded rangelands such as those affected by moving sand dunes, water erosions, overuse, etc. • Establishment of integrated biodiversity projects in all the representative terrestrial and marine/coastal eco-regions, • Create alternative livelihoods and income generation activities through skills training and development of innovative entrepreneurship for 20,000 households.		2016-2025	25,000,000	Ministries including the private sector
Strategic target 6: By 2030 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.						
6.1	By 2027, while focussing on 8 MPAs along the coast of the Juba land, Mogadishu, Puntland and Somaliland, coastal resources such as crustaceans, mangroves, coral reefs, etc. are sustainably managed and the on-going degradation is reduced by 80% through integrated coastal resources management in general and community based	• By 2018, Strengthened the capacity of fishery department, coastal community organizations and associated private sector companies in integrated sustainable resources management that focus on conservation, value added sustainable use and fair & transparent distribution of benefits and obligations arising from the management of coastal biodiversity,		2016-2027	30,000,000	• Environment Ministries • Ministry of Fisheries and Marine Resources • Private sector • Ministry of Ports and Marine Transport • Ministry of Planning and International Cooperation

	interventions in particular.	• By 2018, a cadre of 50 master trainers developed skilled in integrated coastal resource management • By 2017, a manual in integrated coastal resource management with series of training module developed for master trainers • By 2027, restored the coral reef areas, bird sites, mangroves and sea-grass areas in Mait, Sa,adudin & Eibad island, Khora Shora and Laskorey areas in Somaliland, Ras Asyer, Caluula and Hafuu complex in Puntland, and Barrier Islands and the delta & swamps of Juba & off-Shebelle river in South-Central Somalia. • By 2020, social services provided for Coastal people in Mait Island (RABSHI) Sa,adudin & Eibad island, Khora Shora, Laskorey, Hafuu and Caluula areas • By 2025 appropriate conservation and sustainable management infrastructures provided in at least 2 sites along the coast for the integrated coastal resources management.				
6.2	By 2030, all marine resources including aquatic plants are soundly managed and harvest sustainably through reducing illegal fishing and waste disposal by 80% and applying conservation measures which will	• Strengthening the capacity of PMPF and increasing their number into 6 thousand by 2025 • Restoration of coral reef areas through mangrove plantations in 500 hectares, pollution control by		2016-2030	25,000,000	Ministry of Fisheries and Marine Resources Ministries of Environment and other sector Ministries

	encourage recovery plans for endangered and threatened aquatic species	stopping the sewage flow in Mangrove and coral areas of south of Mogadishu by 2025 • Integrated conservation measures carried out in Alula and Qandala, Barrier island and other relevant coastal areas by 2027 • Provide social services for Coastal people in Eyl, Qandala, Lasqoray, Alula, Hafuu, Ras Asyer areas by 2022 • Develop infrastructures of coastal areas to support community based coastal area resource management by 2030.				
Strategic Target 7: By 2030 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.						
7.1	By 2030, Bringing at least 25 % areas under sustainable agriculture aquaculture and forestry in each of the 5 representative eco-regions of Somalia by diversifying the management regimes	• Integrated watershed management is in place in at-least 5 representative catchments by 2022 • Rehabilitation of natural vegetation, water & soil conservation and water harvesting is in place in at-least 10 degraded sites by 2025, • climate smart agriculture is demonstrated in at-least 12 sites and replication is promoted by 2020, • In Juba and Shebelle areas the indigenous genome/agriculture varieties conservation is adopted by 50 progressive farmers, with systematic outreach in place by 2021, • Establish 20 demonstrate sites of		2017-2030	30,000,000	Miniseries of Environment, Forest & Wildlife, Agriculture, Livestock, Fisheries, Water

		appropriate agro-forestry in Cowpea belt, Galgala, Jibagalle, Lasa roh and Juba and Shebelle areas • At least 10 community based integrated aquaculture is demonstrated in lower Shebelle, Juba, Zyelic, Ras Hafun and Berbera by 2022 • 10 agricultural crops diversification demonstrations established • Establish salt & drought tolerant crops in at least 10 sites in arid zones of the North and Northeast by 2022 • A cadre of 50 expert (master trainers) developed in sustainable aquaculture, forestry and agriculture by 2020 • Training material include manuals and modules (covering the overall spectrum of sustainable land use practices) developed to be imparted by the master trainers by 2019 • Communication and outreach mechanism for mass-scale promotion and replication in place by 2025,				
7.2	By 2030 arrest deforestation for Charcoal making by 50% with the adoption of the two-track approach of a. Incentives and enforcement and b. REDD + implementation	A. Incentives and Enforcement • Systematic assessment/monitoring of charcoal based deforestation by 2017 • Promoting alternatives e.g. renewable energy, value-added Non-wooded Forest Products, to the local communities, people for charcoal burning by 2018 • Legislative & Institutional strengthening and enforcement measures for large charcoal scale production meant for		2017-2030	20,000,000	• Ministry of Environment, • Ministry of Forest, Livestock, Range, Wildlife, • Ministry of Electricity & water • Private sector • Local communities • • Ministry of Justice Law enforcement agencies

		export/trafficking by 2020 B. REDD + implementation • Demonstration activities in place and REDD+ strategy piloted by 2022 • REDD+ implementation is in progress and reduction of carbon emissions is measured reported and verified by 2028 • Somalia has started earning incentives for carbon emission reduction by 2030 from at least 3 REDD+ implementation areas				
Strategic Target 8: By 2025, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.						
8.1	By 2020 toxic waste along the Somaliland coast line are properly assessed and measures for abating this pollution are in place. This includes both terrestrial and marine/coastal pollution.	• Institutional arrangements to assess and abate pollution in place by 2018 • Systematic assessment of the pollution, its sources and abating requirements is done by 2019 • Abating measures that include site clearing, source management, and legislative & enforcement arrangement are in place by 2020 •	2018 – 2020		1,000,000	Ministry of Environment
8.2	By 2025, Toxic disposal in Somali marine water including from excess nutrients load, have been brought close to levels that environment can absorb, sink and not harmful to ecosystem function and biodiversity productivity as well. •	• Strengthening the capacity of Marine Fisheries and increasing their number by another 40% by 2025 • At least 10% reduction in use of fertilizers for agriculture in Shebelle & Juba basins as well as in Somaliland by 2022 • Reduced the use of pesticides by 30% and demonstrated and promoted the		2020 – 2025	1,500,000	• Ministry of Fisheries and Marine Resources • Ministry of Environment • Ministry of Agriculture

		use of Integrated Pest Management to the effectively substitute the use of pesticides by 2022 • Policy and strategies developed to manage solid waste for larger towns such as Hegiesa, Berbera, Bosasso, Garowe, Mogadishu, Baidoa and Kismayo by 2020. • Plans developed and implementation initiated for avoiding nitrogen deposition in coastal areas in general and marine biodiversity hotspots by 2020 • Vegetation cover for bare areas in Dabar valley areas and other watersheds that actively drains into marine biodiversity hotspots is enhanced by 25% • Pollution brought to 30% of the current level by 2025				
Strategic Target 9: By 2027, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.						
9.1	By 2027, expansion of Prosopis (invasive specie prioritized for control) arrested through systematic management	• Assessed the nature and extent of the Prosopis invasion for each zone and its nexus with biodiversity understood by 2017 • A cohesive Management Plan for Prosopis is prevention and containment as well as its promoting its use is in place by 2018 • Alternative uses promoted by 2020		2017 – 2027	7,000,000	Ministry of Environment Ministry of Agriculture Ministry of livestock and pasture Private sector

		with focus on following: a. Use as hardwood post, poles and furniture b. Use of Prosopis for charcoal and has replaced Acacia buse by 40% by 2022 c. Potential for bio-fuel explored and demonstrated by 2022 d. Promoting Prosopis as animal feed • Prosopis management demonstrated in three zones of Somalia with focus on prevention, containment and promoting alternative uses in Somali regions of high infestation by 2019 • Research and networking in a transboundary manner initiated (networking with other countries of the region established by signing MoU) by 2018 • Technology for use and control of Prosopis assessed and adopted 2018 • The role of private sector to turn Prosopis utilization into businesses is assessed and private sector brought on board 2019 • National land use planning and has taken into account Prosopis management by 2020 • Prosopis expansion arrested by 60% till 2027				
9.2	By 2026, invasive alien species such as Indian Crow and other avian, etc. are eradicated by 30% and put in place measures that can prevent their	• A monitoring and assessment mechanism is in place by 2017 • The nature and extent of Indian crow and other invasive animal/bird species		2017-2026	5,000,000	Coordinated by Ministry of Environment together with other relevant institutions

	introduction and establishment.	are assessed and management plan in place by 2018 • Awareness and capacity building mechanism to promote self-help towards alien species management and eradication is in place by 2019 • Innovative and promising interventions which can control invasive species and finally eradicate are demonstrated in prioritized sites by 2020 • The eradication is demonstrated in selected sites and the large scale eradication/management is planned by 2020 • By 2026 at least 20% of the invasive species are eradicated and the control mechanism of 40% of the prioritized invasive species is in place				
Strategic Target 10: By 2025, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning						
10.1	By 2025, the multiple anthropogenic pressures on coral reefs near Zylic, Berbera, Khorshoray and Kismayo on the Somali coast and the Junipers forest of Golis range that are affected by climate change is diminished by 30%.	• Baseline assessment and identification of the source of anthropogenic pressures by 2016 • Capacity building of concerned staff and setting the demonstration of pressure by 2017 • Mainstreaming the reduction of anthropogenic pressures in the climate change policies, strategies (e.g. NAPA, etc.) by 2016		2016 - 2025	5,000,000	Ministry of Environment Ministry of fishery, line ministries and private sector

		• Anthropogenic pressure are diminished by 30% in the vulnerable ecosystems (Golis and integrated coastal areas management in the fragile coastal/marine hotspots of Somalia) by2025.				
10.2	By 2024, the multiple anthropogenic pressures on coral reefs, mangroves and coastal forest mosaic ecosystems affected by climate change diminished by 40% so as to sustain their integrity and functioning.	• Management plan developed and capacity built for Fishery management through ecosystem approach by 2018 • Demonstrate Ecosystem approach to Fishery management in Alula, Eyl, Lasqoray and Bosaso districts of Puntland; and Banadir, Mogadishu and Kismayo areas in South-Central Somalia by 2023. • Protection of climate impacted ecosystems such as Dharor valley, coastal areas like Hafun, Eyl, and Benderbayla by 2020. • Demonstration of integrated coral and mangrove conservation in Kismayu by 2023 • Introduction and restoration of mangroves in Hafun, Alula and Qandala and sustainably managing the mangroves of the Kismayo coast and Barrier Islands off-the coast by 2024		2017 - 2024	15,000,000	Ministry of fishery and marine resources Private sector Ministry of Environment
Priority Area 3: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity in Somalia						
Strategic Target 11): By 2026, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are						

conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.						
11.1	By 2025, at least 20 per cent of terrestrial and inland wetlands of lower Shebelle and Juba rivers are effectively and equitably managed.	• While focussing on the wetlands/marshes of Lower Shebelle and lower Juba area • Declaring these hotspots as Protected Areas by 2016 • Systematic Assessment including current status, driver of degradation, technology/skills requirements for conservation of these wetlands accomplished by 2017, • Capacity building including skills enhancement and adequate staffing by 2019 • Policy and strategic directions for wetlands conservation & development accomplished by 2017 • Awareness raising about the importance and productive & sustainable use of wetlands by 2018 • Land-use planning done to secure the watershed & water sources of these wetlands by 2018 • Promotion of sustainable artisanal fishery in lower Juba and Shebelle rivers and its wetlands by 2019Demonstration of conservation & development of these wetlands into productive and sustainable		2020-2026	15,000,000	Ministry of Water and Electricity Ministry of Fisheries and Marine Resources Ministry of Agriculture Ministry of Environment

		ecosystems by 2020 • Demonstration and mainstreaming of water conservation practices in the lower and upper riparian of these wetlands by 2020 • Reducing quantity of waste drained into these wetlands by 2020 •				
11.2	While focusing on mangrove & coral ecosystems of a. South of Kismayu, b. Ras Asyer near the Horn of Africa, c. Mangroves east of Berbera and d. Zylec & Saada Din Islands near the border of Djiboti, by 2025 at least 40 per cent are conserved & protected through effective and equitable management.	• These hotspots are notified as Marine Protected Areas by 2016 • Manual for training prepared and 60 Master trainers developed by 2017 • The current status and degradation drivers are adequately assessed by 2017 • 4 Participatory Management Plans for integrated coastal ecosystem are developed by 2017 • Skills in Integrated Coastal Ecosystem including in-situ conservation of mangroves imparted to 300 staff of relevant ministries and community organizations by 2018 • Finances mobilized by 2019 • Integrated Coastal Ecosystem Management is commenced by 2019 • Current staff of the zones are doubled by 2019 • Sustainable Fishery practices in these areas promoted and unsustainable fishing practices reduced through enforcement and alternative provision by 80% till 2025		2016-2025	3,000,000	Ministry of Fisheries & Marine Resources,, Ministry of Environment Ministry of Forest & Range
11.3	By 2025, at least 25% of terrestrial & inland water resources	• Coastal Community mobilized and management plan developed by 2017		2017 – 2025	6,000,000	Ministry of Water and Electricity Ministry of Forest & Range,

	rehabilitated and managed (this includes; watershed management, water catchment rehabilitation)	• Integrated Watershed Management demonstrated in Golis mountains by 2025 • Essential capacity built to replicate this on larger scale by 2022				Ministry of Environment
Strategic Target 12: By 2030 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.						
12.1	By 2030, extinction of threatened species prevented and their status improved and sustained by specifically focusing on four MPAs of the coastal belt and 8 PAs of the Golis mountain range; Sool, Karkar, Sanag & Bari areas (wild cat zone), Northern Zanzibar-Inhambane Coastal Forest Mosaic, Acacia – Commiphora zone and the Juba-Shebelle Swamps will be focused with revival of PAs and MPAs in these areas. Agriculture biodiversity will also be focused, with representative species & varieties.	• By the end of 2016, a comprehensive and participatory management planning process is initiated • Exact status of various key wild fauna and flora is assessed in representative eco-regions with special reference to threatened species by 2018. • By 2019, management plans for representative PAs & MPAs to reverse the endangered status is in place with flagship species notified • Concrete steps for capacity enhancement and reinforcement of implementation and enactment arrangements is in place by 2021. • By 2021, Degazzate (5) previous rangeland enclosures and other demarcated sites for ecological protection and conservation is in place • By 2022, implementation of the management is in place • By 2030, 35% of the forest canopy restored; endemic threatened species of Acacia, Angel tree species and other flagship fauna and floral species		2016 – 2030	30,000,000	Ministry of Planning and International Cooperation and Ministry of Environment Ministry of Agriculture Ministry of Livestock, Forest & Range Relevant ministries of the Puntland and Somaliland, Shebelle & Juba Interim Administrations Somalia Marine Research Resource Center CBOs & NGOs and Academia

		regenerated/restored, afforested and reforested.				
Strategic Target 13: By 2022, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.						
13.1	By 2018, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is assessed and road map for sustainable management is in place	• By 2017, the status of Non-wooded Forest Products (NWFP) such as Frankincense, Myrrh, medicinal and aromatic plants of the Golis range in Somaliland & Puntland assessed • By 2017, the genetically diverse cultivated plants and farmed & domesticated animals of Somalia is systematically assessed • By 2018, elaborate plan for sustainable management of these resources is in place, and management plan is shared and approved. • By 2018, the capacity & resource requirements of sustainably is systematically mapped	2017 – 2018		1,000,000	• Ministry of Livestock Forestry & Range • Ministry of Environment • Ministry of Agriculture, • Academic institutions, • Private sector
13.2	By 2022, the implementation together with requisite capacity and resources are in place to conserve and safeguard the genetic diversity of the domesticated & cultivated species and their relative in the	• By 2017 business plan developed and agreed, and mobilization of stakeholders done • By 2019, the required financial resources and institutional capacity to implement the plan for sustainably		2017 – 2022	500,000	• Ministry of Finance Ministry of Planning & International Cooperation • Ministry of Environment • Ministry of Livestock, Forests & Range

	wild.	managing the genetically diverse cultivated plants and farmed & domesticated animals are acquired • By 2019, the implementation of the management plan is commenced with special focus on institutional strengthening and demonstrating the pilot initiatives. • By 2020, improved management of Frankincense, Myrrh & other tree species including the Commiphora is in place • By 2022, exploitation and developing strategic marketing routes and protected pricing are in place. • By 2022, at least two sophisticated Gene Bank and seed bank established to keep and maintain the different genes and seed species restored in these banks				• Ministry of Commerce and Industries • Private sectors, • NGOs/CBOs
Priority Area 4: Enhance the benefits to all from biodiversity and ecosystem services in Somalia, with specific emphasis on marginalized groups						
Strategic Target 14: By 2025, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.						
14.1	By 2016, ssystematic assessment of the distribution and access of benefits and obligation arising from the use of biodiversity in Somalia	• The current institutional arrangements related to the access and distribution of benefits & distribution of resources (products and services emanated from the ecosystems and associated	2016		200,000	Led by Ministry of Environment Ministry of Women and Human Rights Ministry of Planning and International Cooperation

		biodiversity) is assessed by 2016 • The needs and access of the women, poor, vulnerable/marginal groups, unemployed youth, indigenous groups, nomads is assessed by 2016 • The role of marginal & vulnerable segments of the Somali society in managing the ecosystems is assessed by 2016. • The root-causes that impedes the distribution to be equitable is assessed by 2016				Ministry of Livestock and Pasture Relevant Ministries of Somaliland, Puntland, IASW, Juba Land
14.2	By 2018, the norms for just distribution of benefits and obligations within the society is invoked and institutionalized;	• By 2017, document and institutionalize the indigenous knowledge (tacit knowledge) and assess the best practices and lessons learnt related to the equitable resource sharing practices of the local community is documented • By 2018, arrangements with the community leaders & Government are made to institutionalize the best practices about just distribution of benefits and obligations	2017 – 2018		300,000	Do
14.3	By 2025, the distribution and accessibility of the ecosystems that provide essential services is improved by 35% from the current level, with particular focus on the vulnerable groups (poor, vulnerable, women, unemployed youth, indigenous groups, nomads)	• By 2020, the mechanism for access to benefits and equitable distribution of benefits and obligations is in place. • Arrangements to monitor the observe the distribution is place by 2020 • The distribution is demonstrated in all Government led projects and initiatives commencing by 2020		2020 – 2025	250,000	Do
Strategic Target 15: By 2030, ecosystem resilience and the contribution of biodiversity to carbon stocks has been		By 2019, the Federal Republic of Somalia and the Zonal governments mobilizing proportionate funding from the				

enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.		international community through multiple windows including carbon credits is accessed and the implementation of selected initiatives is commenced.				
15.1	Initial assessment for REDD + is in place by 2016	• By 2016, the carbon stock assessment in the Golis range of Puntland & Somaliland, Northern Zanzibar – Inhambane Coastal Forest Mosaic of South-Central and Mangrove zone of selected sites of Somalia is done; selected areas under intensive agriculture is also assessed with respect to contribution to GHG emissions and/or affected by climate change	2016		500,000	• Ministry of Agriculture, • Ministry of Environment • Ministry of livestock and pasture
15.2	• By 2020 a readiness programme for Reducing Emissions from Deforestation and Degradation of Forests (REDD) is commenced and 5 areas under Golis Junipers, Acacia – Commiphora bushland and Northern Zanzibar-Inhambane Coastal Forest Mosaic ecoregion of South-Central Somalia, and 2 site for Mangrove forests are set aside for REDD implementation in various zones of Somalia.	• Somalia national REDD+ implementation framework in place by 2018 • REDD+ national strategy prepared by 2019 • Capacity built for REDD+ and Forest Reference Emission Level developed and tested by 2020 • National Monitoring, Reporting & Verification system in place by 2020	2017 – 2020		1,000,000	• Ministry of Environment, • Ministry of Forest, Livestock and Range • Ministry of Agriculture • Ministry of Planning & International Cooperation
15.3	• By 2018, Resilience to climate change in Agriculture sector is initiated are	• By 2018, a climate smart agriculture programme for selected intensive agricultural areas is in place with the two fold objective of both climate	2016 – 2018		2,000,000	• Ministry of Agriculture • Ministry of Environment • Private Sector and Research Institutions

		change mitigation (reducing the agri-based GHG emissions) and adaptation to the negative effects of climate change.				
15.4	• By 2030, at least 33% of the degraded coastal forest restored and re-afforested –Mangroves (up to 40% of carbon sequestration) • By 2030, 30% of the terrestrial forest are enhanced through afforestation & re-afforestation (with 17-25% carbon sequestration)	• By 2020, preparedness for REDD+ is sufficiently attained • By 2020 implementation of REDD+ is in place • By 2030, at least 30% of the degraded mangrove forests, coral reefs and other coastal biodiversity spots are restored and the management plan of the carbon stock enhancement to 20% is kicked off, with specific focus on carbon sequestration • By 2030, management plan for enhancing 15% of the carbon stock in the Golis and other forest type is commenced. This include measures such as protection, afforestation & re-afforestation, community based integrated development for those community who predominantly depend on forest products and provision of alternative energy & livelihoods		2020 – 2030	20,000,000	• Led by Ministry of Environment • Ministry of Planning & International Cooperation • Ministry of Forest, Livestock and Pasture • Ministry of Agriculture • Private Sector • Research Institutions • CBOs and Communities
Strategic Target 16: By 2018, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.						
16.1	By 2016, Somalia becomes party to the Nagoya Protocol	• The Federal Government of Somalia has ratified Nagoya Protocol by 2016 • The Federal Government of Somalia	2016		50,000	• Ministry of Environment • Ministry of Planning and International Cooperation

		has notified a focal point for Nagoya Protocol by 2016				
16.2	By 2018, Nagoya Protocol is Operational in Somalia	• Essential alignment within the national legislation done by 2016 to enforce the Nagoya Protocol • Access to genetic resources and its fair & equitable distribution is enforced by 2018	2016 – 2018		50,000	• Ministry of Environment • Ministry of Justice • Ministry of Planning and International Cooperation
Priority Area 5: Enhancing the implementation of participatory planning, knowledge management and capacity building for biodiversity conservation and sustainable use in Somalia.						
Strategic Target 17: By 2015, Somalia has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.					500,000	
17.1	By 2015, through a bottom-up approach of local biodiversity strategies and action plans of Puntland and Somaliland are finalized	• Commenced in 2014, LBSAPs for both Somaliland and Puntland are drafted and finalized by 2015	2014 – 2015			All key stakeholders
17.2	By 2015, the consultation process for LBSAPs of Puntland and Somaliland is complete and NBSAP Somalia is articulated on the bases of the two LBSAPs	• The LBSAPs of Puntland & Somaliland are incorporated in the NBSAP by 2015	2015			All key stakeholders
17.3	By 2015, the NBSAP Somalia is finalized and endorsed by the Federal Republic of Somalia and adopted by the Government (both national and zonal) as policy document for biodiversity conservation and sustainable use.	• The finalization consultations are done in Zones and Mogadishu by 2015 • NBSAP Somalia is endorsed by the Government of Somalia by 2015 • NBSAP presented to GEF and CBD Secretariat by 2015	2015			All key stakeholders
Strategic Target 18: By 2020, the traditional knowledge, innovations and						

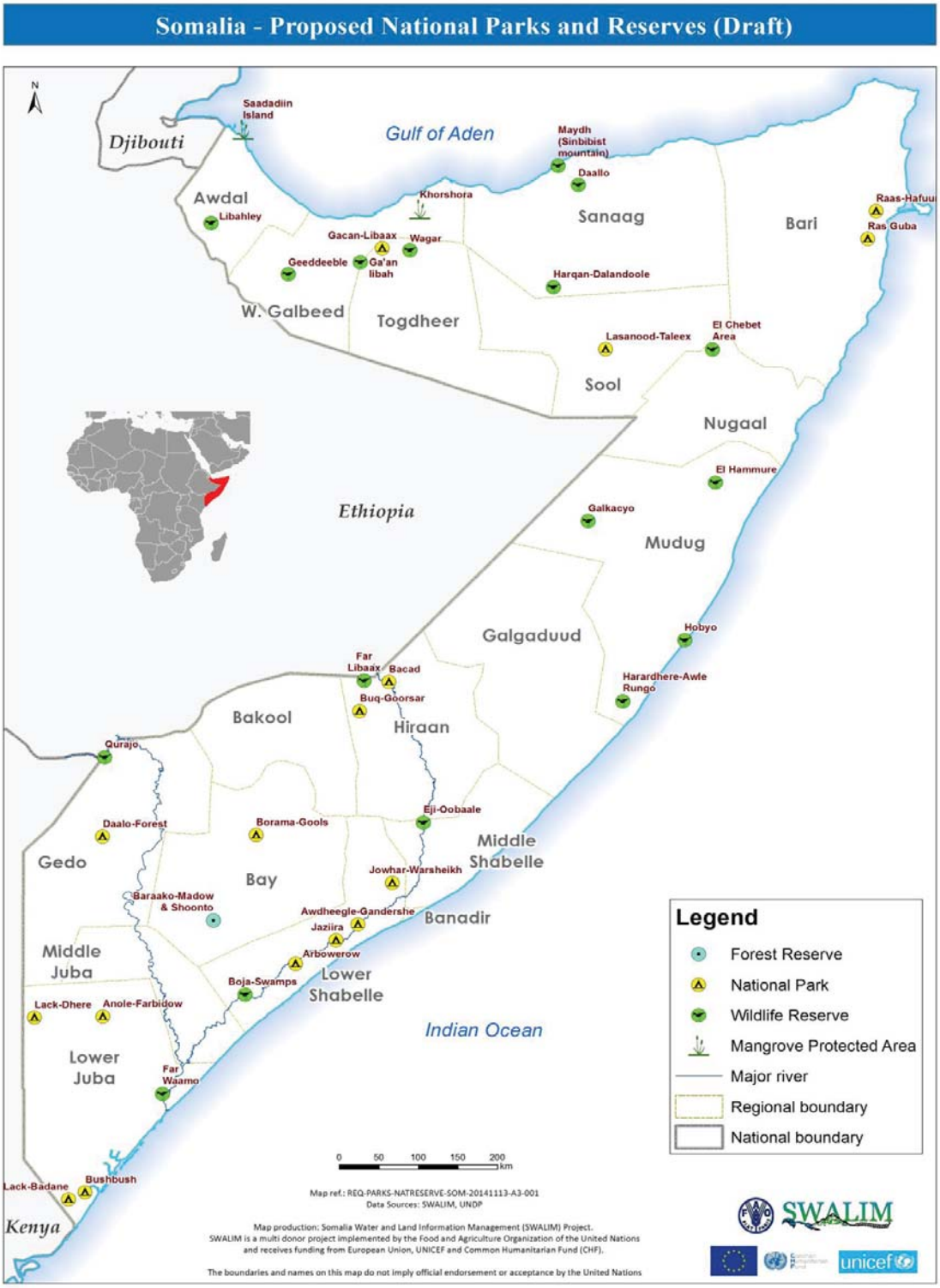
practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.						
18.1	By 2015, in Puntland, Somaliland, Shebelle area and Mogadishu the compatibility of traditional knowledge and biodiversity management practices are assessed with reference to its grafting in the government sponsored management system and the prevailing knowledge stream	• 6-day workshop with community representatives held to assess biodiversity related indigenous management practices • Workshop report produced and endorsed by 2015 • Impact assessment of indigenous management practices on various sectors of biodiversity such as forest, ranges, etc. accomplished by MoEWT of Puntland by 2015 • 2-day workshop at Baidoa for Shebelle area held and biodiversity related indigenous management practices assessed by 2015 • The customary use (both de-jure and de-facto) of biological resources is assessed and the gaps are addressed adequately through policy revisions by 2018.	2015 – 2018		150,000	• Ministries of Environment, Ministries of Forest, Livestock, Pasture, Wildlife , Agriculture, • Environmental research institution, • Ministry of Education, • NGOs and Community organizations
18.2	By 2017, these elements are incorporated in the Local Biodiversity Strategy and Action Plan	• The indigenous management practices articulated and the crux is incorporated in the NBSAP by 2015 • Indigenous management practices	2017-2018		200,000	Environmental Institution, Ministry of Planning, and Stakeholders

		reflected in Projects for biodiversity conservation and sustainable use				
18.3	By 2020, the grafted management knowledge and practices are mainstreamed in the demonstration projects and initiatives	• The knowledge of indigenous management practices incorporated in Management plans of 4 Protected Areas and 2 Marine Protected Areas by 2020.	2020		100,000	• Ministries of Environment, Ministries of Forest, Livestock, Pasture, Wildlife , Agriculture, Environmental institution, • Ministry of Education, • NGOs and Community organizations
Strategic Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.						
19.1	• By 2016, In Mogadishu, Somaliland, Puntland, South West and Juba Regions the knowledge and technology gap assessment is done with reference to requirements for sustainably managing biodiversity (both conservation and sustainable use of biological resources and products)	• Systematic capacity needs assessment conducted and a concerted capacity development strategy formulated by 2016 • The technology requirements are ascertained for the effective implementation of the NBSAP Somalia by 2016	2017		250,000	Environment, Ministry of Livestock, Ministry of fishery and Stakeholders
19.2	• By 2017, mechanism for technology transfer is in place	• A cadre of 50 experts trained in modern technology of biodiversity conservation by 2018 • The knowledge of modern technology disseminated to relevant sectors of biodiversity by 2018	2017-2019		1,000,000	• Ministry of information and communication, • Ministry of Commerce, • Ministry of Education, • Ministry of Environment and other Stakeholders
19.3	• By 2020, essential modern technology and knowledge is	• Modern technology demonstration is commenced in four initiatives each in	2020		3,500,000	• Ministry Of environment • Ministry of education

	demonstrated in at least four initiatives each in one eco-zones	one terrestrial eco-zones by 2020 • Modern technology demonstration is in place in the management of at least 2 Marine Protected Areas by2020				• Ministry of information & communication
Strategic Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.						
20.1	• By 2015, in Somalia, the exact resource requirements for sustainable biodiversity management will be assessed and resource mobilization strategy is in place. This will also include the current resource availability for biodiversity conservation and sustainable use.	• Targets and Indicators for biodiversity conservation developed by 2015 • Consultations held with all the zones by 2015 for resource requirements and associated source identification. • Resource mobilization strategy formulated by 2015	2015-2017		150,000	• Ministry of Environment and • Ministry of planning
20.2	• By 2020, resource mobilized through a three track approach: a. mobilizing resources through the local resources such entrepreneurs, private companies, government resources, diaspora, charity groups, etc. b, through enhance value-added management of the	• Sufficient resource mobilized to demonstrate biodiversity conservation in 6 PAs and 4 MPAs by 2019 • The resource is at least doubled to the present resource availability by 2020.	2015-2020			• Ministry of information Ministry of Environment and • Ministry of planning and Cooperation

	biodiversity products and services and c, convention bi-lateral and multi-lateral donors.					
20.3	• By 2019, substantial finances mobilized from conventional and non conventional	• By 2016, 10 project proposals for 6 PAs & 4 MPAs are developed targeting multi-donors trust funds such as GEF, Green Climate Fund, BioFin, etc. • By 2016, 4 projects developed and submitted to bi-lateral donors and private sector	2016 - 2019		500,000	• Ministry of Planning & Intl cooperation, Ministry of foreign Affairs, • Ministry of Finance • Ministry of environment
20.4	• Partnership forging with UN agencies aiming at the complementarity of interventions should be done, such as UNDP working on climate change (so climate smart agriculture and other climate change adaptation intervention should be jointly designed, with of without mutual transfer of finances).	• By 2018, at least one joint project by multiple UN agencies contributing to the three conventions (CBD, UNFCCC & UNCCD) is in place	2018		100,000	• Ministry of Planning & Intl cooperation, Ministry of foreign Affairs, • Ministry of Finance • Ministry of environment, and UN agencies

Proposed and existing Protected Areas of Somalia



5. IMPLEMENTATION PLANS

The Government of Somalia and other key stakeholders have tried their best to make this NBSAP an action oriented and live document. Efforts were made that this strategy should be ambitious but at the same time highly pragmatic in nature. The entire usefulness of this document thus depends on its implementation both in letter and spirit. On the other hand failing implementation is tantamount to the loss of considerable amount of resources that were invested in the NBSAP formulation process. The time of the hundreds of Somali stakeholders and experts representing various global/international entities is of enormous value, however can only be meaningful when the document is put to implementation. The urgency of implementation is another important aspect of this NBSAP as Somalia, once the hub of amazing biodiversity, has gone through a considerable biodiversity loss. The country faced prolonged replenishment gap and implementation pause due to the civil unrest in the country.

Implementation of the Convention on Biological Diversity is our international obligation as well as a towering national need of rehabilitating Somalia's natural heritage, and ecological integrity of the environment we live in, and well-being of our people. Therefore the National Biodiversity Strategy and Action Plan (NBSAP) must be considered as part of the whole process of results, and all the efforts made in its preparation will go waste if not implemented. Effective implementation will require working with and building capacity of the stakeholders at national, zonal/interim administrations, regional, district and community levels; communicating reaching out to mainstream biodiversity values in the policy and planning processes; mobilizing resources for its implementation; and effective monitoring & evaluation of the implementation process.

5.1. Capacity development for NBSAP implementation

Effective implementation will require working with and building capacity of the stakeholders at national, zonal/interim administrations, regional, district and community levels. For this purpose the first step will be to undertake systematic capacity and human resource assessment, including a technology needs assessment. This is already reflected as one of strategic target under the NBSAP. The capacity assessment and capacity development plan for this NBSAP should adopt the following three tier approach comprise of interconnected areas already elaborated in this NBSAP:

a. strategic approaches for conservation and sustainable of Somali biodiversity: while assessing and developing the capacity for effective implementation of NBSAP the following approaches shall provide strategic guidance and against each the capacity development activities should be designed in cohesive:

- Cohesive and result-based programmatic approach towards integrated biodiversity management
- Mass scale awareness raising about the status of biodiversity, its importance and the road map to rehabilitate the biodiversity of Somalia
- Policy and legislation analysis; and developing & adopting conducive policies and legislation for effective biodiversity management
- Adapting both in-situ and ex-situ conservation measures in the proposed and existing Protected and Marine Protected areas
- Encouraging entrepreneurship in community based management towards sustained value added use of products and services stemming from biological resources.

- A consistent and cohesive mechanism for effective interface management of the key actors
- Knowledge management skills, documenting tacit indigenous knowledge and grafting this with scientific approaches of biodiversity management;
- Mainstreaming biodiversity conservation in the overall development policies, five years national and zonal plans.
- Skills in identification and mobilization of conventional and non-conventional financial windows, while commencing from the biodiversity hotspots and expanding to the ecosystems in general
- Development of an effective response mechanism against the drivers of biodiversity degradation and addressing the gaps in the management
- Effective reiterative system for knowledge management; communication & outreach will be the cornerstone of biodiversity management in Somalia.
- Promotion of appropriate incentive measures including clean energy technologies and climate resilient approaches for ecosystems and biodiversity management
- Adopting concrete measures for strengthening bilateral, regional and international cooperation.

b. Phases of Conservation and Sustainable use of biodiversity (non-wooded forest/landscape products): together with the above strategic guidance as mentioned above the following phases of biodiversity management should guide the capacity assessment and development planning process:

- Biodiversity resource Assessment
- Regeneration/Rehabilitation
- Protection & Maintenance
- Harvesting – both consumptive & non-consumptive use
- Value added processing
- Certification of the processed products,
- Outfitting/Marketing specifically targeting the international market
- Distribution of benefits (equitable), keeping in view the Nagoya protocol
- Investment for further improvement in the management cycle
- Distribution of obligations (equitable), the responsibilities should be fairly distributed as the benefits are distributed

c. gaps that needs to be strengthened for ensuring promising biodiversity management in Somalia: During the consultation process the following gaps were identified and these gaps should be cohesively (together with 'a' and 'b') used to assess and develop capacity for the effective implementation of this NBSAP:

- **Capacity gaps**

The capacity dimensions at the upstream level of legislation, policy and strategic planning is presented in the preceding section; nevertheless the downstream capacity that is essential for effective implementation of the policy and strategies has a substantial gap vis availability and requirement. The capacity gap is described as follows:

Staffing: Insufficient number of staff with lack of competencies beside underpaid & underequipped is the basic feature of staffing of the implementing agencies of this NBSAP.

Skills: The quite high and diverse skills requirement for rehabilitation and management of Somali biodiversity is simply lacking among the relevant sectors (government, civil society, communities, private sector, etc.)

Technology gap: The appropriate technology for effective biodiversity management comprise of the availability of hardware, the know-how to use & maintenance and subsequent internalization by creating self-reliance. This is inadequate available, if not absent.

Networking gap: Networking with international knowledge & advocacy forums, regional or international laws enforcing bodies, funding foundations and multi-national trust funds and other global forums that deals with the subject is not adequately present

- **Absence of synergy among managing actors:**

Although led by the public sector, however the promising management needs the synergy and proactive engagement of other actors such as civil society/NGOs, private sector, and grass-root communities, however these are either not engaged in the biodiversity management scene or otherwise they work in a patchy and non-cohesive manner.

- **Baseline assessment:**

Appropriate baseline assessment of the biodiversity resource is essential prior to policy formulation, strategic planning and operational planning and implementation. However in the case of Somalia, the baseline assessment is least available, for terrestrial biodiversity in general and marine in particular.

- **Management gaps:**

There are over 40 potential biodiversity hotspots, several of which were already notified by the government. Nevertheless none of them is managed at least according to the required standards. Systematic and cohesive management of biodiversity products & services is almost non-existent in Somalia.

- **Sectoral versus integrated approaches:**

Integrated approach i.e. managing species, genes, varieties & ecosystem holistically in the various natural resource regimes (forests, agriculture, fishery, rangeland, wildlife, etc.) is the corner stone of effective biodiversity management, however is almost non-existent in Somalia.

- **Gap in resource mobilization for NBSAP implementation:**

The estimated cost of implementing NBSAP is around USD 300 million, however the current capacity in fund raising from local and international sources is very limited to achieve this target. The capacity to effectively engage global development partners and private through networking and advocacy skills is very limited. This also include capacity gap in donors intelligence, proposal development, result based planning and influencing donors to prioritize Somalia for funding.

- **Security/access gaps:**

The capacity to effectively work on the face of security and access related gaps is very limited. Capacity in alternatives that ensure safety, while remain effective needs to be built.

5.2. Communication and outreach strategy for the NBSAP:

The overall objective of the communication and outreach strategy of NBSAP is to promote NBSAP in the country among decision-makers and the public at large. This also includes the adequate awareness of the Somali people of the values of biodiversity and the required steps for its conservation, protection and sustainable use of ecosystem products and services. An outline developed by the stakeholders during the consultation workshops for communication and outreach strategy is presented as follows:

Goal: the people and leaders of Somalia are aware of the values of biodiversity and have taken steps to conserve and use their biodiversity resources sustainably.

Overall Objective: The overall objective of the COS Strategy is to contribute to the successful implementation of Somalia NBSAP.

Specific Objectives:

- Contribute to the successful implementation of Somalia NBSAP by conducting an advocacy campaign to convince Somalia leaders to prioritize biodiversity conservation, protection and sustainable management by mainstreaming them into the national development plan and providing appropriate financial and human resources.

- Promote public awareness and understanding of the values of biodiversity and the need for conservation, protection and sustainable use/management through the dissemination of information on the values of biodiversity (species and ecosystems) and its relevance to human survival;

- Somalia's stakeholders at national and district levels to support biodiversity policies

Target Audience: The target audience shall include the Government Institutions, Academia, Media, Youth and Women groups, Traditional and political leaders, Parastats/district chairperson, CBOs/Local NGOs, International NGOs, UN agencies and donors (bi-lateral and multi-lateral) and Private sector.

Key Messages

- Values of biodiversity to economy and daily life, including values of flagship species and protected areas and how to conserve and protect them for human development and survival,

- Sustainable technologies and strategies for effective natural resources management, including information on livelihoods that can serve as alternatives to fuel wood gathering and other environmentally unsustainable sources of income.

- Information on major biodiversity concerns of Somalia as identified in the NBSAP: habitat degradation and fragmentation, overexploitation, pollution and solid waste management,

Communication/outreach channels
Print media:

- Newspapers (Dawan,Jamhuuriya, Ogaal, Geeska, Haatuf),

- Magazines (Irmaan, Bildhaan,Raadraac)
- Brochures, Leaflets, pamphlets, Banners,
- T-shirts & caps and other promotional material
- Maps of the natural reserves and eco-regions of Somalia

Audio-Visual media:

- **Television:** SLNTV, HCTV, Bulsho TV, etc.
- **Radio:** Radio Somalia, BBC Somali, VOA Somali, etc.

Online Media: (SMS, Think thank groups, Websites, Email groups, Social media)
Public venues (theatres, mosques, schools, cafeterias, police stations, IDP camps, MCH centres, exhibitions etc.)

5.3. Outline of the plan for resource mobilization for NBSAP implementation:

The financial resources needed to implement the NBSAP are estimated around 300 million USD. This estimation is done during the consultative workshop and the figures are reflected against each target and associated milestones. The resource mobilization capacity is limited and the capacity development for resource mobilization is part and parcel of the capacity building process, nevertheless before the national capacity is developed to the desired level, FAO and other international development partners shall assist the government in realizing the initial finance to kick start the implementation of the NBSAP.

The principles of resource mobilization: a. the resources will be mobilized with the conviction and commitment to use it as an investment, rather than subsidy, for the development of the biodiversity of Somalia.
b. the resources mobilization will be carried out with the intention to create self-reliance to the extent of at-least 70% in the long run.

Approach to resource mobilization: A three-track approach for resource mobilization shall be adopted as follows:

a. Setting up success islands through assistance from conventional donors: The initial resource mobilization shall be done from conventional donors for rehabilitating four Marine Protected Areas and Five Protected Areas with the aim to demonstrate the successful management of protected areas, and to build the essential capacity (through learning by doing approach) to implement and subsequently upscale the biodiversity management. At the same time the other conventional donors shall be contacted for further replication of biodiversity replenishment in other proposed protected areas.
b. Mainstreaming biodiversity in the overall development stream of the government and donors. This will involve active engagement with the planning and international cooperation.
c. Private sector engagement: the private sector should be engaged for realizing two interconnected expectation of a. creating Corporate Social Responsibility window for managing biodiversity of Somalia through the conglomerate of small scale initiative and b. engaging the sector in value added processing and marketing of biodiversity products (such as Non-wooded Forest Products, etc.) and services (ecotourism, trophy hunting, etc.).

A proactive approach for tapping the donors shall be adopted under the overall leadership of the GEF Focal Point and the GEF Focal Point should be strengthened to broaden the resource mobilization focus from GEF to other donors as well. Therefore the office should be titled as **Biodiversity Financing Focal Point.** A rifle/focused rather than shotgun approach needs to be adopted to tap the resources and therefore the following donors should be tapped in a tailored manner:

- Private Sector and raising funds from Corporate Social Responsibility
- Resource mobilization through sustainable use of biodiversity products and services
- Global Environmental Facility:
- Least Development Countries Fund, Special Climate Change Fund, Adaptation Fund, Green Climate Fund,
- SGP GEF and engaging World Bank for small grant programme
- Ongoing programmes of UN agencies and donors
- Bi lateral and trust funds
- Foundations for small scale funding
- National fund-raising and contribution from the diaspora

Some of the potential windows (courtesy UNEP WCMC/NBSAP Forum) are follows:

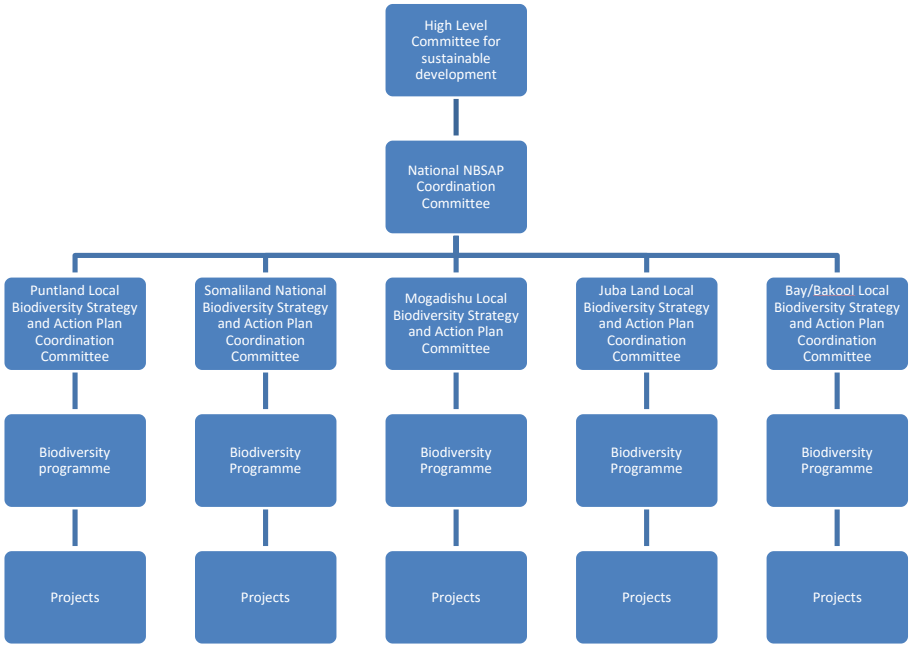
- Bio fin (www.biodiversityfinance.net)
- http://www.un-redd.org/AboutUN-REDDProgramme/tabid/102613/Default.aspx)
- Forest Carbon Partnership Facility (https://www.forestcarbonpartnership.org/)
- http://www.fao.org/forestry/vrd/
- http://www.synchronicityearth.org/
- http://www.nippon-foundation.or.jp/en/what/grant/application/maritime/
- http://www.adessium.org/grant-policy/
- http://www.pewtrusts.org/en
- http://oceans5.org/project/strengthening-high-seas-governance/
- http://www.atree.org/
- http://www.sitatrust.org.uk/nature-funding
- http://www.gbsf.org.uk/general/ (Sasakawa)
- http://ptes.org/grants/apply-grant/worldwide-grant-criteria/
- http://www.leverhulme.ac.uk/funding/IN/IN.cfm
- http://www.waterloofoundation.org.uk/EnvironmentMarine.html
- http://waittfoundation.org/grants/
- http://www.oakfnd.org/node/1319
- http://saveourseas.com /projects
- http://www.waltonfamilyfoundation.org/environment/marine-conservation
- http://www.packard.org/
- http://www.moore.org/programs/environmental-conservation/marine-conservation-initiative
- http://honorfrostfoundation.org/
- http://leonardodicaprio.com/~birkleo/index.php?option=com_webcontent&view=article&layout=item&cid=3&Itemid=138
- http://www.dajf.org.uk/
- http://www.nationalgeographic.com/explorers/grants-programs/cre-application/

- https://www.gov.uk/darwin-plus-applying-for-projects-in-uk-overseas-territories
- http://www.fpa2.com/
- Arcadia Fund
- Garfield Weston Foundation
- Grantham Foundation
- Isaac Newton Trust
- John Ellerman Foundation
- MAVA Foundation
- Mitsubishi Corporation Fund for Europe and Africa (MCFEA)
- Paul and Louise Cooke Endowment
- Westminster Foundation
- MacArthur Fund
- pigshed trust

Timelines: The resource mobilization process must immediately start with the finalization of National Biodiversity Strategy and Action Plan and aim at mobilizing substantial finances, at least enough for setting up the success islands, by 2018. Once this is done a rolling effect shall be triggered automatically and further resource shall be realized effectively. s

5.4. National Coordination Structures

The overall coordination structure for the implementation of Somali NBSAP together with the composition and functions of various tiers is follows:



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High level Coordination Committees: Headed by the Prime Minister and coordinated by the State Minister of Environment, The committee will supervise and coordinate the three Rio

sustainable development conventions (CBD, UNFCCC & UNCCD). The Coordination committee will present its progress to this committee. The committee will meet once a year and beside the members from the Federal Government, representatives of the interim administrations/zones should be the members. The Committee is expected to engage donors and regional and global networks to contribute to the development of the biodiversity of Somalia.

National NBSAP Coordination Committee: Headed by the State Minister of Environment with members from the relevant Ministries at the Federal level, Environment Ministries of the Zone/Interim Administrations, CSOs, Private Sector, Academia, and Research Institutions. (UN agencies and Donors should attend as observers). The Committee meets at least twice a year to plan the activities for the NBSAP at National level, besides coordinating the monitoring and evaluation of the biodiversity programme. The committee is assisted by the Secretariat, to be headed by director general of environment who shall be responsible for overall operationalization of the implementation structure of the NBSAP.

Local Biodiversity Strategy and Action Plan Coordination Committees: All the zones/interim administrations shall have their own Local Biodiversity Strategy and Action Plan coordination committees. These committees shall be headed by the Zonal/Interim Administration Minister of environment and represented by the Director General of all relevant Ministries, Civil Society, Academia and Research Institution. The Committees will provide data and report to the NBSAP Coordination Committee and monitor the progress of the programmes and projects in their respective zone/interim administration.

Biodiversity Programmes at the Zonal/Interim Administration level: The biodiversity programmes will be headed by the Director General of the Ministry of Environment, the overall programme for biodiversity in the Zone/Interim Administration is jointly managed by the Ministry of Environment together with the other sectors of biodiversity such as agriculture, forestry, livestock & range, Wildlife, Marine and Inland Fishery, etc.

Biodiversity management projects: The projects are coordinated by the Ministry, nevertheless are managed by its respective staff. The projects in the zones are steered by the LBSAP Coordination Committee, headed by the Minister of Environment. Each project will have its own project staff and coordinator; however for the sack of synergy will closely work with the Director General of the Ministry of Environment of the respective Zone/Interim Administration.

5.5. Clearing House Mechanism:

The Convention on Biological Diversity's article 18 (sub-article 3) calls upon the contracting parties to establish Clearing House Mechanism, which according to the article will:

- Strengthen national capabilities through human resource development and institutional building;

- Develop methods and adopt to, use of technological advances to achieve objectives of the CBD with promoting cooperation in training of personnel and exchange of experts;
- Promote joint research programs and joint ventures for the development of technologies relevant to the objectives of this convention;

The Somalia CHM will work as information exchange mechanism that can promote cooperation, knowledge sharing, networking and opportunities for capacity building and training. At a contracting party's level, there could be several administrative divisions involved in implementation of CBD provisions. The interactions among the administrative units, data sharing, and knowledge exchange might be faced with gaps due to non-availability of a common forum. The CHM is meant to provide that forum, which can gather data on implementation of the CBD, its progress, monitoring, institutional building, partner's capacity building and other relevant parameters. The CHM, on one had provides the forum at national level, but on the other it provides a one stop shop for international partners to benefit from the data, knowledge managed, and experiences shared.

A CHM, consisting of a Central repository of data relevant to CBD at national level, an online website to manage the data in a meaningful format (tables, maps, graphs), and disseminate it to the national and international partners in addition to sharing it with CBD Secretariat. The Clearing House Mechanism should be composed of the following:

1. Establish national focal point for this clearing-house mechanism at Mogadishu, who shall network with relevant government institutions, non-governmental organizations and other institutions holding important relevant databases or undertaking significant work on biological diversity. Identify an appropriate person as CHM manager, preferably with IT background and understanding of biodiversity issues in Somalia.
2. Convene a stakeholders consultation and formally organize a stakeholders network including official contact persons and their related contacts information (email, telephone, website); Agree on minimum biodiversity information for uploading in the national CHM website and decide on the web programs and equipment to be used in its establishment;
3. Establish directory of relevant institutions and experts working on biodiversity themes related to Agriculture, Forests, Mountains, Rangelands, Coastal & Marine biodiversity, Deserts and Inland waters biodiversity; and make these available through the clearing-house mechanism.
4. To assist Federal and Regional interim Administrations of Somalia in accessing information related to scientific and technical cooperation, including Training & Funding opportunities, Access to technologies & Research facilities and promoting partnerships with relevant institutions/organizations including private sector.
5. Establishment of a data collection, compilation and management unit that can maintain, under the overall guidance of the CHM Focal Point, the demand and supply balance between data procurement and supplying
6. A Geographic Information System (GIS) and Remote Sensing (RS) laboratory equipped with hardware & software, and human resource;
7. An online web portal disseminating data, updating and improving data sharing, and providing access to data at national and administrative levels for sharing, benefiting and using;
8. Periodic validation of data for quality assessment

The CHM's components could be:

1. Space and placement: It could be housed in a organization that deals with CBD such as the relevant ministry;
2. Human Resources: It can consists of but not limited to a Biodiversity Expert, A statistician, a GIS and RS expert, GIS technicians, Web-developer/manager
3. Hard ware and software: Though it will require a detailed need assessment, yet broadly it will need Computer Servers, Networked Computer stations, Printers, Storage system, High speed internet facility, required software (many are licensed), images, soft data, data collection, management and feeding in mechanism, web-development and online updating etc.
4. Dissemination system to share knowledge with international partners (CBD secretariat, CBD contracting partners, etc.), national level institutions (parallel institutions, administrative level authorities, non-governmental organizations, research and academic institutions, individual scientists, conservationists, activists , etc.).

Implementation plan of CHM Somalia

The Plan to implement CHM establishment for Somalia, should include the following components:

- **Institutional Arrangements:** The institutional arrangements should elaborate the management mechanism for the CHM and budget requirements (requires around 300,000 to 400,000 USD in cash, whereas the Government contribution can be in kind). Visibility of the CHM, this will be included in the overall communication and outreach strategy and will be backed by mailing lists, list of complete contact details of stakeholders
- **Responsibilities and Terms of Reference:** The terms of reference should elaborate the official mandate, deliverables, Steering Committee/mechanism and explanation of the overall functioning of the CHM. The CHM should work under the direct supervision of the highest coordination/supervision body of the NBSAP implementation.
- **Partnership Arrangements:** The partnership arrangements should articulate the data holders' identification, sharing of information, defining of deliverables and motivation (honoraria, web exposure, etc.)
- **Resources needed to establish a national CHM Website:** The Somalia CHM shall require staff & office space, website infrastructure such as survey of available tools, website layout web hosting and maintenance.
- **Web Content Production and Management:** This shall include the management of available information, roles of each CHM component, data Approval system (data validation, global standards), Reviewing/Updating of information, etc. The Specific Activities to initiate national CHM Establishment include the following:
    - Building National Contact Network
    - Information Gathering and Dissemination
    - Website Development
    - Education and Public Awareness Activities
    - Training/Capacity Building

5.6. Monitoring and Evaluation:

The NBSAP will be monitored and evaluated against the strategic framework in general and the targets & respective indicators in particular. At the initial stage the NBSAP the M&E component will be done through the project/s, however shall be gradually institutionalized at the Federal and Zonal levels. The M&E framework should comprise of the following:
Based on the strategic framework of the NBSAP, the Monitoring & Evaluation plan should be developed with defined benchmarks, indicators and targets
Risk, issues and quality logs should be created for each of the strategic target and also at the priority level;
The monitoring of the overall NBSAP should be done on annual basis, whereas the evaluation and systematic reviews should be carried out with three to four year interval and should focus at the priority area level and also assessing the results against the strategic targets.

For this purpose a monitoring and evaluation committee should be established under the NBSAP Coordination Committee for improving and strengthening the monitoring and evaluation systems. The M&E committee will comprise of the representatives of relevant government ministries, civil society, donors and implementing partners. The Federal Ministry of Environment (State Ministry of Environment) shall serve as the focal point/secretariat for the M&E committee.

The M&E committee will ensure effective monitoring and evaluation by devising mechanisms for regular monitoring and periodic assessment of biodiversity related interventions at various levels. The M&E committee will co-ordinate with government and non-government agencies to get progress status, outcomes and learning from their biodiversity related projects and programmes, annually. The sub-committee will meet at least twice a year to assess overall progress and draw lessons, and submit a report to the NBSAP Coordination Committee annually. The NBSAP Coordination Committee shall then appraise the Parliament and makes the information available for public. The NBSAP Coordination Committee will allocate adequate resources, approve plans and regularly supervise activities of the M&E committee.

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Annex 1: Somalia Facts Sheet

Land Area: 637,657 sq.km. with longest coastline (3,025 Km) in continental Africa, and border Djibouti (58km), Ethiopia (1,600 Km) and Kenya (682 Km), land area 98.4% (627,337 Km^2) and water area 1.6% (10,320 Km^2)

Climate: Hot, arid and semi-arid. South has higher rainfall. Two wet seasons (April to June, and October to November) with approximately 500 mm in the northern highlands, 50-150mm along coast, and 300-500 mm in the southwest. With climate change, extremes (drought, flood) likely to increase in frequency and ferocity.

Land Forms: Flat plateaus and plains, coastal plains, Juba and Shabelle the main and only permanent rivers. Highlands to the north with important mist forests.

Land Use: Irrigated agriculture is on around 1% area (6,234 Km2), rain-fed agriculture is around 7% (23,446 Km2), natural vegetation from closed to sparse is 83% (528,400 Km2), bare areas 11.7 % (74,819 Km2), water bodies 1.6% (10,320 Km2) and built areas only 0.1% (650 Km2) (FAO, SWALIM, 2013).

Forests and woodlands: Two classes of woody vegetation found with total area 83% but sparse in nature. Area under natural woody vegetation closed to open is 52.7% with 336,612 Km2 area and natural woody vegetation sparse or herbaceous is 30% with 191,751 Km2 area. Nevertheless the dense forest vegetation is confined to the patches in the Golis mountain in the north and the coastal mosaic forests of the southeast. This however shall not exceed than 3% of the total area of the country. The woody vegetation is dominated by *Acacia* and *Commiphora* shrub and woodlands. Extensive areas riverine forests cleared for agriculture, and localized dryland forest clearance for charcoal. Mist forests in north only true forests and under threat. Increased pressures on forests for charcoal – especially for urban areas – huge demand, also export trade.

Biodiversity and Conservation: 0.8% of the land protected (2000). National Conservation Strategy was developed to the extent of inception report but full-fledged NCS is yet to be developed. Part of Conservation International Horn of Africa Hotspot which has over 60 endemic genera and over 2,750 endemic species. Part of Somalia-Masai region of plant endemism (Savannas and shrub lands). 24 important bird areas. Generally fauna depleted due to over and illegal use. Invasive (e.g. *Prosopis* spp. and the Indian House crow, *Corvus splendens*) important to address, though *Prosopis* could be used for charcoal.

Marine: Fringing reefs and coral patches in Gulf of Aden, few mangroves; On Somalia Indian Ocean Coast, fringing and back reef lagoons from the Kenya border to Kismayu. From Kismayu onwards there are no reefs, because of nutrient rich deep water upwelling, which supply very important offshore fisheries (tuna). Artisanal fishing at low level, not a widespread tradition, but pressure has increased due to displacement of people from inland to coast. Traditional shark and ray fishing on Gulf of Aden coast for the salted/dry local (regional) market, but now shifted to shark fin export to Asia. Illegal, unregulated and unreported (IUU) fishing by foreign vessels now a critical issue. Commitment from local NGOs high; technical capacity for management needs building.

Water and wetlands: 1,685 m^3 per person per annum, but distribution very skewed. Water critical resource ultimately determining livelihoods. Juba and Shabelle only perennial rivers, many seasonal streams. Historically water management integrated with livestock management. Now much unplanned for water supply construction (berked, balley, wells) individually owned – increases pressures on rangelands. Irrigation agriculture use to account for over 90% of water use.

People: population estimated at 10,496 million (2013) with 52 % female and 47 % male. Approximately 64% rural and 36% urban. Poverty levels high with nearly 80% of rural population living in poverty (less than $2 per day), while a total 53.4% live in extreme poverty (less than $1 per day). Six major clans – 4 are mainly pastoralist, 2 agricultural. Lack of clarity of land tenure and security of rights to land. There are about 16 people per sq.km and an annual growth rate of 2.8%.

Administration: 18 regions; Somaliland in the north has its own self-declared Government, as does Puntland in the north-east but it is more closely linked to central and southern Somalia Administrations.

Social Services and Education: Health indicators some of worst in Africa with high mortality rates. Estimated life expectancy at birth low, while average life expectancy of 47. Infant mortality is 115 deaths per 1,000 births. Infectious diseases, nutritional deficiencies and birth related problems are major health risks, and water borne diseases are on the increase. HIV/AIDS prevalence estimated at less than 1% (2001). Primary school enrolment is only 20.8% for boys and 16.9% for girls. The overall adult literacy rate of 25% for males, and 12% for females with the literacy in rural areas being extremely low. In addition to low education levels, there are been a great brain drain to other countries.

Gender: Though over half the population, women have very little voice. But many civil society groups negotiating for greater equity in decision making. With increased democracy role of women likely to improve.

Agriculture: Main food crops are sorghum, millet, maize, rice. Main cash crops were bananas, sugar, cotton. Crops limited mainly to irrigated areas, but an increase in high risk opportunistic rain fed cultivation removes land from livestock based systems. Emphasis on cultivation based agriculture as main vehicle for livelihood improvement. Indigenous crop varieties (sorghum, cowpeas) emphasized. 14% of the population are engaged with farming.

Livestock: Pastoralism accounts for over 50% of the population, 40% of GDP, 65% of export earnings, and is the mainstay of the economy based on wet and dry season grazing/browsing of natural resources (grasses, herbs, browse, trees and shrubs). Most of country annual grasslands with shrubs and woodlands in wetter areas where they may also be perennial grasses. Trade with gulf states key to livestock industry. There is evidence of rangeland degradation as a result of strife and insecurity, but the scale and extent is difficult to validate. Private grass enclosures further alienating land from common property management.

Urbanization and Infrastructure: Increasing rapidly (now about 36% of the population are urban), especially with returnees who can no longer fit into pastoral system. Urban areas not seen in context of greater landscape. Great demands on rural environments – charcoal, forage. Infrastructure under-developed – much destroyed during periods of insecurity.

Economics and livelihoods: Livestock the main economic base for the country. Many natural products sold – especially Frankincense (used to be 4th largest foreign currency earner) and Myrrh (used to be worlds largest producer). Industry small scale, mainly service – but potential for processing and value adding on natural resources. Potential for Somali industrial fisheries and new artisanal fisheries development if IUU addressed. The GNP is $200 per capita. There are large remittances (estimated at between $300-$500 million per annum), while donor support is estimated at about $115 million per annum (2000 figures)

Natural disasters: Tsunami best known, but effects of droughts and floods far more serious. From 1961-2004 18 floods killed 2,600 people, and 12 droughts killed 19,600 people. With land conversion (for irrigation, charcoal, urban needs), effects of drought

exacerbated. Massive coral bleaching occurred worldwide in 1998 due to climate change and resulted in widespread coral mortality, which is likely to have impacted Southern Somalia and Gulf of Aden coast.

Impacts of insecurity: Massive refugee movements. Breakdown in social fabric of country resulting in "free for all" in terms of land and natural resource use – meant that traditional land use systems no longer respected. Still many hundreds of thousands of land mines – especially in Somaliland and Puntland.

G**overnance, Policy and Law:** In terms of environment very weak. Somaliland and Puntland have better evolving policy/legal framework. No EIA's except as donor requirement. Government signatory to number of international agreements – but not able to implement.

Annex 2: The inclusive process of NBSAP Somalia: Identification of main stakeholders and establishment of consultation mechanism

1: Identification of the main stakeholders

The stakeholders' identification and the establishment of consultation mechanism were done in a participatory manner in consensus with relevant institutions in Somalia (South-Central, Puntland & Somaliland), UNDP, UNEP and IUCN. The project task force (PTF) within FAO was taken on board from the outset. Based on the collective wisdom stakeholders were identified from the Government, NGO, Academia, Media, Private Sector in South-Central, Puntland & Somaliland (detail list attached as Annex I)

2: The NBSAP consultation mechanism

The consultation process was aimed at three interconnected elements of information collection & analysis for baseline assessment, strategic & action planning and devising implementation support mechanisms. Accomplishing ownership of the overall NBSAP process as well as its subsequent implementation was also in mind right from the outset. Therefore efforts were made to develop the multi-pronged team, coordinated by FAO Somalia that gives consistent sense of direction to the NBSAP process, during the formulation stage and its subsequent implementation. The consultation process was to be objective driven, nevertheless principle-centred.

2. a Principles of the consultation process: In the first series of meetings at Nairobi with FAO and with other relevant institutions, the NBSAP team developed clear understanding of the sensitivities of Somali context, where all the zones (South-Central, Puntland and Somaliland) have to be brought on board and all these zones have to be given due attention & opportunity in the consultation process. So the leading principles for consultation were follows:

- A balance approach, and not all the top down approach, has to be adapted between the three zones and each one has to be given due importance in the course of consultation and validation, and
- As a post conflict country, with smoldering remnants still exists, the NBSAP team must understand the sensitiveness of the situation on one hand, while not compromising on the quality of the consultation process and the related outputs.

While keeping in view the above mentioned principles the consultation mechanism was derived to stay effective in attaining the stipulated objective in a principle-oriented manner. The consultation mechanism comprise of the following arrangements:

2.1 The National Steering Committee

This forum comprise of 12 members with balanced representation form the Somali government, civil society and international organizations. Although the NSC is the overall decision making body responsible for providing quality guidance and orientation during the NBSAP process, however this also functions as the critical mass for the promotion of biodiversity cause of Somalia. The NSC maintains the cohesiveness of this NBSAP process with the vision of the Convention on Biological Diversity and other related global agreements. The forum also works as advocacy and awareness raising team to promote the

biodiversity concerns of Somalia among key national and global actors. The NSC guides the NBSAP managers to cross-fertilize the biodiversity related knowledge, learn from the best practices of other countries and also disseminate Somalia's lesson learnt and challenges to global forums and relevant countries. The detail terms of reference is attached as annex II.

2.2 Project Task Force (PTF)

FAO internal project steering mechanism, PTF comprise of representative of FAO Somalia Office, FAO Africa Regional Office at Addis Ababa and NBSAP/GEF focal point in FAO headquarters at Rome. PTF assess and guide the NBSAP progress and maintains the quality standard of the NBSAP process & product. PTF also works as the bridge between national, regional and global NBSAP related opportunities and challenges.

2.3 Focussed Group Meetings

Focussed group meetings were identified as a consultation mechanism for consolidating the NBSAP process/road map. Series of meetings were held with UNDP due to its recent experience of accomplishing the NAPA process. UNEP was consulted for its overall experience of the Enabling Activities such as UNFCCC 2nd National Communication and UNCCD NAP Alignment which they are leading in Somalia. UNEP tossed the idea of Enabling Activity focussed group comprise of FAO, UNDP & UNEP to share the ideas and also join hands in implementing these projects in Somalia. IUCN East Africa Region Office was found a very useful institutions in terms of their biodiversity related experience of Somalia. They shared useful ideas of how to go ahead with the NBSAP process in Somalia and also provided substantial information and literature link on the biodiversity and environment of Somalia. Meetings were held with ICRAF & CIFOR and their knowledge on the transboundary initiatives between Somalia and Ethiopia as well as their land-use planning process were found quite relevant, and they shared their lessons in effectively handling consultations in complicated contexts such as Somalia.

The Somali Government was taken on board right from the beginning and focussed discussions were held with them about implementing NBSAP process. Such meetings included meetings with the sessions with Environment Directorate, Office of the Prime Minister, Federal Republic of Somalia; Ministry of Environment & Rural Development of Somaliland; and Ministry of Environment, Wildlife and Tourism, Puntland. The meetings were held under the chairpersonship of the senior officials/Ministers and the consultation mechanism and the overall road map were devised based on the collective wisdom. These meetings helped in finalizing the representation in the succeeding meetings and workshops of the NBSAP process.

2.4. Consultation Workshops

Two series of consultation workshops were envisaged with the first one mainly for setting the context for NBSAP process, assessing the status of biodiversity & associated challenges and the strategic planning process. The first series of the workshops refined the purpose of the second series of workshops as these are to be focussed on the analysis of management arrangements and mainstreaming of biodiversity in the development process. The second series were also to fill any gap identified in the first series of the consultation/workshops. The details of both the series of the consultation workshops are as follows:

2.4.1 First Series of Consultation Workshops:

These events were used as the major consultation mechanism for the NBSAP process. Three consultation workshops, led by the respective ministries, were held each in Somaliland, Puntland and South-Central (Workshops annotated agendas and list of participants attached in Annex II). Participants included representatives from the government, international development partners, civil society organizations, academia, media and private sector. The five-pronged focus of these workshops was follows:

a. **Setting the context for NBSAP process in Somalia:** The meetings were opened by the respective Ministers in Puntland & Somaliland and the representative of the Office of Prime Minister in Mogadishu. All these high ranking figures reiterated their commitments to the conserve the biodiversity of Somalia. In this session a uniform level of understanding of Somali biodiversity, the challenges & opportunities, values of biodiversity & ecosystems, main threats and the drivers behind these threats was developed. The constitutional & institutional framework including policy and planning processes were deliberated. During these sessions the nexus between local actions and global benefits and vice versa were also discussed and the framework of Convention on Biological Diversity (CBD) was explained in relationship to its benefits and obligations for Somalia. The Strategic Plan for Biodiversity 2011-2020and its Aichi Targets were also discussed in detail. In this regard, lessons learned from previous interventions and contemporary initiatives were also deliberated.

b. **Outlining the principles, priorities and targets of NBSAP:** After setting the context, the participants formulated the long-term biodiversity vision, corresponding to the global vision mentioned in the Strategic Plan for Biodiversity 2011-2020. The three zones (Somaliland, Puntland & South-Central) developed rather distinctive visions 2050. They also developed sets of principles for governing the biodiversity and associated priority areas with focus on halting & reversing the degradation of biodiversity, sustainable use based on equitable distribution of benefits & obligations, mainstreaming biodiversity conservation in the development process and forging alliances & partnerships for the sustainable management of biodiversity of Somalia.

c. **The National Action Planning:** A bottom-up approach was adopted and therefore the action planning was done first at zonal level (Somaliland, Puntland & South-Central) and subsequently consolidated at the federal level. Nevertheless the finalization will be done through another validation meeting and mainly with the NSC. The action plans developed in the workshops will be further refined through structured interviews. However this forum provided with reasonable foundation for the action planning.

d. **Outlining the Implementation Support Plans**: reasonable attention was paid to outlining the implementation support plans comprise of resource mobilization, capacity development for NBSAP implementation including a technology needs assessment and communication and outreach strategy for enhancing the effectiveness of the NBSAP.

e. **Institutional mechanism for Monitoring and Reporting:** At the end of each workshop the participants sketched the National Coordination Structures, Clearing-House Mechanism and Monitoring and Evaluation for the implementation of NBSAP.

2.4.2. Second Series of Consultation Workshops:

Two 3-day workshops are to be conducted in the Somaliland and Puntland (with participants from South-Central) aiming at the following:

1. Enhance the understanding and skills of the participants in using the sectoral-approach for conserving and mainstreaming biodiversity, and
2. Further refine the initial output and finalize the NBSAP together with its support mechanisms such as resource mobilization strategy and clearing house mechanism, through:
    - Examine the existing biodiversity related management arrangements (both Government-led & Indigenous) and articulate the limitations as well as strengths of these management arrangements; also assess the level of complementarity and/or competition between these arrangements.
    - Assess the mainstreaming of biodiversity conservation in the overall development process of Somalia, this include examining the broader development policies and plans of the government such as the poverty reduction strategy paper, 5-year development plans, etc. This will include interface with key persons in the Planning & International Cooperation, Finance Ministry, etc. and large development partners such as World Bank, etc.
    - Assessing the current biodiversity related legislation and the status of its enactment/implementation; also determining the overall effectiveness and capacity of the relevant departments/ministries in implementing the policy/legislation related;
    - Ascertain the number of environment/biodiversity related global conventions Somalia has signed/ratified and assess the progress as required by the ratification of these global conventions.

2.5. GEF Enabling Activity (EA) focal group

Somalia is currently developing three GEF Enabling Activities related to the three Rio Conventions (CBD, UNFCCC & UNCCD) implemented by FAO, UNDP and UNEP. Thus the group comprise of this three GEF implementing agencies and guide the NBSAP team in ensuring complementarity between the other ongoing enabling activities (such as NAPA, NAMA, NAP alignment, UNFCCC 1st Communication, etc.) with the aim of pooling the knowledge and resources in a mutually beneficial manner for NBSAP and other Enabling Activities. UNDP and UNEP are therefore also the members of the NBSAP National Steering Committee.

2.6. Environment Donors Coordination Group (EDCG)

Based in Nairobi represented by environment donors and other active environmental organizations, this forum will be used for the NBSAP refinement process as well as for resource mobilization for subsequent implementation. The first meeting is expected in the first fortnight of December.

2.7. NBSAP Forum

Hosted by CBD Secretariat, UNDP & UNEP, the NBSAP Forum is a global partnership aiming to support NBSAP revisions. The forum support countries in finding the information

they need to develop and implement effective NBSAP. From this community of practice with wide range of experts, the NBSAP Somalia is accessing relevant best practices, guidance and resources. We found the NBSAP Forum portal very useful in terms of repository of useful resources that can be explored by key themes; and we are in touch with key experts from around the globe who have similar experience.

The forum is quite helpful and is readily available for guidance, beside the fact we are in touch with the key NBSAP global actors in general and CBD Secretariat in particular, as through this forum the CBD Secretariat is engaged in the NBSAP process from the outset.

Annex l: National Biodiversity Strategy and Action Plan Workshops in Somaliland and Puntland

List of participants of the Workshop in Hargeisa SOMALILAND: 7-9 October 2014

No.	Name	Organization	Email
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32	Ibrahim Ali Hussein	MoERD	ibrahimhussein456@gmail.com

List of participants in Garowe, Puntland
Date: 13-15 Oct, 2014

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Annex ll: National Biodiversity Strategy and Action Plan Workshop at Mogadishu and Interim Administration of South West at Baidoa

Food & Agricultural Organization of the United Nations

Mogadishu Office

Date: 05/11/2014

Venue: UNCC

Attendance sheet for NBSAP Workshop Participants

S/n	Names	Organization	Email Address	Tell Number	Signature
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3	Ahmed Elmi Gure				
4	Abdullahi Roble				
5	Abdullahi Mohame Adaawe	Ministry of Energy & water resources	Gadaawe100@gmail	0617329320	[signature]
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Prepared by: Sirad Ali Mohamud [signature]

Verified by: Saleem Ullah

DOWLADDA KOONFUR
GALBEED EE SOOMAALIYA
WASAARADDA BA'ADDA & DAAQA

ولاية جنوب غرب الصومال
وزارة البيئة والمراعي

SOUTHWEST STATE OF SOMALIA
MINISTRY OF ENVIRONMENT & FORESTRY

LISKA KAQEYB GALAYAASHA SIMINAARKA 22/05/2015

MAGACA	WASAARADDA	DARAJADA	CINWAANkA
1. Adan mamo xasan	W.Bey'adda&Daaqa	W.Kugeen W.Bey'adda&daaqa	06155529192
2. mustaf cusman cabdulle	W.Bey'adda&Daaqa	Agaasime Guud	0618650050
3. En.C/qadir cali xashi	W.Bey'adda&Daaqa	Lataliye W.Bey'adda&daaqa	0615515542
4. Maxamed xasan munye	W.Bey'adda&Daaqa	Madaxa shaqalaha	0615296382
5. Aweys xusen macalin	W.beraha&warabka	W.Kugeen W.beeraha&warabka	0615802881
6. Maryan adan cabdi	W.beraha&warabka	Madaxa shaqaalaha	0615506143
7. xusen cali maclin	W.beraha&warabka	Agasimaha W.warabka	0165612445
8. Maxamed C/qadir macalin	W.Xanaanada Xolaha, Dh & D.	W.Kugenka X.xoolaha	0615515755
9. Maxamednur madowe	W.Xanaanada Xolaha,	Agasinka W.qorshaynta	0616423745
10. Idiris axmed yacquub	W.Xanaanada Xolaha	Agasinka W.dhirta	0616573956
11. Najmo Macalin maxamed	W.Xanaanada Xolaha	Agasinka W.cilmi barista	0165703641
12. siid cali ibrahim xasan	W.Kalumaysiga&kheyratka badda	Madaxa shaqalaha	0615581235
13. Iisha maxamed muqtar	W.Kalumaysiga&kheyratka badda	Madaxa keydinta	0615058407
14. C/qadir yasin abaayle	W.Kalumaysiga&kheyratka badda	Madaxa iskashatada kalumaysiga	0165561117
15. Cali maxamed xusen	W.Macdan&Biyaha	Madaxa shaqalaha	0618816100
16. C/rashiid axmed xasan	W.Macdan&Biyaha	W.kuxigen Macdanta&biyaha	0617855552
17. Maxamed cismaan ibraahim	W.Macdan&Biyaha	Xoghayn W.macdanta&biyaha	0615566241
18. axmed maxamed geedi	W.Dalxiiska&Duurjoogta	W.Kuxigen Dalxiis&dalxiska	0615470033
19. Cabdi malaaq isaaq	W.Dalxiiska&Duurjoogta	Agasinka W.Dalxiiska	0615794820
20. Mahad diiriye maxamuud	W.Dalxiiska&Duurjoogta	Agasinka W.mamulka shaqalaha	0616752734

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Annex 3: Terms of Reference of the National Steering Committee

Background

The Federal Republic of Somalia has signed the Convention on Biological Diversity (CBD) becoming its 193rd member. By virtue of this ratification, Somalia is obliged to develop its first ever National Biodiversity Strategy and Action Plan. FAO, through this Global Environment Facility (GEF) Enabling Activity (EA) Project, is assisting Somalia in the development of its National Biodiversity Strategy & Action Plan (NBSAP). The project is also supporting the development of the associated implementation support mechanisms for the NBSAP. The project will achieve its objective through three components: 1) Stocktaking and assessment based on existing information; 2) Identification of priorities for biodiversity conservation and development of a National Biodiversity Strategy consistent with the Strategic Plan for Biodiversity 2011-2020; and 3) Development of national implementation plans for resource mobilization, communication & outreach and monitoring & evaluation/reporting.

FAO's team for implementing this project comprises of FAO Country office in Somalia (Budget Holder), the Forestry Officer in the Sub regional Office for Eastern Africa (Lead Technical Officer) and the Secretariat of the Commission on Genetic Resources for Food and Agriculture under the Natural Resources Management and Environment Department (LTU). This team will provide supervision and technical guidance throughout implementation. The Directorate of Environment, Office of the Prime Minister, will serve as the national executing partner while the GEF focal point of this office will serve as the National Project Coordinator.

Objectives of the National Steering Committee

In consultation with FAO Somalia, the Directorate of Environment, Office of the Prime Minister of Somalia, will establish a National Steering Committee (NSC) to be co-chaired by the National Project Coordinator and FAO Somalia Officer In Charge (OIC). The NSC will consist of key stakeholders from relevant ministries, the private sector, civil society, local and international NGOs, including IUCN-East Africa Regional Office, UNDP & UNEP. The NSC will serve as the project's oversight and decision-making body. The Steering Committee will provide high-level guidance to the biodiversity strategy and action plan development to ensure that the NBSAP is in harmony with other government plans and programs and to maximize the chances of the NBSAP becoming a formal government policy document.

Functions of the National Steering Committee:

The NSC will review project progress, work plans, and approve major outputs of the project including the initial draft and final versions of the NBSAP. Beside approval of the detailed work plan the NSC will also do periodic reviews of progress at least once every year. While responsible for providing overall guidance to the NBSAP process to maintain the focus & relevance in a quality conscious manner, the NBSAP Somalia Project Steering Committee will function with the following specific terms of reference:

1. Provide high-level guidance and orientation for the strategy and action plan development;

2. Raise the level of awareness of the importance of the national biodiversity strategy within high level bodies of government;
3. Ensure that NBSAP development is in compliance with the Convention on Biological Diversity and with the NBSAP project document;
4. Ensure that all measures are taken to maximize the probability that the biodiversity strategy and action plan will become a formal government policy. The committee will endorse the strategy and action plan documents before they are submitted to the appropriate government body/ies for approval as formal government policy documents.
5. Facilitate the work of the planning entities (National Project Coordinator, NBSAP Consultant, and National Project Manager) and ensure access to archives and information held by their parent institutions;
6. Participate in national NBSAP workshops and other relevant events;
7. Each steering committee member will serve as a focal point within their parent organization for NBSAP development activities.
8. To guide the NBSAP team in ensuring complementarity between the other ongoing enabling activities (such as NAPA, NAMA, NAP alignment, UNFCCC 2nd Communication, etc.) with the aim of pooling the knowledge and resources in a mutually beneficial manner for NBSAP and other Enabling Activities.
9. To work as technical/knowledge pool and share best practices and lessons learnt from the experience of other contemporary initiatives/sources.

Decision-Making Authority

As the Steering Committee is essentially an advisory and monitoring body, its decisions will generally take the form of recommendations and endorsements. Decisions taken by the Steering Committee will not impinge upon the decision-making of the donors in the exercise of their supervisory authority over the implementing agency, nor upon the day-to-day management authority exercised by the implementing agency.

Meetings

Steering Committee meetings will be held half yearly. Venue, date and time will be notified by the secretariat at least two weeks in advance of the meeting. In exceptional circumstances, an extraordinary meeting can be called by the chairman.

Membership

The membership of the Steering Committee shall consist of:

Government Representatives

1. State Minister of Environment/GEF Focal Point, Federal Government of Somalia, (Chairperson)
2. Director General, Ministry of Planning & International Cooperation
3. Director General, Ministry of Finance
4. Director General, Ministry of Livestock & Range, Federal Government of Somalia

5. Director General, Ministry of Wildlife & Forests, Federal Government of Somalia Wildlife, Forest
6. Director General of the Ministry of Environment & Rural Development of Somaliland
7. Director General of the Ministry of Environment, Wildlife and Tourism, Puntland

Members of the Implementing Agency, FAO

8. The FAO Officer-in-Charge for Somalia (Co-chair)
9. The Chief Technical Advisor (CTA) of NBSAP/SWALIM

Stakeholder Representatives

10. Project Manager Environment & Poverty, UNDP Somalia
11. Manager Biodiversity/Land Degradation, UNEP Regional Office, at Nairobi
12. Representative of IUCN - East Africa Office, based in Nairobi

The NBSAP Consultant and NBSAP National Project Manager will participate in the meetings with no entitlement to the vote. Other persons such as CBD/GEF representatives, SWALIM Coordinators or other experts can be co-opted to assist the committee in addressing particular issues. Co-opted members shall not be entitled to vote.

Secretariat: FAO NBSAP team will act as secretariat.

Voting

The voting members will arrive at recommendations, endorsements and decisions by consensus. A quorum of five members will be the pre-requisite for all official conclusions.

Agenda and Minutes

The NBSAP Project will act as the Secretariat. The NBSAP Consultant/Project Manager will make a presentation of progress and future planning to the committee at each meeting.

The agenda will be drafted by the Secretariat and approved by the Chairman or his designate.

The agenda will be distributed to members of the Steering Committee no fewer than eight calendar days in advance of the meeting.

Item 1 of the agenda will be the approval of the minutes of the last meeting. Item 2 will deal with matters arising from the minutes, including reports on the follow-up to decisions taken during the previous meeting. Item 3 will be the presentation of progress and future planning as well as decision points raised by the NBSAP team. Under Item 4, the Steering Committee members will discuss progress and take decisions on questions raised by the NBSAP team. The final items will be *any other business* and the date, time and location of the following meeting. Matters for consideration under *any other business* may be raised by any member of

the Steering Committee, but must be raised immediately after approval of the minutes of the last meeting.

The Secretariat will draft the minutes of each meeting. The minutes will record only decisions taken against each agenda item, not the detailed discussion, unless so determined by the Chair. The minutes shall record items where no decision was reached, and the reasons for the failure to arrive at a decision. The minutes should also identify the persons or organizations responsible for following up or implementing a decision.

The draft minutes will be circulated in English within two weeks of the meeting, registered as passed when all members have given their assent to the Chair (generally within two working weeks from the circulation of the minutes), and approved at the subsequent meeting.

Annex 4: Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets

Context:

"Living in Harmony with Nature": Biological diversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. It provides for food security, human health, the provision of clean air and water; it contributes to local livelihoods, and economic development, and is essential for the achievement of the Millennium Development Goals, including poverty reduction. In addition it is a central component of many belief systems, worldviews and identities. Yet despite its fundamental importance, biodiversity continues to be lost. It is against this backdrop that the Parties to the Convention on Biological Diversity, in 2010 in Nagoya, Japan, adopted the Strategic Plan for Biodiversity 2011-2020 with the purpose of inspiring broad-based action in support of biodiversity over the next decade by all countries and stakeholders. In recognition of the urgent need for action the United Nations General Assembly has also declared 2011-2020 as the United Nations Decade on Biodiversity.

The Strategic Plan for Biodiversity 2011-2020: A ten-year framework for action by all countries and stakeholders to save biodiversity and enhance its benefits for people.

The Strategic Plan is comprised of a shared vision, a mission, strategic goals and 20 ambitious yet achievable targets, collectively known as the Aichi Targets. The Strategic Plan serves as a flexible framework for the establishment of national and regional targets and it promotes the coherent and effective implementation of
the three objectives of the Convention on Biological Diversity.

The VISION

"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

The MISSION

"Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach"

The Aichi Biodiversity Targets

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

1. By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
2. By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
3. By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
4. By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

5. By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
6. By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
7. By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
8. By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
9. By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

10. By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and

other effective area-based conservation measures, and integrated into the wider landscape and seascapes.

11. By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
12. By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services.

13. By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and wellbeing, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
14. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
15. By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

16. By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
17. By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
18. By 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
19. By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Annex 5: The IUCN Red List for Somalia

Note: This list of species recorded from Somalia is included on the 2006 IUCN Red List of Threatened Species (IUCN 2006). The list includes species that may be vagrants in Somalia or occur very occasionally within its territorial waters. The abbreviations for the Red List Categories used in the 5th column are: CR – Critically Endangered, EN – Endangered, VU – Vulnerable (these three categories combined are the threatened categories), LR/nt and NT – Near Threatened, LR/cd – Lower Risk conservation dependent, and DD – Data Deficient. Species assessed as Least Concern (LR/lc or LC) are not included here.

Major Group	Family	Species Name	English Common Name	Red List Category, & Criteria
Animals: Insects	Libellulidae	*Urothemis thomasi* Longfield, 1932		EN C2a(i)
Animals: Fish	Alopiidae	*Alopias vulpinus* (Bonnaterre, 1788)	Thresher Shark	DD
	Carcharhinidae	*Carcharhinus amblyrhynchoides* (Whitley, 1934)	Graceful Shark	LR/nt
	Carcharhinidae	*Carcharhinus amblyrhynchos* (Bleeker, 1856)	Gray Reef Shark	LR/nt
	Carcharhinidae	*Carcharhinus amboinensis* (Müller & Henle, 1839)	Java Shark, Pigeye Shark	DD
	Carcharhinidae	*Carcharhinus brevipinna* (Müller & Henle, 1839)	Spinner Shark	LR/nt
	Carcharhinidae	*Carcharhinus leucas* (Müller & Henle, 1839)	Bull Shark	LR/nt
	Carcharhinidae	*Carcharhinus limbatus* (Valenciennes, 1839)	Blacktip Shark	LR/nt
	Carcharhinidae	*Carcharhinus longimanus* (Poey, 1861)	Oceanic Whitetip Shark, White-tipped Shark, Whitetip Oceanic Shark, Whitetip Shark	VU A2ad+3d+4ad
	Carcharhinidae	*Carcharhinus melanopterus* (Quoy & Gaimard, 1824)	Blacktip Reef Shark	LR/nt
	Carcharhinidae	*Carcharhinus plumbeus* (Nardo, 1827)	Sandbar Shark	LR/nt
	Carcharhinidae	*Galeocerdo cuvier* (Péron & Lesueur, 1822)	Tiger Shark	LR/nt
	Carcharhinidae	*Prionace glauca* (Linnaeus, 1758)	Blue Shark	LR/nt
	Carcharhinidae	*Scoliodon laticaudus* Müller & Henle, 1838	Spadenose Shark	LR/nt
	Carcharhinidae	*Triaenodon obesus* (Rüppell, 1837)	Whitetip Reef Shark	LR/nt
	Centrophoridae	*Centrophorus granulosus* (Bloch & Schneider, 1801)	Gulper Shark	VU A2abd+3d+4d
	Centrophoridae	*Centrophorus tessellatus* Garman, 1906	Mosaic Dogfish, Mosaic Gulper Shark	DD
	Clariidae	*Uegitglanis zammarano*i Gianferrari, 1923		VU B1+2c
	Claroteidae	*Pardiglanis tarabinii* Poll, Lanza & Romoli Sassi, 1972	Giant Catfish	DD
	Cyprinidae	*Barbopsis devecchi* di Caporiacco, 1926		VU D2
	Cyprinidae	*Phreatichthys andruzzii* Vinciguerra, 1824		VU D2
	Dasyatidae	*Taeniura meyeni* Müller & Henle, 1841	Black-blotched Stingray, Black-spotted Stingray, Blotched Fantail Ray, Fantail Stingray, Giant Reef Ray, Round Ribbontail Ray, Speckled Stingray	VU A2ad+3d+4ad
	Dasyatidae	*Urogymnus asperrimus* (Bloch & Schneider, 1801)	Porcupine Ray	VU A1bd, B1+2bcd
	Ginglymostomatidae	*Nebrius ferrugineus* (Lesson, 1830)	Tawny Nurse Shark	VU A2abcd+3cd+4abcd
	Gymnuridae	*Gymnura poecilur*a (Shaw, 1804)	Longtail Butterfly Ray	NT
	Hemigaleidae	*Hemipristis elongatus* Klunzinger, 1871	Fossil Shark, Snaggletooth Shark	VU A2bd+3bd+4bd
	Heterodontidae	*Heterodontus ramalheira* (Smith, 1949)	Whitespotted Bullhead Shark	DD
	Labridae	*Cheilinus undulatus* Rüppell, 1835	Giant Wrasse, Humphead Wrasse, Humphead, Maori Wrasse, Napoleon Wrasse, Truck Wrasse, Undulate Wrasse	EN A2bd+3bd
	Lamnidae	*Isurus oxyrinchus* Rafinesque, 1810	Shortfin Mako	LR/nt
	Mobulidae	*Manta birostris* (Donndorff, 1798)	Devil Fish, Devil Ray, Giant Manta, Manta Ray, Prince Alfred's Ray	NT

Major Group	Family	Species Name	English Common Name	Red List Category, & Criteria
	Mobulidae	*Mobula eregoodootenkee* (Bleeker, 1859)	Pygmy Devilray	NT
	Mobulidae	*Mobula japanica* (Müller & Henle, 1841)	Devilray, Japanese Devilray, Spinetail Devilray, Spinetail Mobula	NT
	Myliobatidae	*Aetobatus narinari* (Euphrasen, 1790)	Bonnetray, Maylan, Spotted Eagle Ray	NT
	Odontaspididae	*Carcharias taurus* Rafinesque, 1810	Grey Nurse Shark, Sand Tiger Shark, Spotted Ragged-tooth Shark	VU A1ab+2d
	Pegasidae	*Eurypegasus draconis* (Linnaeus, 1766)	Little Dragonfish, Short Dragonfish	DD
	Pristidae	*Anoxypristis cuspidata* (Latham, 1794)	Knifetooth Sawfish, Narrow Sawfish, Pointed Sawfish	CR A2bcd+3cd+4bcd
	Pristidae	*Pristis pectinata* Latham, 1794	Smalltooth, Wide Sawfish	CR A2bcd+3cd+4bcd
	Pristidae	*Pristis zijsron* Bleeker, 1851	Narrowsnout Sawfish	CR A2bcd+3cd+4bcd
	Rhincodontidae	*Rhincodon typus* Smith, 1828	Whale Shark	VU A1bd+2d
	Rhinidae	*Rhina ancylostoma* Bloch & Schneider, 1801	Bowmouth Guitarfish, Mud Skate, Shark Ray	VU A2bd+3bd+4bd
	Rhinobatidae	*Rhinobatos thouin* (Anonymous, 1798)	Clubnose Guitarfish	VU A2abd+3bd+4abd
	Rhinopteridae	*Rhinoptera javanica* Müller & Henle, 1841	Flapnose Ray, Javanese Cownose Ray	VU A2d+3cd+4cd
	Rhinochimaeridae	*Neoharriotta pumila* Didier & Stehmann, 1996	Arabian Sicklefin Chimaera	DD
	Rhynchobatidae	*Rhynchobatus djiddensis* (Forsskål, 1775)	Giant Guitarfish, Whitespotted Wedgefish	VU A2d+3d+4d
	Scombridae	*Thunnus alalunga* (Cetti, 1777)	Albacore Tuna	DD
	Scombridae	*Thunnus obesus* (Lowe, 1839)	Bigeye Tuna	VU A1bd
	Scyliorhinidae	*Bythaelurus lutarius* (Springer & D'Aubrey, 1972)	Brown Catshark, Mud Catshark	DD
	Serranidae	*Dermatolepis striolata* (Playfair, 1867)	Smooth Grouper	DD
	Serranidae	*Epinephelus coioides* (Hamilton, 1822)	Estuary Cod, Orange-spotted Grouper	NT
	Serranidae	*Epinephelus fuscoguttatus* (Forsskål, 1775)	Brown-Marbled Grouper	NT
	Serranidae	*Epinephelus lanceolatus* (Bloch, 1790)	Brindle Bass, Brindled Grouper, Giant Grouper, Queensland Groper	VU A2d
	Serranidae	*Epinephelus malabaricus* (Bloch & Schneider, 1801)	Malabar Grouper	NT
	Serranidae	*Epinephelus polyphekadion* (Bleeker, 1849)	Camouflage Grouper	NT
	Sphyrnidae	*Sphyrna lewini* (Griffith & Smith, 1834)	Scalloped Hammerhead	LR/nt
	Sphyrnidae	*Sphyrna mokarran* (Rüppell, 1837)	Great Hammerhead	DD
	Torpedinidae	*Torpedo panthera* Olfers, 1831	Leopard Torpedo	DD
	Torpedinidae	*Torpedo sinuspersici* Olfers, 1831	Gulf Torpedo, Marbled Electric Ray	DD
	Xiphiidae	*Xiphias gladius* Linnaeus, 1758	Swordfish	DD
Animals: Frogs	Bufonidae	*Bufo langanoensis* Largen, Tandy & Tandy, 1978		DD
	Ranidae	*Lanzarana largeni* (Lanza, 1978)		NT
	Ranidae	*Ptychadena filwoha* Largen, 1997		DD
Animals: Birds	Accipitridae	*Circaetus fasciolatus* Kaup, 1850	Southern Banded Snake-eagle	NT
	Accipitridae	*Circus macrourus* (Gmelin, 1770)	Pallid Harrier	NT
	Accipitridae	*Torgos tracheliotos* (Forster, 1791)	Lappet-faced Vulture	VU C1
	Alaudidae	*Heteromirafra archeri* Clarke, 1920	Archer's Lark	CR B1ab(iii,v); C2a(ii)
	Alaudidae	*Mirafra ash*i Colston, 1982	Ash's Lark	EN B1ab(i,ii,iii,v)
	Alaudidae	*Spizocorys obbiensis* Whiterby, 1905	Obbia Lark	DD
	Ardeidae	*Ardeola idae* (Hartlaub, 1860)	Madagascar Pond-heron	EN C2a(ii)
	Charadriidae	*Vanellus gregarius* (Pallas, 1771)	Sociable Lapwing	CR A3bc
	Cisticolidae	*Cisticola restrictus* Traylor, 1967	Tana River Cisticola	DD
	Columbidae	*Columba oliviae* Clarke, 1918	Somali Pigeon	DD
	Columbidae	*Streptopelia reichenowi* (Erlanger, 1901)	White-winged Collared-dove	NT
	Coraciidae	*Coracias garrulus* Linnaeus, 1758	European Roller	NT

Major Group	Family	Species Name	English Common Name	Red List Category, & Criteria
	Falconidae	*Falco naumanni* Fleischer, 1818	Lesser Kestrel	VU A2bce+3bce
	Falconidae	*Falco vespertinus* Linnaeus, 1766	Red-footed Falcon	NT
	Fringillidae	*Carduelis johannis* (Clarke, 1919)	Warsangli Linnet	EN B1ab(iii); C2a(ii)
	Glareolidae	*Glareola nordmanni* Fischer, 1842	Black-winged Pratincole	NT
	Glareolidae	*Glareola ocularis* Verreaux, 1833	Madagascar Pratincole	VU C1
	Hydrobatidae	*Oceanodroma matsudairae* Kuroda, 1922	Matsudaira's Storm-Petrel	DD
	Laridae	*Larus leucophthalmus* Temminck, 1825	White-eyed Gull	NT
	Laridae	*Rynchops flavirostris* Vieillot, 1816	African Skimmer	NT
	Malaconotidae	*Laniarius liberatus* Smith, Arctander, Fjeldså & Amir, 1991	Bulo Burti Boubou	CR D
	Motacillidae	*Anthus melindae* Shelley, 1900	Malindi Pipit	NT
	Muscicapidae	*Cercomela dubia* (Blundell & Lovat, 1899)	Sombre Chat	DD
	Muscicapidae	*Ficedula semitorquata* (Homeyer, 1885)	Semicollared Flycatcher	NT
	Musophagidae	*Tauraco fischeri* (Reichenow, 1878)	Fischer's Turaco	NT
	Otididae	*Eupodotis humilis* (Blyth, 1856)	Little Brown Bustard	NT
	Phalacrocoracidae	*Phalacrocorax nigrogularis* Ogilvie-Grant & Forbes, 1899	Socotra Cormorant	VU A2ce+3ce; B2ab(i,ii,iii,iv,v)
	Phoenicopteridae	*Phoenicopterus minor* Geoffroy Saint-Hilaire, 1798	Lesser Flamingo	NT
	Procellariidae	*Bulweria fallax* Jouanin, 1955	Jouanin's Petrel	NT
	Rallidae	*Crex crex* (Linnaeus, 1758)	Corncrake	NT
	Scolopacidae	*Gallinago media* (Latham, 1787)	Great Snipe	NT
	Scolopacidae	*Limosa limosa* (Linnaeus, 1758)	Black-tailed Godwit	NT
	Sylviidae	*Acrocephalus griseldis* (Hartlaub, 1891)	Basra Reed-warbler	EN A2bc+3bc
	Sylviidae	*Sylvietta philippae* Williams, 1955	Short-billed Crombec	DD
	Threskiornithidae	*Geronticus eremita* (Linnaeus, 1758)	Northern Bald Ibis	CR C2a(ii)
	Turdidae	*Turdus ludoviciae* (Phillips, 1895)	Somali Thrush	CR A2c+3c
Animals: Mammals	Bovidae	*Alcelaphus buselaphus* (Pallas, 1766)	Common Hartebeest, Hartebeest	LR/cd
	Bovidae	*Ammodorcas clarkei* (Thomas, 1891)	Clarke's Gazelle, Dibatag	VU C1
	Bovidae	*Beatragus hunteri* (P.L.Sclater, 1889)	Hirola, Hunter's Antelope, Hunter's Hartebeest	CR A1a
	Bovidae	*Cephalophus harveyi* (Thomas, 1893)	Harvey's Duiker, Harvey's Red Duiker	LR/cd
	Bovidae	*Damaliscus lunatus* (Burchell, 1823)	Tsessebe	LR/cd
	Bovidae	*Dorcatragus megalotis* (Menges, 1894)	Beira Antelope, Beira	VU C1
	Bovidae	*Gazella dorcas* (Linnaeus, 1758)	Dorcas Gazelle	VU A1a
	Bovidae	*Gazella granti* Brooke, 1872	Grant's Gazelle	LR/cd
	Bovidae	*Gazella soemmerringii* (Cretzschmar, 1826)	Soemmerring's Gazelle	VU C1
	Bovidae	*Gazella spekei* Blyth, 1863	Speke's Gazelle	VU C1
	Bovidae	*Kobus ellipsiprymnus* (Ogilby, 1833)	Waterbuck	LR/cd
	Bovidae	*Litocranius walleri* (Brooke, 1879)	Gerenuk	LR/cd
	Bovidae	*Madoqua piacentinï* Drake-Brockman, 1911	Silver Dik-dik	VU C1
	Bovidae	*Oreotragus oreotragus* (Zimmermann, 1783)	Klipspringer	LR/cd
	Bovidae	*Oryx gazella* (Linnaeus, 1758)	Gemsbok	LR/cd
	Bovidae	*Ourebia ourebi* (Zimmermann, 1783)	Oribi	LR/cd
	Bovidae	*Syncerus caffer* (Sparrman, 1779)	African Buffalo	LR/cd

Major Group	Family	Species Name	English Common Name	Red List Category, & Criteria
	Bovidae	*Tragelaphus imberbis* (Blyth, 1869)	Lesser Kudu	LR/cd
	Bovidae	*Tragelaphus strepsiceros* (Pallas, 1766)	Greater Kudu	LR/cd
	Canidae	*Vulpes rueppelli* (Schinz, 1825)	Rüeppell's Fox, Rüppel's Fox, Rüppell's Sand Fox, Sand Fox	DD
	Cercopithecidae	*Papio hamadryas* (Linnaeus, 1758)	Hamadryas Baboon, Sacred Baboon	LR/nt
	Chrysochloridae	*Calcochloris tytonis* (Simonetta, 1968)	Somali Golden Mole	DD
	Ctenodactylidae	*Pectinator spekei* Blyth, 1856	Speke's Pectinator	DD
	Delphinidae	*Feresa attenuata* Gray, 1874	Pygmy Killer Whale, Slender Blackfish	DD
	Delphinidae	*Lagenodelphis hosei* Fraser, 1956	Fraser's Dolphin, Sarawak Dolphin	DD
	Delphinidae	*Sousa chinensis* (Osbeck, 1765)	Chinese White Dolphin, Indo-Pacific Humpbacked Dolphin	DD
	Delphinidae	*Stenella longirostris* (Gray, 1828)	Long-Beaked Dolphin, Long-snouted Dolphin, Spinner Dolphin	LR/cd
	Delphinidae	*Steno bredanensis* (G. Cuvier in Lesson, 1828)	Rough-Toothed Dolphin	DD
	Delphinidae	*Tursiops aduncus* (Ehrenberg, 1833)	Indian Ocean Bottlenose Dolphin, Indo-Pacific Bottlenose Dolphin	DD
	Dugongidae	*Dugong dugon* (Müller, 1776)	Dugong, Sea Cow	VU A2bcd
	Elephantidae	*Loxodonta africana* (Blumenbach, 1797)	African Elephant	VU A2a
	Emballonuridae	*Taphozous hamiltoni* Thomas, 1920	Hamilton's Tomb Bat	NT
	Equidae	*Equus africanus* (Heuglin & Fitzinger, 1866)	African Ass, African Wild Ass, Ass	CR A1b
	Equidae	*Equus grevyi* Oustalet, 1882	Grevy's Zebra	EN A1a+2c
	Felidae	*Acinonyx jubatus* (Schreber, 1775)	Cheetah, Hunting Leopard	VU C2a(i)
	Felidae	*Panthera leo* (Linnaeus, 1758)	African Lion, Lion	VU A2abcd
	Galagonidae	*Galago gallarum* Thomas, 1901	Somali Galago, Somali Lesser Galago	LR/nt
	Galagonidae	*Galago zanzibaricus* Matschie, 1893	Matundu Dwarf Galago, Zanzibar Bushbaby, Zanzibar Galago	LR/nt
	Giraffidae	*Giraffa camelopardalis* (Linnaeus, 1758)	Giraffe	LR/cd
	Hippopotamidae	*Hippopotamus amphibius* Linnaeus, 1758	Common Hippopotamus, Hippopotamus, Large Hippo	VU A4cd
	Hipposideridae	*Hipposideros marungensis* Noack, 1887		NT
	Hipposideridae	*Hipposideros megalotis* (Heuglin, 1862)	Ethiopian Large-eared Roundleaf Bat	NT
	Hyaenidae	*Crocuta crocuta* (Erxleben, 1777)	Spotted Hyaena	LR/cd
	Hyaenidae	*Hyaena hyaena* (Linnaeus, 1758)	Striped Hyaena	LR/nt
	Macroscelididae	*Elephantulus revoili* (Huet, 1881)	Somali Elephant Shrew, Somali Sengi	DD
	Manidae	*Manis temminckii* Smuts, 1832	Cape Pangolin, Ground Pangolin, Scaly Anteater, South African Pangolin, Temminck's Ground Pangolin	LR/nt
	Muridae	*Ammodillus imbellis* (de Winton, 1898)	Ammodile	DD
	Muridae	*Arvicanthis somalicus* Thomas, 1903	Somali Grass Rat	DD
	Muridae	*Gerbillus acticola* Thomas, 1918	Berbera Gerbil	DD
	Muridae	*Gerbillus brockmani* (Thomas, 1910)	Brockman's Gerbil	DD
	Muridae	*Gerbillus dunni* Thomas, 1904	Somalia Gerbil	DD
	Muridae	*Gerbillus rosalinda* St Leger, 1929	Rosalinda Gerbil	DD
	Muridae	*Gerbillus somalicus* (Thomas, 1910)	Somalian Gerbil	DD
	Muridae	*Grammomys caniceps* Hutterer & Dieterlen, 1984	Gray-Headed Thicket Rat	DD
	Nycteridae	*Nycteris aurita* Andersen, 1912		DD
	Nycteridae	*Nycteris parisii* de Beaux, 1924	Parissi's Slit-faced Bat	DD
	Rhinolophidae	*Rhinolophus blasii* Peters, 1866	Blasius's Horseshoe Bat	NT
	Rhinolophidae	*Rhinolophus eloquens* K. Andersen, 1905	Eloquent Horseshoe Bat	DD
	Rhinopomatidae	Rhinopoma macinnesi Hayman, 1937	Macinnes's Mouse-tailed Bat	VU D1

Major Group	Family	Species Name	English Common Name	Red List Category, & Criteria
	Soricidae	*Crocidura nana* Dobson, 1890	Dwarf White-Toothed Shrew	DD
	Vespertilionidae	*Hypsugo eisentrauti* (Hill, 1968)	Eisentraut's Pipistrelle	DD
	Vespertilionidae	*Neoromicia helios* (Heller, 1912)	Heller's Pipistrelle	DD
	Vespertilionidae	*Scotoecus albigula* Thomas, 1909	White-bellied Lesser House Bat	DD
	Vespertilionidae	*Scotoecus hindei* Thomas, 1901	Hinde's Lesser House Bat	DD
	Vespertilionidae	*Scotoecus hirundo* de Winton, 1899	Dark-winged Lesser House Bat	DD
	Viverridae	*Genetta abyssinica* (Rüppell, 1836)	Abyssinian Genet	DD
	Ziphiidae	*Indopacetus pacificus* (Longman, 1926)	Indo-Pacific Beaked Whale, Longman's Beaked Whale	DD
	Ziphiidae	*Mesoplodon densirostris* (Blainville, 1817)	Blainville's Beaked Whale	DD
	Ziphiidae	*Mesoplodon ginkgodens* Nishiwaki & Kamiya, 1958	Ginkgo-toothed Beaked Whale	DD
Animals: Tortoises & Turtles	Cheloniidae	*Chelonia mydas* (Linnaeus, 1758)	Green Turtle	EN A2bd
	Cheloniidae	*Eretmochelys imbricata* (Linnaeus, 1766)	Hawksbill Turtle	CR A1bd
	Testudinidae	*Geochelone sulcata* (Miller, 1779)	African Spurred Tortoise, Grooved Tortoise	VU A1cd
Animals: Snails	Ampullaridae	*Pila speciosa* Philippi, 1849		VU B1+2bc
	Neritidae	*Neritina natalensis* Reeve		DD
Plants: Conifers	Cupressaceae	*Juniperus procera* Hochst. ex Endl.	African Pencil Cedar, East African Cedarwood	LR/nt
Plants: Flowering Plants	Aloaceae	*Aloe eminens* Reynolds & Bally		LR/nt
	Anacardiaceae	*Pistacia aethiopica* Kokwaro		LR/nt
	Boraginaceae	*Cordia obovata* Balf.f.		LR/nt
	Boraginaceae	*Cordia suckertii* Chiov.		LR/nt
	Burseraceae	*Boswellia sacra* Fleuckiger		LR/nt
	Burseraceae	*Commiphora alata* Chiov.		VU D2
	Burseraceae	*Commiphora albiflora* Engl.		LR/nt
	Burseraceae	*Commiphora chaetocarpa* J.B.Gillett		VU D2
	Burseraceae	*Commiphora ciliata* Vollesen		LR/nt
	Burseraceae	*Commiphora corrugata* J.B.Gillett & K.Vollesen		LR/nt
	Burseraceae	*Commiphora guidottii* Chiov.		LR/nt
	Burseraceae	*Commiphora hodai* Sprague		LR/nt
	Burseraceae	*Commiphora obovata* Chiov.		LR/nt
	Burseraceae	*Commiphora pseudopaolii* J.B.Gillett		LR/nt
	Burseraceae	*Commiphora sphaerophylla* Chiov.		LR/nt
	Burseraceae	*Commiphora sulcata* Chiov.		LR/nt
	Burseraceae	*Commiphora truncata* Engl.		LR/nt
	Burseraceae	*Commiphora unilobata* J.B.Gillett & K.Vollesen		LR/nt
	Combretaceae	*Conocarpus lancifolius* Engl. & Diels		LR/nt
	Dirachmaceae	*Dirachma somalensis* D.A.Link		EN C2b, D
	Dracaenaceae	*Dracaena ombet* Kotschy & Peyr.		EN A1cd
	Ebenaceae	*Diospyros greenwayi* F. White		VU B1+2c
	Ebenaceae	*Diospyros wajirensis* F. White		LR/nt
	Euphorbiaceae	*Croton megalocarpoides* Friis & Gilbert		LR/nt
	Euphorbiaceae	*Croton talaeporos* R.-Sm.		LR/nt
	Euphorbiaceae	*Euphorbia noxia* Pax		VU D2
	Euphorbiaceae	*Euphorbia thulinii* S.Carter		VU D2

Major Group	Family	Species Name	English Common	Red List Category, & Criteria
	Leguminosae	*Acacia ankokib* Chiov.		LR/nt
	Leguminosae	*Acacia caraniana* Chiov.		LR/nt
	Leguminosae	*Acacia cernua* M.Thulin & A.S.Hassan		LR/nt
	Leguminosae	*Acacia condyloclada* Chiov.		LR/nt
	Leguminosae	*Acacia densispina* M.Thulin		VU B1+2c
	Leguminosae	*Acacia flagellaris* M.Thulin		VU B1+2c
	Leguminosae	*Acacia manubensis* J.H.Ross		VU B1+2c
	Leguminosae	*Acacia moggii* M.Thulin & M.Tardelli		LR/nt
	Leguminosae	*Acacia ochracea* M.Thulin & A.S.Hassan		LR/nt
	Leguminosae	*Acacia sarcophylla* Chiov.		LR/nt
	Leguminosae	*Adenopodia rotundifolia* (Harms) Brenan		VU B1+2c
	Leguminosae	*Albizia obbiadensis* (Chiov.) Brenan		VU B1+2c
	Leguminosae	*Cordeauxia edulis* Hemsley		VU A2cd
	Leguminosae	*Cordyla somalensis* J.B.Gillett		LR/nt
	Leguminosae	*Dalbergia eremicola* Polh.		LR/nt
	Leguminosae	*Delonix baccal* (Chiov.) Baker f.		LR/nt
	Leguminosae	*Dialium orientale* Baker.f.		LR/nt
	Leguminosae	*Dichrostachys kirkii* Benth.		LR/nt
	Leguminosae	*Dicraeopetalum stipulare* Harms		VU A2cd
	Leguminosae	*Lonchocarpus kanurii* Brenan & J.B.Gillett		LR/nt
	Leguminosae	*Newtonia erlangeri* (Harms) Brenan		LR/nt
	Leguminosae	*Parkinsonia raimondoi* Brenan		LR/nt
	Malvaceae	*Symphyochlamys erlangeri* Guerke		LR/nt
	Palmae	*Livistona carinensis* (Chiov.) Dransf. & Uhl		VU B1+2c
	Rubiaceae	*Wendlandia arabica* DC.		LR/nt
	Sapotaceae	*Mimusops angel* Chiov.		LR/nt
	Sterculiaceae	*Hildegardia gillettii* L.J.Dorr & L.C.Barnett		EN C2b, D
	Sapindaceae	*Bottegoa insignis* Chiov.		LR/nt
	Sapindaceae	*Camptolepis ramiflora* (Taub.) Radjk.		VU B1+2c
	Sapindaceae	*Haplocoelum trigonocarpum* Radlk.		LR/nt
	Umbelliferae	*Steganotaenia commiphoroides* M.Thulin		LR/nt

Annex 6: Local Biodiversity Strategy and Action Plans for Somaliland and Puntland

Contents	Somaliland	Puntland
Vision	"By 2050 Biodiversity of Somaliland is appreciated properly managed and sustainably utilized".	"By 2050, biodiversity is managed, restored and exploited in a manner maintaining healthy ecosystem services, and delivering benefits essential for the present and future generations."
Principles	• Biological resources are properly utilized and equitable access to benefits and obligations arising from the use of these resources • Consistency and integration of biodiversity conservation strategy with the Somaliland National Development Plan • Biological resources shall be used by not only this generation but also by the coming generation • Policy (NBSAP) support through all levels (National, Regional, District and community level) • Sustainable use of Bio Diversity of Somaliland and local production should be encouraged • Education and Public Awareness to be implemented in an efficient way focussing on biological resources • User's of Biodiversity should minimize the environmental impacts and with the principle of "Polluters Pays" • Government should encourage public enterprise	• Sustainable use of Biological resources with fair distribution of benefits and obligations while managing these resources • NBSAP and the Puntland overall Development Plan are based on mutual complementarity rather than competition • Inter-generational consideration in the use of biological resources; strengthening the stewardship role of present generation for better resource availability for future generations • Attaining political support from all levels (National, Regional, District and community level) for NBSAP • Encouraging entrepreneurship with local and community based management and value added production of biological resources • Education and Public Awareness for biodiversity conservation • "Polluters Pays" Principles
Goals Strategic Goal A: Address the underlying causes of	**In Somaliland, the drivers of biodiversity are adequately understood and the response**	**In Puntland, the existing cushion for environment in the 2nd 5-year Development**

biodiversity loss by mainstreaming biodiversity across government and society	**measures are incorporated in the development agendas of the government and other key actors (civil society and private sector)**	**Plan is appropriately availed for biodiversity conservation, however in the 3rd 5-year plan explicit measures of sustainable biodiversity management are incorporated for enhanced mainstreaming.**
Target 1 By 2022, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	• Promote public awareness and understanding of the values of biodiversity and the need for conservation, protection and sustainable use/management through the dissemination of information on the values of biodiversity (species and ecosystems) and its relevance to human survival; • Somaliland's stakeholders at national and district levels to support biodiversity policies	• 2016 workshops, training, focus group discussion are held in both and urban , • By 2019 there should be in placed best practices for sustainably conserving biodiversity by using friendly mechanisms. • 2021 schools curriculums have components of Environmental Education • By 2021 religious leaders should held conferences talking about importance of biological life diversity as Islam is concerned • By 2022 rural vocational Environmental schools should be developed
Target 2 By 2023, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	• By 2020, Contribute to the successful implementation of Somaliland NBSAP by conducting an advocacy campaign to convince Somaliland leaders to prioritize biodiversity conservation, protection and sustainable management by mainstreaming them into the Somaliland development plan and providing appropriate financial and human resources. • By 2016, the Environment Ministry of Puntland will proactively take up the mainstreaming agenda with the Planning and Finance Departments of Somaliland. • By 2021, the Somaliland government conducts systematic assessing/accounting of the	• Proactively engaging Planning and International Cooperation Department for mainstreaming biodiversity in Puntland Development plans • By 2016 physical inventories of biological associated ecosystem is developed. • By 2017 programs reflecting biodiversity and ecosystem values should incorporated in national and local level plans and initiated. • By 2016 tools and mechanisms that assess biodiversity in term of social, economic and financial should be integrated and initiated. • By 2016 national strategic environmental plan should be in place • By 2017 Ministry of planning and international cooperation should include its

	biodiversity share in the GDP and set aside proportionate finances for its sustainable management. • By 2023, the Somaliland government mobilizing proportionate funding from the international community through multiple windows including carbon credits.	five year master plan a component of biodiversity conservation programs,
Target 3 By 2021, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	• By 2016, the subsidies are properly assessed and examined that damage and/or benefiting the biodiversity of Somaliland and action plan for addressing these subsidies are formulated. • By 2017, the government shall commence the phasing out of the subsidies, with special emphasize on the that damage biodiversity • By 2020 all the harmful subsidies are completely phased out and measures are taken to provide biodiversity friendly substitute phased out subsidies.	• By 2017 potential tourist areas in Puntland should be conserved by giving incentives to the local communities • By 2017 charcoal burners should be given other alternative income source Eg Bee Keeping, collection of recycle waste and sell it from recycling companies • By 2018 subsides will be given to companies of LPG gas, Solar and other energy sources companies who are environmental friendly • By 2019 incentives and subsides should be given to the communities that promote best practices to conserve biodiversity • By 2021 companies that promote harmful materials that effect environment should be punished by paying high taxation
Target 4 By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	• By 2016 government facilitate the interface with business enterprise and communities to commence the demonstration of conservation and sustainable use of biodiversity resources in all representative eco-regions of Somaliland. • By 2016, Somaliland government commence the implementation of resource mobilization strategy formulated as support document to	• By 2018 government and business enterprises should work in a cooperating manner to promote biodiversity conservation. • By 2017 development partners and stakeholder should make a priority for funding biodiversity and ecosystem conservation programs • By 2019 business enterprises and

	this NBSAP • By 2019 business enterprises and government should promote companies that can demonstrate the sustainable management of biodiversity products and services.	government should promote companies that recycle waste
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	**Reduce the direct pressures on the biological diversity of Somaliland and promote conservation and sustainable use of the component of biodiversity**	**Reduce the direct pressures on Puntland Biological Diversity and promote wise use of Natural Resources**
Target 5. By 2024, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	• By 2016, the Somaliland government commences the stock taking of its renewable natural resources both terrestrial and coastal and completes this by 2017. • By 2016 all the efficacy of existing protected areas are adequately assessed and additional protected areas 4 terrestrial and 3 marine are notified. • By 2017, concrete steps are planned for reducing the loss of natural habitat are taken that include addressing the drivers including, but not limited to, charcoal led deforestation, invasive species, rangelands degradation, mangrove & coral reefs degradation, institutional limitations, etc. • By 2018, the Eco zone specific rehabilitation/conservation schemes implemented through the domestic and ODA (both multilateral and bi-lateral) financial windows • By 2022, the loss of the five representative habitats of Somaliland are reduced to 40% compared to the present situation • By 2024 at least 40% of all the Protected	• The government of Puntland has agreed with LPG imported companies such as (Punt Gas and Sahal gas) and subsidized them. • MoEWT plans to conduct 3 feasibility studies on local potential natural energy sources such as solar, wind, coal, waves etc. and MoEWT and LPG companies will install 5 ISO tanks at Bossaso port • By 2016 all the efficacy of existing protected areas are adequately assessed and additional protected areas 4 terrestrial and 3 marine are notified. • Rehabilitation of 500 km2 degraded rangelands such as those affected by moving sand dunes, water erosions etc. • Establishment of integrated biodiversity projects in all the representative eco-regions, namely Alula, Dhahar, Eyl, dharor and Nugal valleys • Create alternative livelihoods and income generation activities through skills training and development of innovative entrepreneurship for 500,000 households • By 2024 at least 30% of all the Protected

	Areas (PA) and Marine Protected Areas (MPA) are effectively managed and the dossier for at least 2 representative protected areas are prepared as Biosphere Reserves under the Man and Biosphere Programme of UNESCO	Areas and Marine Protected Areas are effectively managed and the dossier for at least 2 representative protected areas are prepared as Biosphere Reserves under the Man and Biosphere Programme of UNESCO
Target 6 By 2027 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	By 2026, while focussing on 4 MPAs along the coast of the Somaliland, coastal resources such as crustaceans, mangroves, coral reefs, etc. are sustainably managed and the on-going degradation is reduced by 40% through integrated coastal resources management in general and community based interventions in particular. The interventions shall include the following: • Strengthening the capacity of fishery department, coastal community organizations and associated private sector companies in integrated sustainable resources management that focus on conservation, value added sustainable use and fair & transparent distribution of benefits and obligations arising from the management of coastal biodiversity, • Restoration of coral reef areas through mangrove plantations in Sa,adudin & Eibad island, Khora Shora and Laskorey • Provide social services for Coastal people in Mait Island (RABSHI) Sa,adudin & Eibad island, Khora Shora and Laskorey and Develop appropriate conservation and	By 2026, all marine resources including aquatic plants are soundly managed and harvest sustainably through reducing illegal fishing and waste disposal by 40% and applying conservation measures which will encourage recovery plans for endangered and threatened aquatic species through: • Strengthening the capacity of PMPF and increasing their number into 6 thousand • Restoration of coral reef areas through mangrove plantations in Alula and Qandala coastal areas • Provide social services for Coastal people in Eyl, Qandala, Lasqoray and Alula districts • Develop infrastructures of coastal areas.

	sustainable management infrastructures in these coastal areas.	
Target 7 By 2027 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	By 2025, significant areas under agriculture, aquaculture and forestry are sustainably managed by diversifying the management regime through integrated watershed management, water harvesting, climate smart agriculture, conserving the indigenous genome/agriculture varieties, community based integrated aquaculture, diversify agricultural crops, encourage salt & drought tolerant crops By 2027 a readiness programme for Reducing Emissions from Deforestation and Degradation of Forests (REDD) is commenced and 2 areas under Golis Junipers and 1 site for Mangrove forests are set aside for REDD implementation in Somaliland	By 2027, areas under agriculture, aquaculture and forestry are improved through diversifying their components by 40% to ensure biodiversity richness and conservation through: • Introduce and promote appropriates agro-forestry practices in Galgala, Jibagalle, and Lasa roh. • Diversify agricultural crops • Encourage salt and drought tolerant crops
Target 8 By 2024, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	By 2018 toxic waste along the Somaliland coast line are properly assessed and measures for abating this pollution are in place. This include both terrestrial and marine/coastal. By 2022 mechanism is in place and demonstrated to bring down the level of pollutants to limits that can be absorbed without damaging the biodiversity.	By 2024, toxic disposal in Puntland marine water including from excess nutrients load, have been feasible brought close to levels that are environment can absorb, sink and not harmful to ecosystem function and biodiversity productivity as well through: • Strengthening the capacity of PMF and increasing their number into 6 thousand • Reduce use of fertilizers for agriculture into 10% or less • Develop solid waste management policies and waste recycling strategies • Initiate plans for avoiding nitrogen deposition

		• Promote vegetation cover for bare areas in dabar valley areas
Target 9 By 2026, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	By 2017 the extent of area under Prosopis and cactus in Somaliland is adequately assessed and management plan for eradication is in place. By 2018 the nature and extent of Indian crow and other invasive animal/bird species are assessed and management plan in place By 2020, the eradication is demonstrated in selected sites and the large scale eradication/management is planned By 2025 at least 20% of the invasive species are eradicated and the control mechanism of 40% of the prioritized invasive species is in place	By 2017, invasive alien species and pathways are identified, eradicated by 30% and put in place measures that can prevent their introduction and establishment through: • Identify current invasive species in Puntland • Carry out interventions which can control invasive species and finally eradicate • Establish one Herbarium and two zoos for survival of critically endangered species and genes. By 2024 at least 20% of the invasive species are eradicated and the control mechanism of 40% of the prioritized invasive species is in place
Target 10 By 2023, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	By 2023, the multiple anthropogenic pressures on coral reefs near the border of Djibouti and other sites on the coast of Somaliland and the Junipers forest of Golis range that are affected by climate change are diminished by 30%, so as to sustain their integrity and functioning	By 2023, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems affected by climate change are diminished by 40%, so as to sustain their integrity and functioning: • Promote sustainable fishery in Alula, Eyl, Lasqoray and Bosaso districts. • Introduction and restoration of mangroves in Hafun, Alula and Qandala. • Protection of climate impacted ecosystems such as dharor valley, coastal areas like Hafun, Eyl, and Benderbayla.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	**To status of biodiversity is improved by safeguarding ecosystems, species and genetic diversity in Somaliland by achieving the following targets:**	**To status of biodiversity is improved by safeguarding ecosystems, species and genetic diversity in Puntland by attaining the following targets:**

Target 11 By 2025, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	By 2025, at least 33% of the coastal and marine area especially the areas of particular ecological importance are conserved and protected. This includes conservation and sustainable management of coastal resources such as Mangroves (Avacinea and Rizophora Mercata), Coral Reefs, sea birds, crustaceans and pelagic fish, migratory birds, Breeding site for turtles and terrestrial resources such as Blanates Egyptica (Kulan), Wildlife (Somarin Gazel, Pelsan Gazel. Ostrich, Garnuug and Dick-Dik), koribustard in the following potential/existing protected areas: • Sa,adudin and Eibad island • Marshland/wetland • Zails –Karin • Laskorey • Khora Shora in Karin • Mait Island (RABSHI)	By 2025, at least 33% of the coastal and marine area especially the areas of particular ecological importance are conserved and protected. This includes: I. Eyl coastal line II. Calula coastal line III. Las'Qoray coastal line • By 2020, at least three fish bonds –fish farming demo plots- established in major fishing zones of Puntland coastline areas • By 2020, at least 25% of terrestrial & inland water resources rehabilitated and managed (this includes; watershed management, water catchment rehab..)
Target 12 By 2023 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	• By 2016, the exact status of various key wild fauna and flora is assessed • By 2017, management plan for reversing the endangered status is in place with flagship species notified • By 2018, implementation of the management is in place • The focus of this planning and implementation process will be on all the zones, however specifically the coastal belt and the Golis mountain range. • Agriculture biodiversity will also be focused • by 2023, 35% of the forest canopy restored; endemic threatened species of Acacia & Angel tree species afforested and reforested	• By 2016, the exact status of various key wild fauna and flora is assessed • By 2017, management plan for reversing the endangered status is in place with flagship species notified • By 2019, implementation of the management is in place • By 2023, Degazzate (5) previous rangeland enclosures and other demarcated sites for ecological protection and conservation in Puntland regions • by 2023, 35% of the forest canopy restored; endemic threatened species of Acacia & Angel tree species afforested and reforested (Sool, Karkar, Sanag & Bari)

Target 13 By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	• By 2017, the status of Non-wooded Forest Products (NWFP) such as Frankincense , Myrrh, medicinal and aromatic plants of the Golis range are adequately assessed and elaborate plan for sustainable management is in place. • By 2018, the implementation of the management plan is commenced and • By 2020, at least two systematic Gene & Seed Banks are set up to ensure the arrest of genetic erosion in agriculture varieties	• by 2020, promote improved management of Frankincense tree species including the Commiphora; reseeding, exploitation and developing strategic marketing routes and protected pricing • by 2020, establish at least two sophisticated Gene Bank and seed bank to keep and maintain the different genes and seed species restored in these banks
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services	**Enhance the benefits to all from biodiversity and ecosystem services in Somaliland, with specific emphasis on marginalized groups**	**Enhance the benefits to all from biodiversity and ecosystem services in Puntland**
Target 14 By 2024, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	• By 2017, assess the distribution and access of the benefits and obligation arising from the use of biodiversity in Somaliland • By 2020, document and institutionalize the indigenous knowledge(tacit knowledge) and increase the equitable resource sharing of the local community • By 2024, improve the distribution and accessibility by 35% from the current level, with particular focus on the vulnerable groups in the ecosystems that provide essential services to these groups (poor, vulnerable, women, unemployed youth, indigenous groups) •	• By 2020, improve the accessibility (30%) of the vulnerable groups in the ecosystems that provide essential services to these groups (poor, vulnerable, women, and youth, indigenous communities) • By 2020, document and institutionalize the indigenous knowledge (tacit knowledge) and increase the equitable resource sharing of the local community • By 2024, improve the distribution and accessibility by 30% from the current level, with particular focus on the vulnerable groups in the ecosystems that provide essential services to these groups (poor, vulnerable, women, unemployed youth, indigenous groups)

Target 15 By 2027, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	• By 2017, the carbon stock assessment in the Golis range and Mangrove zone is done • By 2022, management plan for enhancing 15% of the carbon stock in the Golis and other forest type is commenced. This includes measures such as protection, afforestation & re-afforestation. • By 2026, at least 30% of the degraded mangrove forests, coral reefs and other coastal biodiversity spots are restored and the management plan of the carbon stock enhancement to 20% is kicked off, with specific focus on carbon sequestration	• By 2027, at least 33% of the degraded coastal forest restored and re-afforested – Mangroves (up to 40% of carbon sequestration) • By 2025, 30% of the terrestrial forest enhanced- afforestation & re-afforestation (17-25% carbon sequestration)
Target 16 By 2017, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	By 2016, in Somaliland, the status of the fair and equitable sharing of benefits arising from the utilization of biodiversity products and services is assessed and enforcement is in place by incorporating the Nagoya Protocol in to the national policy and planning framework such as Policies, laws, strategies and plans.	By 2016, in Puntland, the status of the fair and equitable sharing of benefits arising from the utilization of biodiversity products and services is assessed and enforcement is in place by incorporating the Nagoya Protocol in to the national policy and planning framework such as Policies, laws, strategies and plans.
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building	**The implementation of participatory planning, knowledge management and capacity building is enhanced in Somaliland**	**In Puntland the implementation of participatory planning, knowledge management and capacity building is enhanced**
Target 17 By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	By June 2015, Somaliland has developed and finalized the Local Biodiversity Strategy and Action Plan and is mainstreamed through incorporation in the National Biodiversity Strategy and Action Plan	By June 2015, Puntland has developed and finalized the Local Biodiversity Strategy and Action Plan and is mainstreamed through incorporation in the National Biodiversity Strategy and Action Plan
Target 18	• By 2015, in Somaliland, the compatibility of	• By 2015, in Puntland, the compatibility of

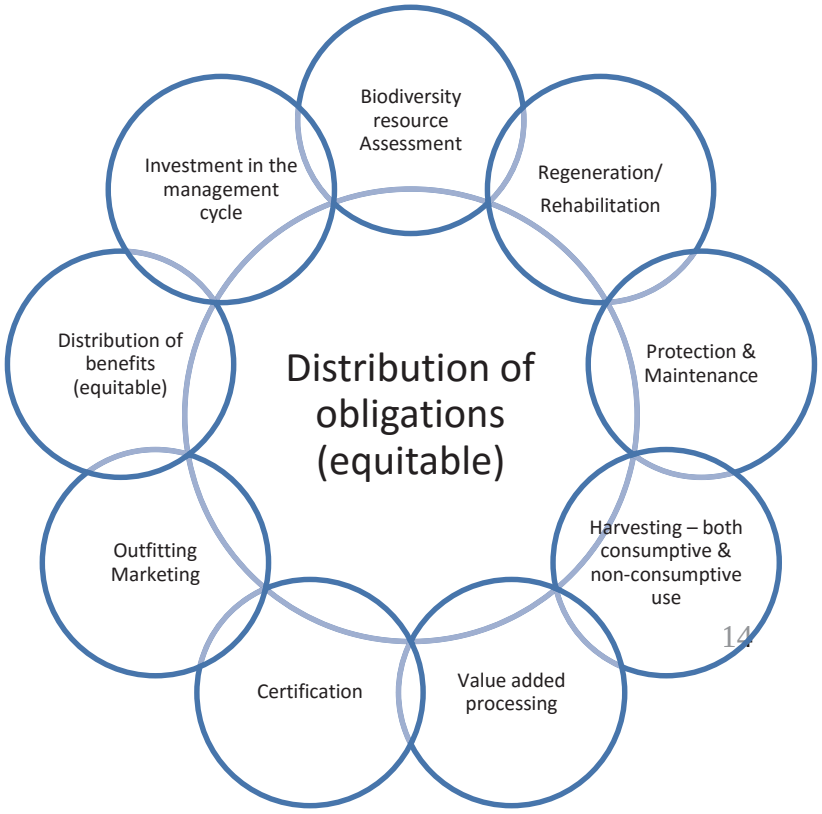
By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	traditional knowledge and management practices are assessed with reference to its grafting in the government sponsored management system and prevailing knowledge stream • By 2015, these elements are incorporated in the Local Biodiversity Strategy and Action Plan • By 2018, the grafted management knowledge and practices are mainstreamed in the demonstration projects and initiatives	traditional knowledge and management practices are assessed with reference to its grafting in the government sponsored management system and prevailing knowledge stream • By 2015, these elements are incorporated in the Local Biodiversity Strategy and Action Plan • By 2018, the grafted management knowledge and practices are mainstreamed in the demonstration projects and initiatives
Target 19 By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	• In Somaliland, by 2016, the knowledge and technology gap assessment is done with reference to the requirements of sustainable biodiversity management • By 2017, a two-track approach of transferring of technology for select initiatives is in place and capacity building in further disseminating the knowledge and technology is commenced • By 2020, essential modern technology and knowledge is demonstrated in at least four initiatives each in one eco-zones	• In Puntland, by 2016, the knowledge and technology gap assessment is done with reference to the requirements of sustainable biodiversity management • By 2017, a two-track approach of transferring of technology for select initiatives is in place and capacity building in further disseminating the knowledge and technology is commenced • By 2020, essential modern technology and knowledge is demonstrated in at least four initiatives each in one eco-zones
Target 20 By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and	• By 2015, in Somaliland, the exact resource requirements for sustainable biodiversity management will be assessed in Somaliland • By 2015, a three track approach will be adopted: mobilizing resources through the local resources such entrepreneurs, private companies, government resources, diaspora,	• By 2015, Puntland, the exact resource requirements for sustainable biodiversity management will be assessed in Somaliland • By 2015, a three track approach will be adopted: mobilizing resources through the local resources such entrepreneurs, private companies, government resources, diaspora,

agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	charity groups, etc. b, through enhance value-added management of the biodiversity products and services and c, convention bi-lateral and multi-lateral donors. • By 2015, multiple PIFs for GEF 6 will be in place and preparation for Green Climate Fund (for adaptation and mitigation) carried out. • By 2020, the resource base is at least doubled to the present day resource map	charity groups, etc. b, through enhance value-added management of the biodiversity products and services and c, convention bi-lateral and multi-lateral donors. • By 2015, multiple PIFs for GEF 6 will be in place and preparation for Green Climate Fund (for adaptation and mitigation) carried out. • By 2020, the resource base is at least doubled to the present day resource map

Annex 7: Cohesive Management flow chart for Conservation and Sustainable use of biodiversity (non-wooded forest/landscape products)

Phases of biodiversity resource management

1. Biodiversity resource Assessment
2. Regeneration/Rehabilitation
3. Protection & Maintenance
4. Harvesting – both consumptive & non-consumptive use
5. Value added processing
6. Certification
7. Outfitting/Marketing
8. Distribution of benefits (equitable)
9. Investment for further improvement in the management cycle
10. Distribution of obligations (equitable)



Skills required for the effective implementation of the above model, availability vs. requirements:

Category of skills	Stakeholders' possession vs. requirement							
	Government		NGOs		Community		Private	
	Exist	Need	Exist	Need	Exist	Need	Exist	Need
Resource Assessment skills such as surveys, etc.	*	***	*	***	**	**	*	**
Rehabilitation skills	*	***	*	**	*	***	*	**
Motivation, mobilization and organization	*	***	***	***	**	***	**	***
Conflict resolution	*	***	**	***	**	***	NA	NA
Assertive communication	**	***	*	***	*	***	**	***
Interpersonal and harmonization	*	***	*	***	*	***	**	***
Effective facilitation and presentation	**	***	**	***	*	***	**	***
Prioritization and time management	**	***	**	***	*	***	**	***
GIS and Remote Sensing	**	***	*	***	0	*	NA	NA
Calculation of carrying capacity of the resource	**	***	0	**	*	**	0	*
Regenerative and tending skills	**	***	*	**	**	***	0	*
Intermediate harvesting skills such as culling, pruning, thinning, etc.	**	***	0	**	**	***	*	***
Identification and potential assessment skills	*	***	*	**	*	**	*	***
Medicinal, food, etc. related values identification skills	*	***	*	**	**	***	*	***

Appropriate harvesting	*	***	0	*	**	***	*	***
Efficient utilization skills	*	***	*	***	*	***	*	***
Seasoning skills	**	***	0	*	*	**	*	***
Marketing	*	***	0	**	*	***	**	***
Entrepreneurial skills	0	**	*	***	*	***	**	***
Understanding the role of all other stakeholders	*	***	**	***	*	***	**	**
Negotiation skills	*	***	*	***	*	***	**	**
Lobbying skills	0	**	**	***	*	***	**	**
Integrated planning tools	*	***	**	***	*	***	*	***
Skills to go gender specifically	*	***	***	***	*	***	NA	NA
Skills to monitor and improve subsequent planning	*	***	*	***	0	**	0	**
Training skills to sensitize, etc.	*	***	***	***	0	**	*	***

Annex 8: List of Environmental Agreements actions taken on by Somalia

Actions taken on 101 Agreements including:
21 Signatures
26 Ratification, Accession, Succession, or Similars
85 Entry Into Forces

Formatted Results:
Printer Friendly Excel(tab-delimited)

Citation: Data from Ronald B. Mitchell. 2002-2015.*International Environmental Agreements Database Project (Version 2014.3)*.
Available at: http://iea.uoregon.edu/
Date accessed: 31 August 2015
For more information, see publications page.

mitch_id	Agreement Signature	Agreement Name	Agreement Termination (if any)	Signatures	Ratifications (or similar)	Entry into force
2617	1945-10-16	Constitution Of The Food And Agriculture Organization Of The United Nations (IEA ID# 2617)				1960-11-17
2696	1960-12-14	Statutes Of The Intergovernmental Oceanographic Commission (IEA ID# 2696)				1974-7-10
4539	1962-08-20	Convention for the Establishment of the Desert Locust Control Organization for Eastern Africa (IEA ID# 4539)	1965-07-02	1962-8-20		1962-8-20
2726	1963-08-05	Treaty Banning Nuclear Weapon Tests In The Atmosphere, In Outer Space And Under Water (IEA ID# 2726)		1963-8-19		
4629	1965-07-02	Agreement regarding the Desert Locust Control Organization for Eastern Africa (established by Amendments to the Convention for the Establishment of the Desert Locust Control Organization		1965-7-2		

		for Eastern Africa) (IEA ID# 4629)				
3607	1967-01-27	Treaty On Principles Governing The Activities Of States In The Exploration And Use Of Outer Space Including The Moon And Other Celestial Bodies (IEA ID# 3607)		1967-2-2		
2760	1967-09-13	Phytosanitary Convention For Africa (IEA ID# 2760)		1967-9-13		
3610	1968-07-01	Treaty On The Non-Proliferation Of Nuclear Weapons (IEA ID# 3610)		1968-7-1	1970-3-5	1970-3-5
2768	1968-09-03	Agreement For The Establishment For Arab Centre For The Studies Of Dry And Barren Land (IEA ID# 2768)			1968-9-3	1971-11-25
2769	1968-09-15	African Convention On The Conservation Of Nature And Natural Resources (IEA ID# 2769)		1968-9-15		
4721	1970-07-10	Amendments to the Statutes Of The Intergovernmental Oceanographic Commission (IEA ID# 4721)				1974-7-10
2814	1973-03-03	Convention On International Trade In Endangered Species Of Wild Fauna And Flora (IEA ID# 2814)			1985-12-2	1986-3-2
2859	1976-11-06	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-1, 1976) (IEA ID# 2859)				1986-3-2
2897	1979-03-30	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-2, 1979) (IEA ID# 2897)				1986-3-2
2898	1979-03-30	Amendments To Appendices III To The Convention On International Trade In Endangered Species Of Wild				1986-3-2

		Fauna And Flora (COP-2, 1979) (IEA ID# 2898)				
2896	1979-06-23	Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 2896)		1979-6-23	1985-11-11	1986-2-1
4595	1981-03-08	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-3, 1981) (IEA ID# 4595)				1986-3-2
2935	1982-02-14	Regional Convention For The Conservation Of The Red Sea And Gulf Of Aden Environment (IEA ID# 2935)		1982-2-14	1988-3-1	1988-3-31
2936	1982-02-14	Protocol Concerning Regional Cooperation In Combating Pollution By Oil And Other Harmful Substances In Cases Of Emergency (IEA ID# 2936)		1982-2-14	1988-3-1	1988-3-31
2947	1982-12-10	United Nations Convention On The Law Of The Sea (IEA ID# 2947)		1982-12-10	1989-7-24	1994-11-16
4596	1983-04-30	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-4, 1983) (IEA ID# 4596)				1986-3-2
2979	1984-12-08	Third ACP-EEC Convention (IEA ID# 2979)		1984-12-8	1985-11-19	1986-5-1
2982	1985-03-22	Convention For The Protection Of The Ozone Layer (IEA ID# 2982)			2001-8-1	2001-10-30
4597	1985-05-03	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-5, 1985) (IEA ID# 4597)				1986-3-2
2985	1985-06-21	Convention For The Protection, Management And Development Of The Marine And Coastal		1985-6-21	1988-3-1	1996-5-10

		Environment Of The Eastern African Region (IEA ID# 2985)				
2986	1985-06-21	Protocol Concerning Protected Areas And Wild Fauna And Flora to the Convention For The Protection, Management And Development Of The Marine And Coastal Environment Of The Eastern African Region (IEA ID# 2986)		1985-6-21	1988-3-1	1996-5-10
2987	1985-06-21	Protocol Concerning Cooperation In Combating Marine Pollution In Cases Of Emergency to the Convention For The Protection, Management And Development Of The Marine And Coastal Environment Of The Eastern African Region (IEA ID# 2987)		1985-6-21	1988-3-1	1996-5-10
2993	1985-10-26	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 2993)				1986-2-1
4598	1987-07-24	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-6, 1987) (IEA ID# 4598)				1987-10-22
3021	1987-09-16	Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID# 3021)			2001-8-1	2001-11-1
4722	1987-11-20	Amendments to Articles 1, 2, 3, 4, 5, 9 and 10 of the Statutes Of The Intergovernmental Oceanographic Commission (IEA ID# 4722)				1987-11-20
3035	1988-10-14	Amendments To Appendices I And II Of The Convention On The Conservation Of				1989-1-12

		Migratory Species Of Wild Animals (IEA ID# 3035)				
3042	1989-03-22	Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (IEA ID# 3042)			2010-7-26	2010-10-24
4599	1989-10-20	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-7, 1989) (IEA ID# 4599)				1990-1-18
3059	1989-12-15	Fourth ACP-EEC Convention (IEA ID# 3059)		1989-12-15		
4007	1990-06-29	Adjustment To The Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID# 4007)				2001-11-1
3071	1990-06-29	Amendment To The Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID# 3071)			2001-8-1	2001-10-30
3085	1991-01-30	Convention On The Ban Of The Import Into Africa And The Control Of Transboundary Movement And Management Of Hazardous Wastes Within Africa (IEA ID# 3085)		1991-6-1		
4202	1991-09-13	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4202)				1991-12-12
4600	1992-03-13	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-8, 1992) (IEA ID# 4600)				1992-6-11
3126	1992-05-09	United Nations Framework Convention On Climate Change (IEA ID# 3126)			2009-9-11	2009-12-10
3128	1992-06-05	Convention On Biological			2009-12-10	2010-

		Diversity (IEA ID# 3128)				3-10
4300	1992-11-25	Adjustments to Annex A of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Fourth Meeting of the Parties (IEA ID# 4300)				2001-11-1
4301	1992-11-25	Adjustments to Annex B of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Fourth Meeting of the Parties (IEA ID# 4301)				2001-11-1
3144	1992-11-25	Amendment To The Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID# 3144)			2001-8-1	2001-10-30
3174	1993-11-25	Agreement For The Establishment Of The Indian Ocean Tuna Commission (IEA ID# 3174)			2014-5-22	2014-5-22
3182	1994-03-16	Instrument For The Establishment Of The Restructured Global Environment Facility (IEA ID# 3182)			2007-4-11	2007-4-11
3185	1994-06-11	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 3185)				1994-9-9
3188	1994-06-17	Convention To Combat Desertification In Those Countries Experiencing Serious Drought And/Or Desertification, Particularly In Africa (IEA ID# 3188)			2002-7-24	2002-10-22
4601	1994-11-18	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-9. 1994) (IEA ID# 4601)				1995-2-16
4302	1995-12-07	Adjustments to Annex A of The Montreal Protocol On Substances That Deplete The				2001-11-1

		Ozone Layer agreed to at the Seventh Meeting of the Parties (IEA ID# 4302)				
4303	1995-12-07	Adjustments to Annex B of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Seventh Meeting of the Parties (IEA ID# 4303)				2001-11-1
4304	1995-12-07	Adjustments to Annexes C and E of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Seventh Meeting of the Parties (IEA ID# 4304)				2001-11-1
3234	1996-04-11	African Nuclear Weapon Free Zone Treaty (IEA ID# 3234)		2006-2-23		
4203	1997-04-16	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4203)				1997-7-15
4602	1997-06-20	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-10, 1997) (IEA ID# 4602)				1997-9-18
3267	1997-09-17	Amendment To The Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID# 3267)			2001-8-1	2001-10-30
4305	1997-09-17	Adjustments to Annex A of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Ninth Meeting of the Parties (IEA ID# 4305)				2001-11-1
4306	1997-09-17	Adjustments to Annex B of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Ninth Meeting of the Parties (IEA ID# 4306)				2001-11-1

4307	1997-09-17	Adjustments to Annex E of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Ninth Meeting of the Parties (IEA ID# 4307)				2001-11-1
4859	1997-12-11	Amendment to the list in Annex I to the United Nations Framework Convention on Climate Change (deleting Czechoslovakia and adding Croatia, the Czech Republic, Liechtenstein, Monaco, Slovakia and Slovenia) (IEA ID# 4859)				2009-12-10
3273	1997-12-11	Protocol To The United Nations Framework Convention On Climate Change (IEA ID# 3273)			2010-7-26	2010-10-24
4352	1998-02-27	Amendment to Annex I and Adoption of additional Annexes VIII and IX To The Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (IEA ID# 4352)				2010-10-24
3289	1998-09-10	Convention On The Prior Informed Consent Procedure For Certain Hazardous Chemicals And Pesticides In International Trade (IEA ID# 3289)			2010-7-26	
4205	1999-11-16	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4205)				2000-2-14
4723	1999-11-16	Amendments Establishing Revised Statutes Of The Intergovernmental Oceanographic Commission (IEA ID# 4723)				1999-11-16
3312	1999-12-03	Amendment To The Montreal Protocol On Substances That Deplete The Ozone Layer (IEA ID#			2001-8-1	

		3312)				
4308	1999-12-03	Adjustments to Annex A of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Eleventh Meeting of the Parties (IEA ID# 4308)				2001-11-1
4309	1999-12-03	Adjustments to Annex B of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Eleventh Meeting of the Parties (IEA ID# 4309)				2001-11-1
4310	1999-12-03	Adjustments to Annex E of The Montreal Protocol On Substances That Deplete The Ozone Layer agreed to at the Eleventh Meeting of the Parties (IEA ID# 4310)				2001-11-1
3314	2000-01-29	Cartagena Protocol on Biosafety to the Convention On Biological Diversity (IEA ID# 3314)			2010-10-24	2010-10-24
4603	2000-04-20	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-11, 2000) (IEA ID# 4603)				2000-7-19
4849	2000-12-22	Amendment Adding Annex V to the Convention To Combat Desertification In Those Countries Experiencing Serious Drought And/Or Desertification, Particularly In Africa (IEA ID# 4849)				2002-10-22
3341	2001-05-22	Convention On Persistent Organic Pollutants (IEA ID# 3341)			2010-7-26	2010-10-24
4641	2001-11-09	Amendment to the list in Annex II to the United Nations Framework Convention on Climate Change (deleting Turkey) (IEA ID# 4641)				2009-12-10
4204	2002-09-24	Amendments To Appendices				2002-

		I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4204)				12-23
5011	2002-10-18	Amendments to the Instrument For The Establishment Of The Restructured Global Environment Facility (IEA ID# 5011)				2007-4-11
4604	2002-11-15	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-12, 2002) (IEA ID# 4604)				2003-2-13
5009	2002-12-09	Amendments to Annexex XIII and IX to The Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (IEA ID# 5009)				2010-10-24
4445	2003-07-11	African Convention On The Conservation Of Nature And Natural Resources (Revised) (IEA ID# 4445)		2006-2-23		
5010	2004-08-29	Amendments to Annexex XIII and IX to The Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (IEA ID# 5010)				2010-10-24
4605	2004-10-14	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-13, 2004) (IEA ID# 4605)				2005-1-12
4585	2005-05-06	Amendment to Add Annex G to the Stockholm Convention on Persistent Organic Pollutants (Arbitration and Conciliation Procedures for Settlement of Disputes) (IEA ID# 4585)				2010-10-24
4270	2005-11-25	Amendments To Appendices				2006-

		I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4270)				2-23
5012	2006-08-30	Amendments to the Instrument For The Establishment Of The Restructured Global Environment Facility (IEA ID# 5012)				2007-9-14
4590	2007-07-15	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-14, 2007) (IEA ID# 4590)				2007-10-13
4490	2007-09-21	Adjustments to Annex C of The Montreal Protocol On Substances That Deplete The Ozone Layer (hydrochlorofluorocarbons) (IEA ID# 4490)				2008-5-14
4558	2009-01-26	Statute of the International Renewable Energy Agency (IEA ID# 4558)		2009-6-8		
4563	2009-05-09	Amendments to Annexes A, B and C to the Stockholm Convention on Persistent Organic Pollutants (IEA ID# 4563)				2010-10-24
4635	2009-12-19	Amendment to the list in Annex I to the United Nations Framework Convention on Climate Change (adding Malta) (IEA ID# 4635)				2010-10-26
4614	2010-03-25	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-15, 2010) (IEA ID# 4614)				2010-6-23
4612	2010-03-31	Protocol for the Protection of the Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities to the Convention For The		2010-3-31		

		Protection, Management And Development Of The Marine And Coastal Environment Of The Eastern African Region (IEA ID# 4612)				
4613	2010-03-31	Amended Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (formerly The Eastern African Region) (IEA ID# 4613)		2010-3-31		
5013	2010-05-28	Amendments to the Instrument For The Establishment Of The Restructured Global Environment Facility (IEA ID# 5013)				2011-2-24
4638	2010-10-29	Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (IEA ID# 4638)		2012-1-9		
4966	2011-04-29	Amendments to Annex A to the Stockholm Convention on Persistent Organic Pollutants (listing technical endosulfan) (IEA ID# 4966)				2012-10-27
4869	2011-11-25	Amendments To Appendices I And II Of The Convention On The Conservation Of Migratory Species Of Wild Animals (IEA ID# 4869)				2012-2-23
4858	2011-12-11	Amendment to the list in Annex I to the United Nations Framework Convention on Climate Change (adding Cyprus) (IEA ID# 4858)				2013-1-1
4936	2013-03-14	Amendments To Appendices I and II To The Convention On International Trade In Endangered Species Of Wild Fauna And Flora (COP-16,				2013-6-12

		2013) (IEA ID# 4936)				
5004	2013-05-10	Amendments to Annex IX to The Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (IEA ID# 5004)				2014-5-27
5032	2013-05-10	Amendments to Annex A to the Stockholm Convention on Persistent Organic Pollutants (listing hexabromocyclododecane) (IEA ID# 5032)				2014-11-26