REPUBLIC OF SOUTH SUDAN

SIXTH NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY (6TH NR)

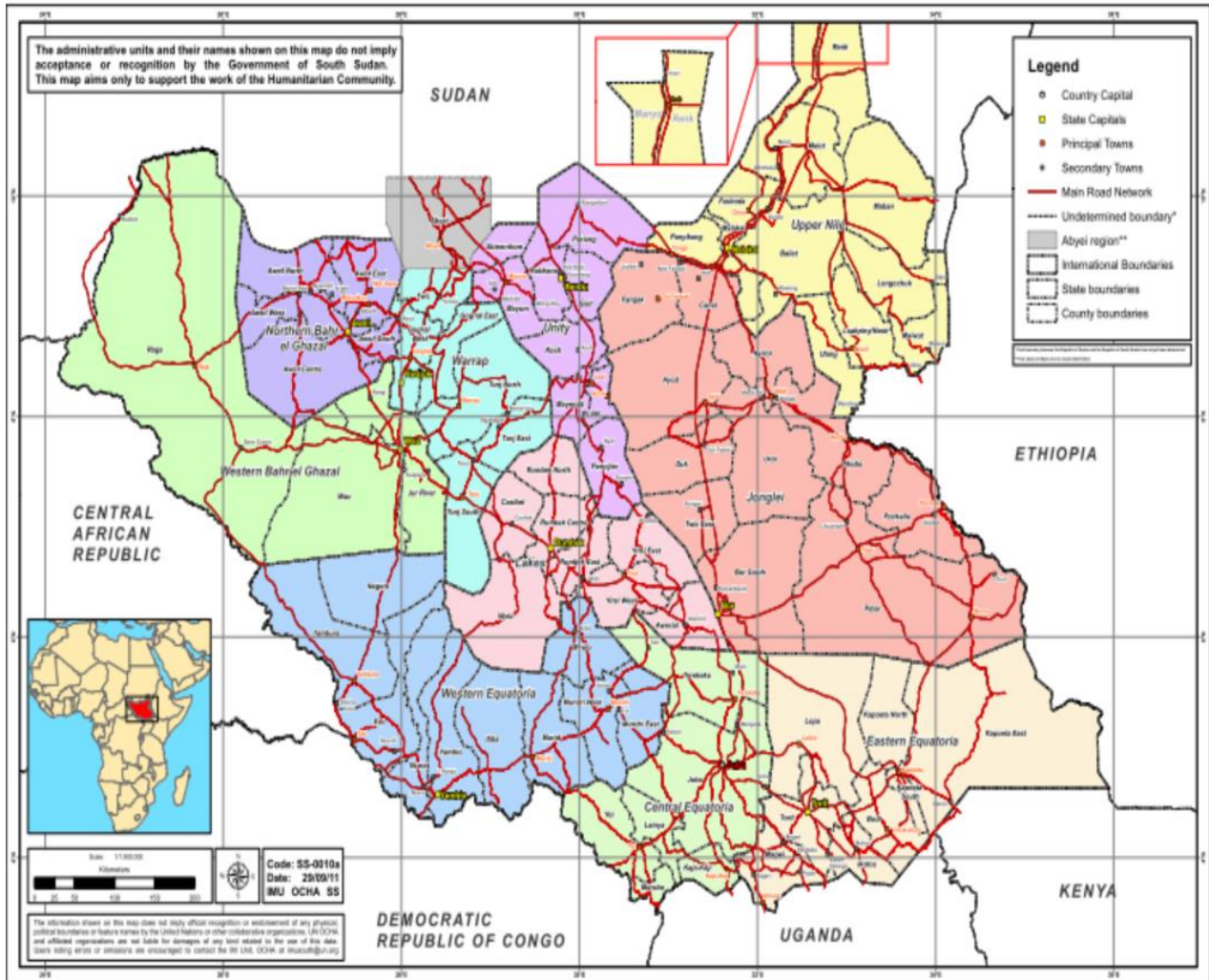# (DRAFT)

MINISTRY OF ENVIRONMENT AND FORESTRY

November, 2019

South Sudan: Final Draft 6th National Report to the Convention on Biological Diversity

Map of South Sudan Showing the 10 States

ACRONYMS

AEZ	Agro-Ecological Zone
AfDB	African Development Bank
AIS	Alien Invasive Species
AWF	African Wildlife Foundation
BCM	Billion Cubic Metres
BID	Biodiversity for Development
BMP	Biodiversity Management Programme
BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
CAMP	Comprehensive Agricultural Master Plan
CAR	Central African Republic
CBD	Convention on Biological Diversity
CEPA	Communication, Education and Public Awareness
CFR	Central Forest Reserve
CHM	Clearing House Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLTS	Community Led Total Sanitation
CMS	Convention on Migratory Species
COP	Conference of Parties
CRPC	Community Resilience Planning Committees
GBIF	Global Biodiversity Information System
DRC	Democratic Republic of Congo
EIA	Environmental Impact Assessment
ETC	Equatoria Teak Company
ETOA	Environmental Threats and Opportunities Assessment
EU	European Union
FAA	Foreign Assistance Act (of the United States Government)
FAO	United Nations Food and Agriculture Organization
FFI	Fauna & Flora International
GEF	Global Environmental Facility
GNI	Gross National Income
GR	Game Reserve
GRSS	Government of the Republic of South Sudan
HAWEN	Horn of Africa Wildlife Enforcement Network
IBA	Important Bird Area
ICSS	Interim Constitution of South Sudan
IDP	Internally Displaced People
IGAD	Inter-Governmental Authority on Development
IRG	International Resources Group
IRISS	improving Resilience in South Sudan

ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for the Conservation of Nature and Natural Resources
MAFS	Ministry of Agriculture and Food Security
MEF	Ministry of Environment and Forestry
MFAIC	Ministry of Foreign Affairs and International Cooperation
MFP	Ministry of Finance and Planning
MGC&SW	Ministry of Gender, Child & Social Welfare
MJCA	Ministry of Justice and Constitutional Affairs
MLF	Ministry of Livestock and Fisheries
MLPS & HRD	Labour and Public Service and Human Resource Development
MPA	Ministry of Parliamentary Affairs.
MPM	Ministry of Petroleum and Mining
MWCT	Ministry of Wildlife Conservation and Tourism
MWCT	Ministry of Wildlife Conservation and Tourism
MWRI	Ministry of Water Resources and Irrigation
NBS	National Bureau of Statistics
NBSAP	National Biodiversity Strategy and Action Plan
NBDS	National Biodiversity Data Base System
NGOs	Non-Governmental Organizations
NNP	Nimule National Park
NRRD	Natural Resources and Rural Development
ODA	Overseas Development Assistance
PA	Protected Area
PFR	Provincial Forest Reserve
REN	Resilience Exchange Network
RSS	Republic of South Sudan
SEC	Schools Environmental Clubs
SNV	Netherlands Development Organization
SPLA	Sudan's Peoples Liberation Army
SSLC	South Sudan Lands Commission
UNCCD	United Nations Convention on Combating Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCS	Wildlife Conservation Society
WHC	World Heritage Convention

SECTION 1: INFORMATION ON TARGETS BEING PURSUED

By 2018, NBSAP adopted and being effectively implemented, and a comprehensive national biodiversity coordination framework is in place (the NBSAP has not been adopted yet).

2. ABT to which National Target is wholly or partially related to: 1, 2, and 17.

3. ABT to which NT is indirectly related to: 18

4. Reason why this particular target was identified: South Sudan acceded to the CBD in 2014 after its independence in 2011; and is therefore obligated to prepare its NBSAP. In addition, the NBSAP provides a coordination mechanism which brings stakeholders involved in the management of biodiversity resources together for their sustainable management and conservation. Currently, the coordination mechanisms in the NRRD sectors are weak, inadequate and along sectoral lines; and therefore there is no synergy in programming and implementation much needed to address the cross cutting nature of biodiversity management. Linkages are also weak between the national and state Governments.

5. Level of Government that Target responds to: All levels.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other line ministries with a supporting role in the management of biodiversity resources as well as non-state actors.

National Target 2: Biodiversity values mainstreamed into the National Economic Development Plans and Budget Framework Papers, and in State Development Plans.

2. ABT to which National Target is wholly or partially related: 2.

3. ABT to which National Target is indirectly related to: 1 & 17.

4. Reason why this particular target was identified: Resource allocation to the NRRD sectors has been low and grossly inadequate for effective management of biodiversity resources. This can be attributed to the lack of recognition by policy makers at the national level of the value and economic contribution of biodiversity to the national economy in terms of meeting the social economic needs of the people on a day to day basis; current contribution and future potential towards the GDP as well as the provision of critical ecosystem services.

5. Level of Government that Target responds to: National and State

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors and other line ministries and non-state actors that have a supporting role in the management of biodiversity resources.

Provide any other relevant information: the process of developing and adopting this national target, the stakeholders involved or the strategy and plans in which this target has been included and any other relevant website links and files.

National Target 3: By 2025, an integrated national biodiversity monitoring, assessment and reporting system is established.

2. ABT to which National Target is wholly or partially related: 1, 2 &7.

3AB.T to which National Target is indirectly related to: All.

4. Reason why this particular target was identified: There is insufficient biodiversity data that can inform and guide effective policy making and management of biodiversity resources with some of the available data dating back to the 1980s (wildlife census in most of the PAs). In the Forest sector, comprehensive inventories were undertaken the 1980s for the plantations, although the Directorate was in the process of updating this through funding from the Norwegian Government. The fisheries resource among others also lack any current data. In addition, existing data tends to be mostly on larger animals but is lacking on plants, birds, reptiles, amphibians, fisheries and microbes.

5. Level of Government Target Responds to: National & state.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 4: By 2022, National Government and State Governments will have reviewed relevant legislation, policies and programs to maximize synergies with the NBSAP.

2. ABT to which National Target is wholly or partially related: All Targets

3. ABT to which National Target is indirectly related to: All Targets

4. Reason why this particular target was identified: *This NT falls under SO2 "To strengthen policy, legislative and institutional capacity for biodiversity conservation and management for all actors in the country."* One of the drivers of biodiversity loss in South Sudan is lack of a clear policy, legislative and institutional framework for the effective and sustainable management of these resources. After independence in 2011, the country engaged in policy and legislative review of the various policies and laws governing the sector, most of which were from the Government of Sudan (pre – independence). Most of these have not been approved by cabinet or enacted by the Legislative Assembly which impedes effective implementation of the mandates of the respective Ministries. Law enforcement especially to curb illegal activities is seriously impacted negatively. In some cases, mandates between the national and State governments especially with regard to the management of forest resources overlap therefore creating confusion. In addition, the policy and legislative review is expected to provide a clear institutional framework for the management of the different resources such as the proposed South Sudan Wildlife Service (SSWS) in the Wildlife Conservation and Management Bill, 2013 as well as facilitate the human, technical and technological capacity needed in the respective institutions.

5. Level of Government Target Responds to: National & state;

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries and non-state actors with a supporting role in the management of biodiversity resources.

National Target 5: By 2022, prepare the legislation and establish the conditions for ratification and/or accession and implementation of the Nagoya Protocol, Cartagena and other biodiversity Related conventions (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Convention on Wetlands of International Importance, Especially as Waterfowl Habitats (RAMSAR), World Heritage Convention (WHC), International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and International Plant Protection Convention (IPPC).

2. ABT to which National Target is wholly or partially related: 1, 2, 11, 12, 14, 15, 16, 18.

*3. ABT to which National Target is indirectly related to***: 1, 2,11,12,14, 15,**

4. Reason why this particular target was identified: South Sudan became an independent country in 2011 and as such is keen in joining other nations with regard to participation in the global arena on matters pertaining to the sustainable management of its biodiversity resources which are also part of the global heritage. Having acceded to the CBD, the GRSS is expected to ratify protocols/agreements related to it (Cartagena and Nagoya) in addition to other related biodiversity conventions {the Convention on Conservation of Migratory Species (CMS), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR), the Ramsar Convention on Wetlands of International Importance (RAMSAR), the World Heritage Convention (WHC), and the International Plant Protection Convention (IPPC)}. There are also other follow up protocols to some of these Conventions (Nagoya, Cartagena). To date, South Sudan has acceded to the CBD and met some of its obligations such as the preparation of the Country's 5th National Report, the NBSAP which is awaiting final reviews and approval by Cabinet/Parliament and the 6th National report (this document). The country therefore needs to establish the conditions for ratification and/or accession and prepare appropriate legislation in support of these processes. Legislation is also necessary to facilitate implementation of the remaining conventions.

*5. Level of Government Target Responds to***:** National

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 6: By 2020, the National Strategy on Invasive Alien Species (IAS) is fully developed and under implemented, with the participation and full consultation of all the stakeholders.

2. ABT to which National Target is wholly or partially related: 9.

*3. ABT to which National Target is indirectly related to***:** 6, 7, 8, 12, 13, 14, 15.

4. Reason why this particular target was identified: Alien invasive species are a threat to biodiversity once they spread displacing indigenous fauna and flora which may have more benefits in terms of livelihoods and maintenance of the ecological integrity of ecosystems. In South Sudan, the water hyacinth in the Nile river ecosystem and especially the Sudd is a threat to fisheries resources. In other countries in the East African region, the hyacinth has quickly spread to other water bodies besides Lake Victoria, not only affecting livelihoods, but also water quality. In Lake

Victoria, this affects water transportation. *Prosopis juliflora* has also been reported in parts of the country and can quickly spread covering vast areas.

5. Level of Government Target Responds to: National and State.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 7: Strengthen biodiversity-inclusive environmental impact assessment (EIA) and Environmental Audits, and Strategic Environment Assessment (SEA).

This target responds to the strategy "Reduce Negative impacts and enhance positive impacts on biodiversity through facilitation, design and capacity enhancement for enforcement and compliance, for biodiversity regulations and incentive mechanisms" in the NBSAP. Having a system for assessing the adverse impacts of development activities on biodiversity resources is one of the obligations of Parties to the CBD (Article 14 as mechanism of minimizing adverse impacts." The GRSS therefore commits to developing an appropriate framework and procedures for carrying out environmental impact assessments of proposed development projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects). In addition, it is felt that in the EIAs & SEAs being currently undertaken, biodiversity issues are not always carefully analyzed and integrated into proposed recommendations in the EIA reports.

2. ABT to which National Target is wholly or partially related: 2, 4 and 7

3. ABT to which National Target is indirectly related to: 8, 12, and 14.

4. Reason why this particular target was identified: EIA, SEA and Environmental audits are tools for ensuring that environmental concerns are integrated into development activities thus ensuring that the negative impacts are identified early in project design and therefore mitigated or prevented. Environmental audits help monitor if the mitigation measures proposed during project design were implemented and if they are working or not.

5. Level of Government Target Responds to: National, State. County.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 8: Commitment of states and the elaboration of a National Policy, ensuring the continuous and updated diagnosis of species and genetic resources and effectiveness of Action Plans for Prevention, Contention and Control of loss of biodiversity at species and genetic level in the country.

2. ABT to which National Target is wholly or partially related: 12,

3. ABT to which National Target is indirectly related to: 5, 6, 7, 11, and 13

4. Reason why this particular target was identified: South Sudan biodiversity resources are faced by a myriad of threats and yet there is a vacuum in terms of having up to date documentation of these biodiversity resources as well as action plans for their conservation. This is therefore a

critical period when conscious efforts must be undertaken to inform not only the status but also the formulation of realistic action plans.

*5. Level of Government Target Responds to***:** National, State. County.

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 9: By 2020, incentives and subsidies harmful to biodiversity have been identified and reformed, and controls related to biodiversity have been enhanced.

2. ABT to which National Target is wholly or partially related: 3

*3. ABT to which National Target is indirectly related to***:** 5, 7,8,13

4. Reason why this particular target was identified: South Sudan may not currently be having issues with subsidies/incentives which are mainly provided in the agricultural sector to spur production. However, this is a possible scenario in the future as the government strives to achieve the food insecurity issue that is common place in the country. Some of the Humanitarian assistance agencies have been promoting localized small scale interventions geared towards improving food security especially among the IDPs and host communities where seeds and other inputs are provided. There is therefore need to use integrate sustainable production technologies and that discourage shifting cultivation that is harmful to biodiversity.

*5. Level of Government Target Responds to***:** National, State. County.

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 10: By 2020, the rate of loss of natural habitats (forests, wetlands, water resources catchments, mountains) is reduced by at least 50 percent (in comparison with the 2016 rate) and, as much as possible, brought close to zero, and degradation and fragmentation is reduced.

2. ABT to which National Target is wholly or partially related: 5

*3. ABT to which National Target is indirectly related to***: 14, 15**

4.Reason why this particular target was identified: South Sudan is richly endowed with forest resources, however, these are under intense pressure arising from several drivers (increasing human population and associated activities such as demand for construction materials, fuelwood and expansion of agriculture, Bushfires are also used to clear land for cultivation where slash and burn is practiced. The internal conflict that started in in 2013 has led to a collapse of law and order and the collapse of management systems including policing of the forest estate. The level of forest degradation was estimated at 2.5% per annum. Other resources such as catchments and wetlands are also experiencing severe degradation (the montane forests of (Imatong, Dongotona and Dindinga) have rapidly degraded over the years.

*5. Level of Government Target Responds to***:** National, State. County.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 11: By 2022, resource assessments, spatial, of biodiversity, ecological and land use planning and benchmarking of the value in South Sudan.

2. ABT to which National Target is wholly or partially related: 19

3. ABT to which National Target is indirectly related to: 2, 11, and 12

4. Reason why this particular target was identified: To sustainably conserve and manage biodiversity resources, accurate and reliable data and information on the status of the resource is needed. There exists serious data gaps in the existing data/information, which is a constraint to making sound decisions with regard to management of biodiversity resources. In addition, Articles 7 and 14 of the CBD calls on parties to build capacity and establish mechanisms and procedures, in particular for the purposes of Articles 8 (In Situ Conservation) to 10 (Sustainable Use of Components of Biodiversity) to: (a) Identify components of biological diversity important for its conservation and sustainable use; (b) Monitor, through sampling and other techniques, the components of biological diversity identified, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use; (c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and (d) Maintain and organize, by any mechanism data, derived from identification and monitoring activities.

5. Level of Government Target Responds to: National, State.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 12: By 2026, National Plan with ecological and land use planning and benchmarking of the value for sustainable use and management of biodiversity in South Sudan integrated into National Development Plan for South Sudan

2. ABT to which National Target is wholly or partially related: 2

3. ABT to which National Target is indirectly related to: 1, 5, 6, 7, 8, and 11

4. Reason why this particular target was identified: This NT is dependent on the outputs of NT 11 (conduct of resource surveys and assessments and land use mapping which culminates in the development of a national plan that shows all these different variables. This is expected to be an important tool for highlighting biodiversity rich areas together with the type of value of biodiversity found there. As a planning tool, the national plan will also be used to inform decisions about what developments to undertake where. In the prevailing situation, there is an information gap with regard to ecological and biodiversity information since surveys have previously focused only on agricultural productivity/potential and mapping of land uses.

5. Level of Government Target Responds to: All.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 13: By 2024, programme for effective management of protected areas (PA) and the current PA network Established.

2. ABT to which National Target is wholly or partially related: 11

3. ABT to which National Target is indirectly related to: 5

4. Reason why this particular target was identified: South Sudan has an extensive system of PA which is only 4% less to the Aichi Target of 17%. However, PA management has been weak or lacking and the actual status of the biodiversity in them is not well known. In addition, the actual situation in terms of the value of the PAs for biodiversity is not known for most of the PAs due to many years of conflict that inhibited actions on the ground. Under this NT, It is envisaged that a situational analysis of the state of the PA system would be undertaken and this would guide the development of a Programme for the effective management of the PAs. The situation analysis would also rationalize the PA system as it exists currently, whether it encompasses all critical biodiversity rich habitats/range including migratory corridors.

5. Level of Government Target Responds to: National and State.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 14: By 2023, a national collaborative resource management programme for PAs, wetlands and water resource catchments developed and being implemented.

2. ABT to which National Target is wholly or partially related: 5

3. ABT to which National Target is indirectly related to: 11,

4. Reason why this particular target was identified: Biodiversity/wildlife resources are found in different ecosystems (forests, wildlife, rangelands, and wetlands) and on community land. As such a concerted effort is required by all the stakeholders (policy makers at the helm of the wildlife agency, PA management staff at the national and State level, NGO's, local communities) to come together and design a collaborative management program if these resources are to be managed effectively. This will provide a collaborative management framework for all PAs. A technical working committee comprising of these actors is proposed for establishment that will spearhead this process as well to conduct regular review of actions being implemented. Collaborative management will progressively be scaled up to all the PAs over time and the process will be spearheaded by the MWCT and MEF, supported by all the other NRRD ministries.

5. Level of Government Target Responds to: National, State County, Boma, Payam

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 15: By 2024, programme for restoration of degraded wetlands, including the Sudd, developed and under effective implementation.

2. ABT to which National Target is wholly or partially related: 5

3. ABT to which National Target is indirectly related to: **6,** 8, 9, and 14

4. Reason why this particular target was identified: Wetlands in south Sudan are reported to be degrading rapidly while some are being lost due to reclamation, over grazing, invasive alien species in the Nile and loss of water catchments. Wetlands are critical for providing ecosystem services such as fishing and water for domestic use, wildlife and livestock. The final output of this target are resource management plans for the respective wetlands which are implemented and thereby reduce wetlands degradation by a third by the target date.

5. Level of Government Target Responds to: National, State.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 16: By 2024, programme for restoration of degraded forest areas, developed and under effective implementation.

2. ABT to which National Target is wholly or partially related: 5

3. ABT to which National Target is indirectly related to: 7, 14, and 15

4. Reason why this particular target was identified: Forest resources are getting degraded rapidly due to a variety of drivers (direct & indirect) such as demand for resources (fuelwood, charcoal, and timber), conflict since 2013 which led to breakdown of law and order and insecurity thus preventing effective management, poverty/lack of alternatives.

5. Level of Government Target Responds to: National, State.

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors. This target seeks to reduce the level of forest degradation by 25% by 2014.

National Target 17: By 2023, national programme for rehabilitation of degraded farmlands developed and under implementation.

2. ABT to which National Target is wholly or partially related: 7

3. ABT to which National Target is indirectly related to: 13

4. Reason why this particular target was identified: The selection of this target is in response to the requirements of ABT 7 & 13. In addition, farmlands are getting degraded in the country due to poor and unsustainable agricultural practices especially in areas occupied by IDPs. According to UNEP, South Sudan has one of the highest rates of soil loss on the African continent which stands at 12.6 t/ha/yr. on average.[1]

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[1] (ELD and UNEP 2015)

*5. Level of Government Target Responds to***: National, State.

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors. This target seeks to reduce the level of farmlands degradation by 30% by 2024.

National Target 18: By 2022, a natural resource mobilization plan for biodiversity management developed and under implementation.

2. ABT to which National Target is wholly or partially related: 20

*3. ABT to which National Target is indirectly related to***: 17

4. Reason why this particular target was identified: Funding has been identified as a major constraint to biodiversity conservation and management which limits the level of activity. In addition, most of the biodiversity management institutions are very weak owing to the many years of conflict (pre and post-independence) and would therefore require huge investments of resources for them to be effective. South Sudan as a contracting Party to the CBD is also obligated under Articles 20 and 21 to put in place a mechanism for generating financial resources in support of management and incentives in accordance with its national plans, priorities and programmes.
*5. Level of Government Target Responds to***: National.

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 19: By 2024, at least 50% of the required budget for the NBSAP, generated from diverse sources, is made available for its implementation.

2. ABT to which National Target is wholly or partially related: 20

*3. ABT to which National Target is indirectly related to***: 17

4. Reason why this particular target was identified: As in NT 18.

*5. Level of Government Target Responds to***: National.

National Target 20: By 2022, ensure broad extension of environmental education in the society for improving awareness of population on biological diversity and ecosystem services

2. ABT to which National Target is wholly or partially related: 1,

*3. ABT to which National Target is indirectly related to***: 2

4. Reason why this particular target was identified: Most of the citizenry are not fully aware of the importance of biodiversity resources and ecosystems; as well as how these relate to the economic development of the country as well people's livelihoods at the local level. Where people are aware of some of the values of biodiversity, they may not know what they must do and how to conserve these resources.

*5. Level of Government Target Responds to***:** National, State, County, Payam, Boma.

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 21: By 2022, strengthen the role of the scientific research and professional institutions, NGO sector and media, including improvement of scientific technologies.

2. ABT to which National Target is wholly or partially related: 19

*3. ABT to which National Target is indirectly related to***:** 2, 11, 12, 13, and 14.

4. Reason why this particular target was identified: Scientific data/information is critical for informed decision making as well as for monitoring the interventions being implemented. Currently, there are very few institutions of higher learning such as the University of Juba that are generating scientific data due to limitations of funding and the requisite infrastructure including equipment. Development of a research capability is a long term investment that should also focus on building the human resource capacity in terms of training at post graduate levels.

*5. Level of Government Target Responds to***:** National

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 22: By 2022, significant increase in the contribution of scientifically-based information into biodiversity decision making processes and management interventions.

2. ABT to which National Target is wholly or partially related: 19

*3. ABT to which National Target is indirectly related to***:** 2, 11, 12, 13, and 14

4. Reason why this particular target was identified: Scientific data/information is critical for informed decision making as well as for monitoring the interventions being implemented. Currently, there are very few institutions of higher learning such as the University of Juba that are generating scientific data due to limitations of funding and the requisite infrastructure including equipment. Development of a research capability is a long term investment that should also focus on building the human resource capacity in terms of training at post graduate levels.

*5. Level of Government Target Responds to***:** National

*6. Process of developing national target***:** Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 23: **Complete biodiversity information system and build up the capacity of Clearing House Mechanism (CHM)**

2. ABT to which National Target is wholly or partially related: 19

*3. ABT to which National Target is indirectly related to***:** 17

4. Reason why this particular target was identified: Having a biodiversity information system that consolidates data/information is critical for planning and development of programmes that are

informed by up to date scientific data. It is also critical for monitoring progress/success in the implementation of the NBSAP. South Sudan through the MEF is developing a biodiversity information management system with the support of GEF/UN Environment and the IGAD DBIF. It is also in the process of developing a national CHM.

5. Level of Government Target Responds to: National

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

National Target 24: By 2026, complete a national inventory on the genetic diversity of species of cultivated plants, farm animals and wild relatives, with the view to develop actions to safeguard the genetic diversity of other priority species of socioeconomic value, animal species and selected wild plants

2. ABT to which National Target is wholly or partially related: 13

3. ABT to which National Target is indirectly related to: 1, 7, 18, and 19

4. Reason why this particular target was identified: Biodiversity information/data on crops and livestock at the Ministry of Agriculture and Food Security and at the higher institutions of learning (primarily University of Juba) is limited. The infrastructure both for collection, analysis, storage and retrieval of such data is really wanting. As a result, there is a huge gap in terms of knowledge of its social economic and other values. This therefore impacts on decision making that would ensure that such resources are safeguarded and used sustainably or even exploited sustainably for the benefit of the people of south Sudan and the country as a whole.

5. Level of Government Target Responds to: National

6. Process of developing national target: Participatory involving all government actors especially in the NRRD sectors, other ministries with a supporting role in the management of biodiversity resources and non-state actors.

SECTION II: IMPLEMENTATION MEASURES TAKEN IN THE IMPLEMENTATION OF THE NBSAP, ASSESSMENT OF THEIR EFFECTIVENESS, ASSOCIATED OBSTACLES AND SCIENTIFIC AND TECHNICAL NEEDS TO ACHIEVE NATIONAL TARGETS

1. **DESCRIBE A MEASURE TAKEN TO CONTRIBUTE TO THE IMPLEMENTATION OF YOUR COUNTRIES NBSAP TARGETS. ALSO DESCRIBE THE CHARACTER OF A MEASURE.**

National Target 1: By 2018, NBSAP adopted and being effectively implemented, and a comprehensive national biodiversity coordination framework is in place.

1. Description of Action
- ❖ *Cabinet Paper for NBSAP developed and adopted and implemented participatory*.

A steering committee (serves as the National Biodiversity Technical Committee) for the process is in place and draws from the key stakeholders in the natural resources management sector). A draft NBSAP has been prepared through a participatory and consultative process with stakeholders drawn from all the key ministries, academia and NGOs. Stakeholder meetings have also been held at the state level. However, the cabinet paper has not been developed and in addition, there are some slight revisions to be made to the draft NBSAP. The NBSAP was largely guided by the CBD strategic Plan for Biodiversity. This is a Policy measure.

While the NBSAP has not been adopted as a policy instrument by Government, some actions/measures have been implemented since 2016 which would contribute to some of the national targets. However, these are limited in scale and scope.

2. *Assessment of effectiveness (partial, fully, Ineffective, Unknown)*
- ❖ Unknown
3. *Reason for this rating:*
- ❖ There is limited evidence about this measure. The Methodology used in the assessment was stakeholder interviews.
4. *Relevant information to illustrate how the measure will result in outcomes that contribute to NBSAP implementation.*
- ❖ Once adopted by government as a policy instrument, this will rally all stakeholders to take action towards implementing the proposed programmes and activities. In addition, adoption of the NBSAP will also be an endorsement of the proposed institutional arrangements and coordinating mechanism. The NBSAP will also be useful in mobilizing financial resources from government, the international community and other actors such as NGOs.

5. *Obstacles, Scientific and Technical Needs to Achieve National Targets*

Conflict since 2013 which deviates attention and resources from developmental activities and create a vacuum leading to unsustainable exploitation of natural resources; weak capacity of government institutions in natural resources and rural development sectors, weak policy and legislative framework, limited budget to implement biodiversity conservation and inadequate technical staff.

National Target 2:

Biodiversity values mainstreamed into the National Economic Development Plans and Budget Framework Papers, and in State Development Plans.

1. Description of action/measures taken:
   ❖ Mainstreaming biodiversity values into national policies and budget frameworks.
2. *Assessment of effectiveness (partial, fully, Ineffective, Unknown)*
   ❖ Measure has been ineffective.
3. *Reason (s) for the rating and methodology used.*
   ❖ Policies and sectoral strategic frameworks have largely integrated biodiversity concerns and the need to use tools such as environmental assessments to ensure these resources are safeguarded, however, these have not yet been operationalized, neither are they incorporated in the budget frameworks. The policy documents have also not been approved by Parliament while some are still drafts. Other envisaged reviews to align these policies with the NBSAP have also not been undertaken to date.
4. *Other relevant information to illustrate how the measure is expected to result in the outcomes of NBSAP implementation.*
   ❖ Mainstreaming biodiversity values into national policies and budget frameworks raises their profile at the highest level of government, commits government to safeguard them and ensures that biodiversity related activities are funded. In addition, this also ensures that biodiversity is taken into consideration during the planning and implementation of development activities.

5. *Obstacles, Scientific and Technical Needs to Achieve this Target*

   ❖ Weak capacity of relevant government institutions (adequate and qualified technical staff, supporting infrastructure and budget) including the legislative drafting unit in the Ministry of Justice and Constitutional Affairs (MJCA). Also the originating ministries are weak in terms of capacity to prepare the requisite policies and Bills. Currently, there are several Bills that are pending.

National Target 3: By 2025, an integrated national biodiversity monitoring, assessment and reporting system is established.

1. *Description of Action/Measures taken to implement the NBSAP.*
   ❖ Development of the National Biodiversity Database system (NBDS) through the European (EU) funded Biodiversity for Development (BID) program and implemented by the Global Biodiversity Information Facility (GBIF). South Sudan has signed a Memorandum of Understanding with GBIF as an associate participant. The NBDS seeks to integrate and update existing data as well as have an institutional framework for the management and sharing of such data. Protocols for data sharing have also been developed. The NBDS should also be a source of information for monitoring implementation of NBSAP. With support from the EU through the Inter-Governmental Authority on Development (IGAD) Biodiversity Management Program (BMP), South Sudan has launched a data mobilization

efforts[2]. To date, 5,197 occurrences have been recorded, 72 data sets exist with 50 publishers and 21 countries contributing data[3].   Also written through the GBIF, species occurrence records accessible through GBIF have increased to 1,843 published occurrences and I dataset since 2018.

2. *Assessment of effectiveness*
❖ Partially effective
3. *Reason (s) for the rating in the   assessment:*
❖ The NBD system is already in place (staff, equipment,); training for staff has been undertaken in the Ministry of Environment and Forestry which is the focal point for the GBIF project. Preliminary data has been collected from other institutions and individual scientists. The methodology used in the assessment is stakeholder interviews with MEF (focal point) and review of project implementation documents and reports.
4. *Other relevant information to illustrate how the measure is expected to result in the outcomes of NBSAP implementation.*
❖ Completion of the development of the NBDS system will facilitate collection, storage and exchange of biodiversity data which will not only inform prudent decision making but also facilitate monitoring the implementation of the NBSAP. Monitoring data will inform decision making and provide status of biodiversity updates.
5. *Obstacles, Scientific and Technical Needs to Achieve National Targets.*
❖ Weak capacity of relevant government Ministries in the environment, natural resources and rural development sectors in terms of adequate and qualified technical staff, supporting infrastructure and financial resources, inadequate and more recent biodiversity data and the resources to undertake surveys to establish status of biodiversity as well as continuously monitor status of different resources. Coordinating mechanisms among key organizations that generate and use biodiversity data as lack of data sharing protocols is another obstacle.

National Target 4: By 2022, National Government and State Governments will have reviewed relevant legislation, policies and programs to maximize synergies with the NBSAP.

1. *Description of Action/Measures taken to implement the NBSAP.*
❖ Conduct review of national laws, regulations and orders with support of external experts.
❖ *Review of sub-national ordinances and by-laws.*

Since 2011, several sector policies and draft legislations have been prepared, however most of them have not been approved by either the Cabinet or Parliament. These include the following:
- National Environment policy (2015);
- National Forest Policy (2015)
- Draft Land Policy
- Fisheries policy (2012-2016);
- Water Resources policy (approved);
- Wash strategic Framework;

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[2] https://www.gbif.org/country/SS/summary.
[3] Ibid

- Wildlife policy;
- Petroleum policy (2013);
- Draft Minerals and Mining sector Policy.

Developed sector bills include:

- Environment protection Bill;
- Wildlife conservation and protected areas Bill (2015);
- Wildlife service Bill (2011);
- Water Bill;
- Petroleum Act.

These policies and Bills prepared after the country's independence in 2011 have not been finalized by the legislative drafting unit or have not been approved either by the cabinet or Parliament. Some may also need a review to make them more robust in capturing the aspirations of the NBSAP and other multi-lateral environmental agreements (MEAs) such as the UNFCCC. However, a significant number capture principles of sustainable use of resources (forests, water, wildlife, wetlands, and pastures (these include water Bill, draft land policy, 2013, Environment policy, Forest policy). In addition, they also provide for collaborative management of natural resources[4].

Local level ordinances (Boma/community level) have been developed but on a limited scale through initiatives such as the BRACED –IRISS which have been effective but actions are much localized at the Boma/village level.

2. Assessment of effectiveness (partial, fully, Ineffective, Unknown).

- ❖ Ineffective

3. Reason (s) for the rating in the   assessment:

- ❖ Policy without a supporting legal framework, rules and regulations cannot be effective. Actors in the NRRD sectors such as forests and wildlife have lamented that their work is curtailed by the lack of the requisite laws.

4. Other relevant information to illustrate how the measure is expected to result in the outcomes of NBSAP implementation.

- ❖ The policies and laws once in place will provide the much needed guidance in the implementation of the NBSAP, sector strategic plans and other natural resource management plans. The laws will strengthen law enforcement activities.

5. Obstacles, Scientific and Technical Needs to Achieve National Targets.

The legislative drafting unit is weak in terms of technical and human resource capacity, the supporting institutional infrastructure as well as funding.

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[4] Nile Transboundary Environmental Action Plan.

National Target 5: **By 2022, prepare the legislation and establish the conditions for ratification and/or accession and implementation of the Nagoya Protocol, Cartagena and other biodiversity Related conventions (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Convention on Wetlands of International Importance, Especially as Waterfowl Habitats (RAMSAR), World Heritage Convention (WHC), International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and International Plant Protection Convention (IPPC)**

1. *Description of actions and measures taken to achieve target.*

Review Regulations pertaining to various conventions and seek Government endorsement to incorporate relevant elements for the following: CMS, WHC & CITES. The character of measure is legal.

❖ South Sudan is a relatively new state and in order to participate in the global arena on environmental matters has acceded to the following conventions:

Convention	Party Status[5]	Date
Ramsar	Accession	2013
UNCCD	Accession	2014
Paris Agreement	Signatory	2016
UNFCC	Accession	2014
UNCBD	Accession	2014
Vienna	Accession	2012
Montreal Protocol	Accession	2012
World Heritage Convention[6]	Ratification	2016.

However, the Country is yet to become party to the following conventions: CITES, Nagoya Protocol, Cartagena Protocol, ITPGRFA and IPPC. The following is the status of implementation of the obligations of the various conventions since 2011.

❖ *CBD/Develop and implement the NBSAP*

❖ **CITES**

Currently, South Sudan is an observer to CITES, however, CITES is funding some conservation work in western Equatoria working in collaboration with FFI. South Sudan also became a member of the Arusha Declaration in 2015 and the Arusha accord.

❖ *Accede to the Nagoya Protocol on Access to genetic resources and benefit sharing; and promote and regulate bio-prospecting and bio-trade activities for the benefit of the population.*

The Ministry of Environment and Forestry has prepared a proposal (titled "*To strengthen national capacities to support the accession to the Nagoya Protocol and to establish a functioning national legal and institutional framework to ensure fair and equitable sharing of benefits arising from the utilization of genetic resources in South Sudan*" to solicit funds through GEF-7 for purposes of acceding to the Access and Benefit Sharing Protocol. The

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[5] https://www.informea.org/en/countries/SS/parties
[6] ttps://www.informea.org/en/%E2%80%8Bsouth-sudan-becomes-party-convention

funds will be used to create the necessary awareness, develop the legal and regulatory framework and any other requirements before ascension. In the proposed project, GEF will provide about $900,000 while the rest $6,200,000 will mainly be in kind contributions by various government line ministries. This program when implemented is expected to benefit 1700 women and 1700 men and commence from 2019-2023.

The draft NBSAP is weak with regard to how the country will accede and operationalize implementation of the Nagoya protocol as well as the other conventions (mechanism of how the ABS policy, legislative and administrative measures will be undertaken as well as how the target species for exploitation will be identified).

❖ *Implement its obligations to the United Nations Framework Convention on Climate Change (UNFCC).*

The Government of the RSS established the Directorate of Climate change and Meteorology in the Ministry of Environment and Forestry in 2013 to coordinate activities pertaining to Climate change. South Sudan prepared its First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), the National Adaptation Programmes of Action (NAPA) to climate change (2016); the Intended Nationally Determined Contribution (INDC) which was approved in 2017 by the Council of Ministers chaired by the President[7] by which the government of the RSS has committed itself to Low Emissions Development Strategy (LEDS). As a follow up to the NAPA, a capacity needs assessment (CNA) for the Country's REDD+ program was undertaken in 2016. The CNA was intended to conduct a gap analysis with regard to the implementation of a REDD+ program. This assessment is going to inform government and other stakeholders on the way forward in terms of implementation[8]. Through the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) –Improving Resilience in South Sudan (IRISS) project (2015-2018), a climate Services model for pastoralists and agriculturalist was developed with positive outcomes. Although application was only limited to Tonj and Aweil, the uptake was good with 68.27% of the 353 respondent in a survey conducted to assess uptake indicating that they had received the climate forecasts. Of those who had received the forecasts, 62% used the information while 23.23% did not[9]. Climate information was used to make decisions about when and what crops/seeds to plant depending on tolerance/adaption to flooding or droughts, when to move cattle to escape flooding or when to plant on low ground to over drought. The country is therefore getting ready to meet its obligations to the UNFCCC with regard to climate change once the country stabilizes.

❖ *Fulfill its obligations to the Ramsar Convention.*
The MEF established the Directorate of Wetlands and Biodiversity. The Department of wetlands and biodiversity has also been appointed as the focal point for the Convention[10]. An inter-sectoral wetlands and biodiversity networking group (W&BNWG) was formed to discuss and share information on wetlands and biodiversity. A desk review of the status of

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[7] https://www.unenvironment.org/news-and-stories/story/national-council-ministers-endorses-intended-nationally-determined.
[8] Adkins B., 2016. South Sudan REDD+ Country Needs Assessment.
[9] *Nhial Tiitmamer, Augustino Ting Maya* Special Report, November 27, 2018 Climate Services Model for South Sudan's Rural Farmers and Agro-pastoralists. https://www.google.com/search?sxsrf=ACYBGNSqjj-
[10] file://th%20National%20Report%20SSudan/cop12_nr_south_sudan.pdf

wetlands was undertaken as well as raising awareness among government agencies on the importance of wetlands to society and ecosystems[11]. In addition, the Country completed the national reports to COP 12 and COP13 and also continued to participate in these meeting.

❖ *Ensure that South Sudan benefits from international cooperation and opportunities for information exchange and support in the field of biodiversity at the regional and international levels.*

South Sudan benefited from international cooperation regarding Biodiversity as enumerated below.

- IGAD Biodiversity Management Program - Biodiversity Policy Assessment at National Level, Development of regional Biodiversity Policy, Strategies on (Invasive Alien Species, Wildlife Management, Access and Benefit Sharing)
- Africa GIZ Access and Benefit Sharing Initiative (GIZ-ABS-Initiative) capacity building workshops.
- CBD meetings, training and capacity building workshops.

2. *Assessment of effectiveness of measures*
❖ CBD: Partially effective.
❖ CITES: Partially effective.
❖ Nagoya Protocol: Ineffective
❖ UNFCC: Ineffective
❖ RAMSAR: Ineffective.

3. *Reason for the rating in the assessment.*

❖ *CBD: The NBSAP has not been endorsed by parliament neither has there been funding to implement it.*
❖ *CITES:*
❖ *Nagoya Protocol: Country in the process of finalizing proposal for purposes of getting funding to do the preparatory work for initiation of the accession process.*
❖ *Ramsar:*
❖ UNFCC: The NAPA and INDC have barely been progressed to implementation yet due to resource constraints.

1. Description of measure.

❖ *Ensure that South Sudan benefits from international cooperation and opportunities for information exchange and support in the field of biodiversity at the regional and international levels.*
2. *Effectiveness of Measure.*
❖ *Partially effective.*
3. *Reason for the rating in this assessment.*
❖ The number of people who participated are few and there is a need to reach many more people. The methodology used is stakeholder interviews, review of relevant documents from the conventions and COP national reports.

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[11] IBID.

4. *Other relevant information to illustrate how measure will contribute to the outcomes of the NBSAP.*
❖ Through international cooperation, the capacity of the staff and institutions they are drawn from will be strengthened through knowledge and skills exchange. In addition, the country needs to cooperate with neighboring countries as well as the region in order to address some of the biodiversity conservation challenges affecting South Sudan such as illegal trafficking of wildlife, illegal logging and charcoaling, poaching, management of transboundary parks, wetlands and water resources.
5. *Obstacles, scientific and technical needs:*
❖ *Convention on Biological Diversity*: These include low levels of funding and lack of an adequate capacity to implement the NBSAP. A weak policy and legislative framework has also been a major constraint to effective management of natural resources. While most of the NRM sector policies have been developed, these have not been approved by Government. In addition, the supporting legislation although developed has not been enacted by Parliament. This is a major constraint to effective law enforcement including policing which weakens overall governance of the NRM sector. This is especially important in the Forestry sector where there is lack of clarity as to who owns what resource between the national, state, county and local communities. Legislative will also be needed on land, upon which natural resources are found.   Enactment of the NRM policies and legislation should be fast tracked and subsequently disseminated to the various administrative levels (State, County, Boma, Payam). In addition, the same should be disseminated to the citizenry.

❖ *United Nations Framework Convention on Climate Change*: Implementation of the NAPA, the INDC have been constrained by lack of financial resources and technical capacity. The NAPA report documents that the country lacks a weather/climate monitoring capability (staff and weather stations) which would be the basis for predicting climate change. There is also a lack of Geographic Information system (data) for the country as well as a supportive legal framework. Climate information stakeholders {Ministry of Agriculture and Food Security; Ministry of Humanitarian Affairs and Disaster Management; World Food Program (WFP) FAO and Famine Early Warning System Network (FEWSNET} are also not well coordinated in the country and information does not reach the end users. Traditional Ecological Knowledge (TEK) has also not been integrated into climate forecasting. The South Sudan Meteorological Organization is also weak; therefore its capacity to collect and disseminate climate information needs to be enhanced through training, exchange visits with global forecasting centers and provision of the necessary infrastructure and resources[12].

❖ RAMSAR Convention: These include low levels of funding to implement any proposed activities; Inadequate capacity on the management of wetlands; lack of guidelines on wise use of wetlands, monitoring and surveillance; weak coordination and networking among stakeholders; low levels of awareness and knowledge about the role of wetlands in biodiversity conservation as well as in supporting rural livelihoods and social economic being of rural communities and the country as a whole is another obstacle to wetlands conservation. Another major obstacle to wetlands conservation is the lack of/or little information and data on wetlands and the biodiversity resources harbored by them. For

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[12] *Nhial T., Ting M. A. (2018).* Special Report, November 27, 2018 Climate Services Model for South Sudan's Rural Farmers and Agro-pastoralists. https://www.google.com/search?sxsrf=ACYBGNSqjj-

example, information/data on the status of fisheries resources in the country is quoted from very old sources which may not necessarily reflect the current status. This makes prudent decision making backed by scientific data difficult. To address this obstacle, there is need to conduct surveys, mapping and assessments of wetlands to facilitate development of inventories. Other activities that need to be done are gazettement of more wetlands as RAMSAR sites; implementation of a communication, education and public awareness campaign on wise use of wetlands. The country needs technical support with regard to wetlands policy development and management. It is also proposed in the COP 13 that a strategic management plan for Sudd be developed. In addition, the GRSS also needs to domesticate the Ramsar convention by passing its own laws for the management and protection of wetland.

***National Target 6:* By 2020, the National Strategy on Invasive Alien Species (IAS) is fully developed and under implemented, with the participation and full consultation of all the stakeholders and its implementation has been initiated.**

1. Description of Measure:

- ❖ *Development of an Invasive alien species Strategy.*
  While this has not been undertaken yet, South Sudan as a member of the Intergovernmental Authority on Development (IGAD) participated in the development of the IGAD's Regional Biodiversity Strategy which was completed in July2017. "*The aim of this strategy is to prevent the introduction and spreading of alien species in the region and the control and eradication of species that have already been established in the region and pose a threat to the biodiversity in the region".* The Strategy has identified strategic objectives, intended outcomes and prescribed activities and therefore provides a framework to be used in South Sudan during the development of its strategy. In addition, it will be advantageous if the proposed actions such as the development of a regional IAS database and policing across the borders of the IGAD countries is done.

2. Effectiveness of measure:

- ❖ Ineffective

3. Reason for the rating:

- ❖ No actions undertaken in South Sudan to develop a country strategy. The methodology used was stakeholder interviews with the MEF and literature review including review of the IGAD Alien Invasive Species Strategy.

4. Other relevant information to illustrate how measure will contribute to the outcomes to the NBSAP:

- ❖ The Regional strategy has been guided by the IGAD Regional biodiversity Policy which had incorporated the provisions of the various conventions and therefore provide a good guidance document with strategic interventions already identified at the regional level. These only need to be domesticated to the country level.

5. Obstacles, Scientific and technical needs:

- ❖ These include low levels of awareness and knowledge among the local communities and policy makers on the negative impacts of alien invasive species; lack of mapping and

monitoring their spread including documentation of their impacts in terms of how they were affecting the social economic well of the people and the country; poor or lack of any coordination of management of AI in the respective sector ministries (agriculture, environment, water, fisheries, wildlife, forestry); inadequate technical and financial resources; poor regional coordination on research, monitoring, and management; and weak law enforcement capacity to ensure IAs are not brought into the Country[13].

National Target 7: Strengthen biodiversity-inclusive environmental impact assessment (EIA), Environmental Audits, and Strategic Environment Assessment (SEA).

1. Description of action/measure being undertaken.

- ❖ The key measures proposed in the draft NBSAP have not been undertaken, however, various agencies implementing programs and activities in the country have been subjecting their activities to the EIA process as well as raising awareness on the need to conduct EIAs. These include USAID and other donor funded activities as well as those implemented by UN agencies such as FAO. The WCS has also developed EIA guidelines for the extractive industry. These measures are regulatory. While the capacity of Juba University and other environmental management institutions has not been enhanced for purposes of building capacity, they still continue to graduate students in natural resources management and more specifically in EIA which is helping building the pool of these resources.

4. *Effectiveness of Measure*:
- ❖ Partially effective due to the limited coverage of these interventions as well as lack of a regulatory framework to enhance compliance and long term continuity. The methodology used is stakeholder consultations and literature review.

3. Reason for rating.

- ❖ At the MEF level, capacity in environmental/biodiversity management has been increased considerably at the under graduate level, however this is not adequate to manage and operationalize a fully-fledged EIA unit.   In addition, the institutional framework as well as a supporting legal framework are not in place; and EIA Guidelines/regulations have not been developed.
- ❖ While courses are being offered in EIA and other biodiversity related courses at the university of Juba and others have received training in universities outside South Sudan, the University of Juba is constrained in terms of funding which affects how well it is able to deliver in the field of new information (field work is limited). The research aspect of the faculties/departments' offering biodiversity related courses at the university is weak. In addition, the deployment of those who have graduated from different universities into institutions where they can be meaningfully engaged and make an impact is unknown.

5. Obstacles, Scientific and technical needs:

- ❖ Lack of a supportive policy and legal framework for implementation and enforcement of EIA, absence of EIA guidelines and regulations, inadequate resources (financial, technical and human resource needs) affect implementation of an EIA process in the Country. In addition, the prevailing conflict limits activities being undertaken.

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[13] IGAD _Regional_Strategy_Invasive_20170715(1).pdf.secured.

National target 8: Commitment of states and the elaboration of a National Policy, ensuring the continuous and updated diagnosis of species and genetic resources and effectiveness of Action Plans for Prevention, Contention and Control of loss of biodiversity at species and genetic level in the country.

❖ None of the measures proposed in the NBSAP or any other have been undertaken.

National Target 9: By 2020, incentives and subsidies harmful to biodiversity have been identified and reformed, and controls related to biodiversity have been enhanced.

❖ None of the proposed actions has been implemented to date.

National Target 10: By 2020, the rate of loss of natural habitats (forests, wetlands, water resources catchments, mountains) is reduced by at least 50 percent (in comparison with the 2016 rate) and, as much as possible, brought close to zero, and degradation and fragmentation is reduced.

1. Description of Measures being undertaken (establish baseline conditions for Key natural habitats)

The measures proposed in the NBSAP were primarily focused on development of inventories for forests, wetlands and water resources as a bench mark for future monitoring. These have not been undertaken to date, however, some actions that contribute to improved management of these resources have been undertaken. These are as enumerated below for each of the resources:

Forests:

To address the major drivers of forest/woodlands loss in the Country, the South Sudanese government through the Minister for Trade and investment, Musa Hassan Tiel announced a ban on the exports of charcoal and wood in July of 2018 making the activity punishable by law while at the same time urging all responsible agencies to ensure the ban is implemented[14]. The RSS also plans to set aside 20% of its natural forests as reserve forests. In addition, the country has set a target of planting 20 million trees of different species (each of the 10 former states to plant 2 million trees in order to achieve the national target) over the next 10 years. Continuing forest degradation has been observed in many places especially near towns (Bor, Juba, and Lainya) and areas around refugee/IDP camps. It is estimated that the rate of loss of forest cover is currently1.5%-2% per annum. However, even in the prevailing situation, activities are being implemented at community level in various locations geared towards addressing the key drivers of forest loss (household energy, charcoaling which is big business in the country with exports to the Middle East and the east African countries and illegal logging) For example, in Maban County, the BRACED program funded by DFID has organized communities to develop Community Environmental Action Plans which have been implemented. UNFAO through the USAID funded Sustainable Agriculture for

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[14] www.sudantribune.com/spip.php?article65796. South Sudan bans exportation of charcoal, wood

Economic Resiliency (SAFER) commenced in 2017 and implemented in WES, NBG, WBG, Jonglei has aspects of sustainable management of natural resources especially resources shared communally. NIRAS is also promoting participatory Forest Management around the Imatong Forest Reserve and strengthening the charcoal value chain through the formation of an association of charcoal producers in eastern Equatoria. In the BJEL, WCS has developed a charcoal action plan using remote sensing data. The Government needs to synergize the various activities scattered all over the country for a wider coverage and better results. Additionally, FFI/Wildlife Service are working in Western Equatoria following principles of free prior and informed consent to define and establish community managed areas which are to serve as a buffer zones to the protected areas. The model used here is involving community rangers, also known as Community Wildlife Ambassadors (working side by side with the Wildlife Service Rangers), who are rapidly becoming environmental stewards for natural resources and protected area management.

Recognizing that wood fuel is a major driver of forest/woodland loss in the country, various organizations continue to promote use of energy efficient cooks stoves, especially in areas where populations in crisis are living. For example, 30 000 emergency livelihood kits which comprised fuel-efficient stoves in were distributed to camps, improvised settlements and host communities by FAO in 2017. The same affected households were also trained on fuel-saving cooking practices and stoves use. In addition these interventions have helped ease pressure on natural resources and minimize potential tensions between communities as well as helping protect women from violence associated with collecting firewood. Training on improved pruning techniques for the selective collection of firewood instead of cutting trees is also another strategy being promoted by FAO in the areas hosting IDPs[15].   The character of measures is legal (for the ban) while others are managerial.

2. Effectiveness of Measures

  ❖ Ineffective.

3. Reason for the rating.

  ❖ The measures to date have not reversed the prevailing situation of rapid loss of forests and woodlands because they are limited in scope. The ban on exports of timber and charcoal as well as the other two measures have not been effectively implemented to date.

4. Other relevant information to illustrate how measure will contribute to the outcomes to the NBSAP:

  ❖ Wanton destruction and unsustainable destruction of forests and woodlands is fueled by the market demands for timber and fuelwood. An effective ban on exports of timber and charcoal would go a long way in reducing the rate of forest degradation. Planting of trees will also minimize over reliance of natural woodlands for household needs for fuelwood and construction materials.

Water:
  A water, sanitation and hygiene sector (WASH) sector strategic framework was developed in 2011. Also an irrigation development master plan was prepared in 2015 for purposes of guiding irrigation development in the country. However, not much implementation is being undertaken currently which jeopardizes the wise use of water resources, water catchments

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[15] www.fao.org/3/i8012en/I8012EN.pdf

and wetlands and indirectly biodiversity conservation. A preliminary water assessment study was conducted in 2011 for the Ministry of Water Resources and Irrigation (MWRI) in the Government of Southern Sudan with support from the World Bank. This study assessed the status of various water variables, conducted a gap and needs assessment[16]. However, a follow up with a detailed assessment has not been undertaken. Another activity undertaken in 2015 was the development of water harvesting and natural resource management in South Sudan technical guidance document done jointly by FAO and UNEP with funding from the Peace Building Fund (PBF)[17]. The document is intended to serve as a reference document for the mainstreaming of sustainable natural resource management strategies in water harvesting structures by organizations investing in and/or implementing water harvesting projects for livestock and human consumption.

Analysis of key drivers of habitat loss and synthesis of key actions to be undertaken for restoration of forests, wetlands and water resources.

- ❖ Several studies have been undertaken which have characterized the key drivers of biodiversity loss in the country especially for forest and wildlife. These include: South Sudan First State of the Environment and Outlook Report (2017); South Sudan Tropical Forests and Biological Diversity Assessment FAA 118/119 (2018); South Sudan Tropical Forests and Biological Diversity Assessment FAA 118/119 Phase 1: Pre Field FAA 118/119 Desk Assessment (2014). However an in depth analysis at the local level may be necessary for purposes of designing local level actions. Synthesis of key actions to be undertaken for purposes of restoration of forests, wetlands and water resources has not been done.

5. Obstacles, technical and capacity needs

- ❖ *Lack of employment/poverty/Food insecurity*

- ❖ Poverty levels are very high in South Sudan due to the many years of conflict and the associated under development. Unemployment is also high especially of the youth. These two factors have led to over reliance on the exploitation of natural resources (forests/woodlands and wildlife) for sustenance of livelihoods. Charcoaling is a major livelihood activity which has attracted people from the neighboring countries. This has been facilitated by the breakdown of law of order since eruption of conflict in 2013. Wildlife poaching especially for game meat has also been rife fueled by the high demand for it arising from the problem of food insecurity in the Country. The underlying causes of poverty, unemployment, and food insecurity need to be addressed. Programming should especially target the youth who comprise a very high population of the country.

- ❖ *Water information is scarce and old.* There is lack of a comprehensive assessment of water information (hydrological – meteorological, surface and ground water) management system. A water information management system is also not functional due to lack of data/information, equipment and weather monitoring stations which are lacking in most of

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[16] World Bank. 2011. *Sudan - Preliminary water information assessment study: final report ()*. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/992271468119645862/Sudan-Preliminary-water-information-assessment-study-final-report

[17] https://postconflict.unep.ch/publications/UNEP_FAO_South_Sudan_WH_NRM_guidelines.pdf. Water Harvesting and Natural Resources Management in South Sudan, Technical Guidelines (2015).

the country (only 3 weather stations are operational in Juba, Wau and Raja). There is also need for data dissemination and exchange protocols[18].

❖ *Inadequate policy and legislative framework for the natural resources management sector.* Most of the policies and Bills for the sector have not been passed by government while others are drafts. This impedes effective implementation of activities and especially law enforcement.

❖ *Inadequate capacity for management of natural resources (technical, institutional)*

There are not enough trained personnel of all cadres for managing the forests, water, wetlands and other natural resources. The organizations are also lacking in terms of office space, vehicles, equipment among others.

❖ *Limited funding*
The budgets allocated are grossly inadequate for investment in the required infrastructure as well as the day to day operations.

National Target 11: By 2022, resource assessments, spatial, of biodiversity, ecological and land use planning and benchmarking of the value in South Sudan.

1. Description of Measures being undertaken:

Arial surveys and assessments for wildlife have been done since 2007 but largely focused on the Boma Jonglei Equatoria landscape (BJEL) and to some extent Western Equatoria with coverage at times has been constrained by insecurity. For the BJEL, the data collected since 2007 through surveys by WCS/South Sudan Wildlife Service (SSWS is informing decision making at the landscape level. Similarly the information gathered in Western Equatoria (Bangangai, Bire Kpatuos Game Reserves and Western Sector of Southern National Park) by FFI/SSWS are informing day to day protected area management. Monitoring of the populations of the white eared kob/tiang migration has also informed the need to expand the boundaries of the Bandingilo NP, Boma NP, establish migratory corridors/connectivity as well as gazette the Loelle triangle at the southernmost tip of the Country as an important area for the white eared kob. Hardly any information has been collected for the other PAs, gazetted natural forests as well as plantations.

2. Effectiveness of measure.

❖ Measure has been partially effective due to limitations in terms of scale. The methodology used in the assessment was review of survey reports for the respective areas, interviews with those implementing some of the programmes and collaborating government ministries.

3. Reason for rating in this assessment.

❖ *The overall coverage of the surveys and resource assessments is limited in scope.*

4. Other relevant information that shows how the measure will contribute to achievement of NBSAP target.

Current and up to date biodiversity data/information is a requirement for the achievement of several of the national targets since it forms the basis for mapping and planning for biodiversity

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[18] *Nhial Tiitmamer, Augustino Ting Maya* Special Report, November 27, 2018 Climate Services Model for South Sudan's Rural Farmers and Agro-pastoralists. https://www.google.com/search?sxsrf=ACYBGNSqjj-
[18] file://th%20National%20Report%20SSudan/cop12_nr_south_sudan.pdf

resources and ecosystems. It also guides wise use of resources by indicating limits of sustainable use; indicates resources/species under severe decline therefore needing more protection.

5. Obstacles, technical and scientific needs

> ❖ *Lack of current scientific data to inform biodiversity management*

Monitoring/surveys of wildlife populations in most PAs except those in the BJEL, Bire Kpatuos GR and Bangangai GR, were last done in the 1980's. It is most likely that several PAs have lost the attributes that made them gazetted due to lack of a government presence for a long time. Similarly, a complete inventory of the forest resources in the county has not been undertaken, and therefore the data being used currently is old and may not be reflective of the situation on the ground.

Resources (technical, financial and equipment) are needed to collect biodiversity data covering most of the biodiversity rich area. There are efforts currently to analyse and consolidate studies that could have been undertaken more recently in support of the development of a national biodiversity data base through funding from the Biodiversity Information for Development (BID-GBIF funded by GEF. This however needs to be backed by comprehensive surveys of the biodiversity areas.

Ultimately, the capacity of the South Sudan institutions (wildlife, forests, water, fisheries, land, agriculture, and livestock) to collect data/information needs to be strengthened in terms of human resource capacity and the supporting infrastructure to undertake research, surveys, monitoring of implementation of the NBSAP once adopted.

National Target12: **By 2026, National Plan with ecological and land use planning and benchmarking of the value for sustainable use and management of biodiversity in South Sudan integrated into National Development Plan for South Sudan**

National Target 13:

By 2024, A programme for effective management of protected areas (PA) and the current PA network Established.

1. Description of Actions/measures Taken.

> ❖ Improvements in PA management (Consultations with PA staff and local communities, mobilization and setting PA priorities. Other measures currently being undertaken include the development of management plans for some of the PAs (Nimule and Badigilo national parks); mobilization of local communities for purposes of establishing conservancies in the corridors of the white eared kob/tiang migration, formation of wildlife security partnerships and activities geared towards reducing illegal wildlife activities (poaching, logging and trafficking in wildlife products and control of bush meat trade.

2. Effectiveness of measures

> ❖ *Partially effective. The methodology used in the assessment is through literature review and stakeholder consultations and review of project documents/reports and evaluations.*

3. Reasons for the rating

- ❖ The scope of interventions limited to a few PAs and even the targeted ones only have minimal resources for undertaking PA management activities. The other interventions have not reduced to a significant extent the threats facing wildlife and protected areas.

4. Other relevant information that shows how the measure will contribute to achievement of NBSAP target.

- ❖ Without an adequate improvements in PA management, the biodiversity resources they seek to protect will continue to get degraded. This can only be achieved if there is a national strategy for conservation of the PAs supported by park/reserve specific management plans which guide the operations of each respective area. Since wildlife in PAs migrates through community lands, it is therefore prudent to engage local communities to get a conservation buy in from them. In addition, they also need to benefit from conservation of biodiversity.

5. Obstacles, technical and capacity needs.

- ❖ Lack of adequate technical capacity and the supporting infrastructure (access roads to the PAs as well as inside for ease of movement, office space, housing, communication equipment among others).
- ❖ Low budgetary allocations for managing PAs effectively.
- ❖ Lack of adequate staff with the requisite skills for managing PAs effectively
- ❖ Insecurity.

National target 14

By 2023, a national collaborative resource management programme for PAs, wetlands and water resource catchments developed and being implemented.

1. Description of measures being undertaken.

- ❖ A national collaborative program has not been developed but various NGOs are working with respective government ministries with considerable success. For example, WCS works with the MWCT, NGOs, CBOs and local communities in the BJEL and more so along the white eared kob/tiang wildlife migration corridors. The Natural Resources Management Group (NRMG) comprised of Undersecretaries from key natural resources management sectors have also been working in collaboration with WCS. FFI collaborates with MWCT in the Bire Kaptuos and Bangangai game reserves in the carrying out of wildlife surveys especially the chimpanzees. A Resilience Exchange Network (REN) hosted by the NGO forum has also been established as a platform for all NGOs working in south Sudan on issues of climate resilience[19]. South Sudan has initiated collaboration initiatives with Ethiopia on transboundary wildlife crimes and trafficking and also with Uganda under the Elephant Initiative, however, not much has been undertaken under these initiatives.

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[19] https://admin.concern.net/sites/default/files/media/migrated/knowledge_matters_-_improving_resilience_in_south_sudan.pdf. KNOWLEDGE MATTERS Issue 21 | October 2018Improving Resilience in South Sudan: experiences and learning.

2. Effectiveness of Measures.

❖ Partially effective

3. Reason for the rating.

❖ While collaboration has been initiated outside of the scope of the NBSAP process, the mechanisms for creating synergies and collaboration among the key actors have not been put in place. Existing collaborative activities are largely limited in terms of scope and scale. The regional collaboration initiated have not gained traction yet.

4. Other relevant information that shows how the measure will contribute to achievement of NBSAP target.

❖ Biodiversity issues are cross cut sectors, landscapes and physical jurisdictions. Effective management can only therefore be achieved through intersectoral and regional collaboration. In addition, many of the threats to the sustainable management of these resources come from the entire citizenry, therefore mechanisms of engaging and collaborating with them are essential.

5. Obstacles, technical and scientific needs.

❖ The proposed collaboration framework in the NBSAP has not been actualized which hampers the engagement process. There has also been minimal implementation of the NBSAP proposals due to limitations of funding. At the regional level, the collaborative agreements signed have not been implemented.

National Target 15.

By 2024, programme for restoration of degraded wetlands, including the Sudd, developed and under effective implementation.

❖ No measures are being implemented.

National Target 16

By 2024, programme for restoration of degraded forest areas, developed and under effective implementation.

❖ *No measures are being implemented.*

National Target 17:

By 2023, national programme for rehabilitation of degraded farmlands developed and under implementation.

❖ No measures are being implemented.

National Target 18:

By 2022, a national resource mobilization plan for biodiversity management developed and under implementation.

❖ *This measure has not been implemented.*

National Target 19:

By 2024, at least 50% of the required budget for the NBSAP, generated from diverse sources, is made available for its implementation.

The MEF and MWCT have made some little progress in mobilizing resources from the Global Environmental Facility (GEF). Three proposals for funding are in the pipeline (GEF-6; GEF-7) for the following:

❖ South Sudan has just prepared a GEF-7 project proposal titled '*Capacity support for accession to and implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in South Sudan'.* The amount solicited is, about $9000.

❖ Another GEF proposed project titled *"Capacity Development in Reducing Illegal Wildlife Trade and Improving Protected Area Management Effectiveness in South Sudan* "is under preparation and is   expected to commence in October 2019. In addition, the proposed project will also support South Sudan's accession to and implements its obligations under the Lusaka Agreement, CITES, the CMS, and the Horn of Africa Wildlife Enforcement Networks (HAWEN). GEF is expected to contribute $5,329,452 over a 4 year period.

❖ The USAID provided resources for the BJEL landscape conservation activities since 2008 to 2018 when the project ended.

❖ The US Government signed an agreement with WCS to fund the Boma Badingilo Landscape conservation project to the tune of $7.6 million. Additional funds to cover activities in the same landscape have been mobilised by WCS and other donors to the tune of $1.5million.

National Target 20. By 2022, ensure broad extension of environmental education in the society for improving awareness of population on biological diversity and ecosystem services.

1. Description of measures being implemented

❖ Undertake intensive awareness raising on the content of NBSAP at all levels.
❖ Sensitize local communities on what biodiversity conservation is and how they can benefit from biodiversity through radio, community gatherings and local government structures.
❖ Train staff of different Ministries, departments and agencies in Biodiversity management across central government and State Government and County levels

2. Effectiveness of measures being undertaken.

❖ Measures taken have been partially effective. Methodology used in assessment was through stakeholder interviews, review of project implementation reports and documents. With regard to staff training, capacity in the respective ministries has been gradually increasing although at a low pace.

3. Reasons for the rating. Most of the key stakeholders at the national level, universities, NGOs and CBOs participated in the process as well as in the NBSAP validation workshop. With regard to awareness creation to the public, some progress has been made but the coverage of population reached is insignificant.

4. Other relevant information to illustrate how measure will contribute to the outcomes to the NBSAP:

❖ Low awareness levels country among the policy makers and the general public about the value and importance of biodiversity in terms of supporting livelihoods and the social economic development of the has been associated with the degradation of biodiversity resources. Raising awareness is therefore critical for creating a positive impact on how people use these resources.

5. Obstacles, technical and scientific needs.

❖ Lack of employment/poverty/Food insecurity.

❖ Low levels of funding for natural resources management.

❖ Lack of a comprehensive national CEPA programme that is well funded. This would also be hampered by inadequate staff at all levels.

National Target 21:

1. By 2022, strengthen the role of the scientific research and professional institutions, NGO sector and media, including improvement of scientific technologies.

❖ There has been a continuous erosion of the scientific institutions and tertiary learning institutions that are critical for undertaking scientific research. Middle level training colleges (forestry, agriculture, fisheries, livestock and wildlife) are grossly under resourced and many are not even currently offering any courses.

National Target 22:

By 2022, significant increase in the contribution of scientifically-based information into biodiversity decision making processes and management interventions.

1. Description of Measures being undertaken

❖ Conduct resource surveys and assessment for biodiversity management.

2. Effectiveness of measure.

❖ Partially effective (limited in coverage but where these have been undertaken, they are providing critical information for decision making).

National Target 23:

By 2019, complete a biodiversity information system and build up the capacity of Clearing House Mechanism (CHM).

1. Description of Measure being implemented.

❖ Establish a clearing House Mechanism and operationalize it.
❖ Develop a national Biodiversity database system.

2. Effectiveness of measure.

❖ Measure has been partially effective.

3. Reason for the rating

The CHM is in place and operational with a website and a national Biodiversity data base developed.

National Target 24:

1. By 2026, complete a national inventory on the genetic diversity of species of cultivated plants, farm animals and wild relatives, with the view to develop actions to safeguard the genetic diversity of other priority species of socioeconomic value, animal species and selected wild plants.

2. Category of Progress towards achievement of this target.

❖ There is nothing to report on this target.

SECTION III: ASSESSMENT OF PROGRESS TOWARDS EACH NATIONAL TARGET

1.1. *National Target 1:*

1. By 2018, NBSAP adopted and being effectively implemented, and a comprehensive national biodiversity coordination framework is in place

2. Assessment of Progress: Progress but at an insufficient rate.

3. Evidence of assessment: South Sudan has prepared a draft NBSAP through a participatory process involving key stakeholders in government at both the national and state levels. Local NGOs were also involved in the process. A coordination Framework for the implementation of revisions being done on the draft after which the document will be forwarded for approval to the Council of Ministers and eventually Parliament.   Most of the actions proposed in the NBSAP have not been initiated.

4. Indicators used in Assessment:

❖ NBSAP development completed through a participatory process;
❖ NBSAP adopted and implemented.

5. Levels of confidence of assessment:

❖ Based on comprehensive evidence

6. *Adequacy of monitoring to support assessment:*

❖ Monitoring needed for the two indicators is partial but a more robust system will be needed for monitoring NBSAP implementation and effectiveness.

7. Describe how target is monitored and if there is a monitoring system in place

❖ No effective monitoring system is in place.

1.2. *National Target 2:*

1. Biodiversity values mainstreamed into the National Economic Development Plans and Budget Framework Papers, and for State Development Plans.

2. Progress made towards implementation of this target:

❖ **No significant change (3).**

3. Evidence used in the assessment

❖ Biodiversity values have been mainstreamed into some policies and national development plans. People are also largely aware of the benefits they derive from biodiversity especially for fuelwood, food security, construction materials, and forests as a source of hard currency from sale of timber, **however, they are not fully appraised on the steps they can take to conserve and sustainably use them for their benefit**. **In addition, the legal vacuum that exists is not supportive of the protection off these resources.** The actual value of these resources to the economy has not been computed and communicated to the MFP for integration into national development planning and the policy makers (national & state levels). Comprehensive valuation studies have not been undertaken[20]. The GRSS is however committed to achieving this as noted in the statement from President Salva Maryadit Kiir in the Foreword to the South Sudan First State of the Environment & Outlook Report in which he states "*the State of the Environment and Outlook report for South Sudan will form the basis and the benchmark for assessments, inventories, mapping and valuation of vast natural resources. The information thus generated will be used for future planning and management of natural resources[21]".*A system of integrating biodiversity values into the national accounts also needs to be developed.

This rating is based on the fact that many of the policies and laws with implications for biodiversity conservation have still not been passed by Parliament. In addition, even where the values have been included in policy, national development plans and budget frameworks have not fully

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[20] UNEP, 2018. South Sudan State of the Environment and Outlook Report
[21] Ibid.

integrated them. The two major activities proposed that would make achievement of this target a reality are the building of capacity for the South Sudan National Bureau of Statistics to collect and integrate biodiversity data into planning and budgeting; and undertaking of valuation studies on biodiversity/ecosystem services that would bridge the knowledge/information gap on the worth of these resources.

4. Indicators used in the assessment:

- ❖ Biodiversity and natural resources mainstreamed not mainstreamed into national accounting and financial reporting system;
- ❖ Biodiversity integrated into national Strategic Environmental Assessment (SEA) framework (national SEA Framework not developed yet
- ❖ No of sectoral plans that have integrated biodiversity values

5. Level of confidence of assessment

- ❖ Based on partial evidence. Since a system of integration is not in place, the assessment has largely relied on literature review and stakeholder interviews.

6. Assessment of adequacy of monitoring to support assessment

- ❖ No monitoring system is in place.

7. Describe how target is monitored and is there a monitoring system in place?

- ❖ There is no monitoring system in place to monitor target.

1.3. *National Target 3:*

1. By 2025, an integrated national biodiversity monitoring, assessment and reporting system is established.

2. Progress made towards implementation of this target:

- ❖ Progress but insufficient

3. Evidence to support the assessment:

- ❖ The process has been initiated and the Ministry of Environment & Forestry has initiated development of a national data for Development (NBDS) base through funding from the Biodiversity Information for Development (BID-GBIF funds running from 2017-2019 at a cost of 40,000 Euros. The NBDS Aims to contribute to the development, maintenance and update of biodiversity data and information for different users to aid reporting and decision making. Achievements to date include: Development of a biodiversity data mobilization plan; Awareness of Biodiversity Database stakeholders, Capacity gap/need identification, Procurement of ICT equipment (Software, Hardware) And Sharing of Biodiversity Data through data sharing protocols. Data & information readily available in different formats.   Assembling biodiversity data that is current, accurate and reliable for decision making takes a long time to gather, update etc. Systems for data gathering and analysis across all the NRM sectors also need to be developed and a coordination mechanism put in place.

2. *Indicators used in the assessment:*
   - ❖ Biodiversity database in place
   - ❖ No of datasets in the Biodiversity information system: To date, 5,197 occurrences have been recorded, 72 data sets exist with 50 publishers and 21 countries contributing data[22]. Species occurrence records accessible through GBIF have increased to 1,843 published occurrences and I dataset since 2018.
   - ❖ Capacity for management of information system strengthened: staff have been trained, ICT equipment has been procured and data sharing protocols and coordination mechanisms are in place.

5. Level of Confidence in the assessment.

   - ❖ Based on comprehensive evidence

6. Assess adequacy of monitoring to support this assessment.

   - ❖ Partial

7. Describe how target is monitored and whether there is a monitoring system in place

Since the National Database system is currently under development, a comprehensive monitoring programme is not in place.

   National Target 4:

1. By 2022, National Government and State Governments will have reviewed relevant legislation, policies and programs to maximize synergies with the NBSAP.

2. Progress to achieve target:

   - ❖ Progress but at an insufficient rate:

3. Evidence to support this assessment

 After the country's Independence in 2011, South Sudan engaged in a review of policies and laws to establish a south Sudan owned policy and legislative framework (National forest Policy, Environment policy, Water, Fisheries, and Agriculture) among others. Because most of them are an ongoing process, there is room for integration/strengthening them for purposes of making them more effective with regard to the sustainable management of biodiversity resources/alignment to the NBSAP as well as ecosystem services.

4. Indicators used in this assessment

   - ❖ Extent to national policies, development plans and sector strategies incorporate sustainable management of natural resources (forests, water, wildlife, land, fisheries, and agriculture) – All of them have to some extent provided for the sustainable management of natural resources.

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[22] Ibid

- ❖ Whether policies and strategies have been reviewed to incorporate proposals in the NBSAP.

5. Levels of Confidence of assessment

- ❖ Based on partial evidence. National policies and strategies have been reviewed but those at the state level were not accessible for review.

6. Assess adequacy of monitoring

- ❖ No monitoring system is in place.

7. Describe how target is monitored and indicate whether there is monitoring system in place.

- ❖ *No monitoring system in place.*

1.National Target 5: By 2022, prepare the legislation and establish the conditions for ratification and/or accession and implementation of the Nagoya Protocol, Cartagena and other biodiversity-related conventions (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Convention on Wetlands of International Importance, Especially as Waterfowl Habitats (RAMSAR), World Heritage Convention (WHC), International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and International Plant Protection Convention (IPPC).

2. Progress towards achieving this target:

- ❖ For CMS and WHC: **On track to achieve target**. However, the entire process of accession and ratification of conventions has been slow or no action has been undertaken.

3. Evidence used in this targets assessment:

- ❖ No action has been done with regard to the ITPGRFA, IPPC, the Nagoya Protocol on Access and Benefit sharing (ABS) for the bioprospecting, WHC, RAMSAR, CMS and CITES, some measures have been undertaken and these have been partially effective. On the whole, the ratification of the CMS, WHC, CITES, RAMSAR are on track.

With regard to Conventions that South Sudan has already acceded to or ratified (RAMSAR), the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention on Combating Desertification (UNCCD), some activities have been undertaken that include the following.

UNFCC: Preparation of the 1st National Communication; preparation of the National Adaptation Programme of Actions (NAPA) to Climate Change (November 2016). South is also a Partner to the Reducing Emissions from Deforestation and forest degradation (REDD). The Yei seed Company has been testing seed for climate resilience.

National Target 6:

1. By 2020, the National Strategy on Invasive Alien Species is fully developed with the participation and full consultation of the public and its implementation has been initiated.

2. Assessment of Progress.

   ❖ Progress but at an insufficient rate.

3. Evidence of this assessment

   ❖ While development of a national invasive alien species is at the planning stage, South Sudan as a member of the Intergovernmental Authority on Development (IGAD) participated in the development of the IGAD's Regional Biodiversity Strategy which was completed in July2017[23]. "*The aim of this strategy is to prevent the introduction and spreading of alien species in the region; and the control and eradication of species that have already been established in the region and pose a threat to the biodiversity in the region".* The Strategy has identified strategic objectives, intended outcomes and prescribed activities and therefore provides a framework to be used in South Sudan during the development of its national strategy. The Regional strategy has been guided by all the IGAD Regional biodiversity Policy which had incorporated the provisions of the various conventions. In addition, some legislation in the era before the signing of the Comprehensive Peace Agreement (CPA) existed which could be adopted in the development of IAS legislation for independent south Sudan.

4. Indicators used in the assessment

   ❖ The extent to which IAS are identified and Prioritized: Some of the IAS are documented, but their extent, rate of expansion and impact have not been comprehensively assessed, neither has this been mapped.
   ❖ The extent to which pathways for IAS are identified and prioritized: Not yet done
   ❖ The extent to which IAS are controlled and eradicated: No program in place.
   ❖ Adoption of national legislation relevant to the control of IAS: Not in place.
3. *Levels of Confidence of this assessment.*
   ❖ Based on comprehensive evidence*.*
4. *Assess adequacy of monitoring to support assessment.*
   ❖ No monitoring system is in place.

National Target 7:

1. By 2020, an Environmental Impact Assessment and Strategic Environmental Assessment institutional framework and regulations that fully integrate biodiversity concerns are in place and being implemented.

2. Assessment of Progress

   ❖ *Progress but at an insufficient rate.*

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[23] The Intergovernmental Authority on Development (2018). IGAD Regional Strategy - Invasive species Management.

3. Evidence to support this assessment

❖ This target has not been achieved since an institutional framework for implementation of the EIA process in the Country has not been fully established although an EIA unit does exist. However, the Constitution establishes an EIA unit as a mechanism/tool for identifying and mitigating adverse impacts on the environment, thereby safeguarding it. The University of Juba offers courses in EIA which are geared towards building the country's capacity in environmental assessments.   Enactment of the Environment Protection Bill to provide for a legal framework that supports implementation of EIA is a necessity. In addition, supporting guidelines and regulations also need to be developed. The WCS with funding from USAID has developed EIA guidelines for extractives and supported the Natural Resources Management Group (NRMG[24]) prepare a framework for planning and ensuring sustainable use in the BJEL. These are not yet approved by the GRSS.

❖ The anticipated review to assess if biodiversity issues are adequately integrated into the EIA processes in the country has not yet commenced. However, EIAs are conducted by Donor agencies such USAID who continue to use their own environmental procedures in all the activities they fund through their implementing partners and grantees. Other International Organizations implementing humanitarian programs since the eruption of the conflict in 2013 use their own environmental safeguard policies and procedures to minimize the adverse impacts of development on environment. These organizations include: UNFAO, UNICEF, and United Nations Office for Project Services (UNOP), World Health Organization (WHO) as well as international Non-Governmental Organizations such as concern worldwide.

4. Indicators used in this assessment.

❖ Is a fully functional EIA unit with the requisite capacity in place? No
❖ Are there national EIA guidelines and regulations in place to support implementation of EIA requirements? No
❖ Is there an approved government policy and law in support of the conduct of EIAs for all proposed development projects? (Not approved by Parliament).

5. Level of confidence in the assessment.

❖ Based on comprehensive evidence (stakeholder interview and with the MEF staff where the EIA unit is domiciled).
2. *Describe how target is monitored and whether there is a monitoring system in place.*
❖ Target is not monitored and there is no monitoring system in place.

National Target 8:

1.Commitment of states and the elaboration of a National Policy, ensuring the continuous and updated diagnosis of species and genetic resources and effectiveness of Action Plans for Prevention, Contention and Control of loss of biodiversity at species and genetic level in the country.

2. Category of Progress towards implementation of target

❖ *No significant change.*

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[24] This is a technical group comprised of Under Secretaries in the natural resources management sectors.

3. Evidence used in this targets assessment.

❖ There is no policy in place for continuous diagnosis and updating of species and genetic resources. In addition, there are no action plans in place.

4. Describe the indicators used in this assessment.

❖ National policy in place;
❖ Mechanisms of continuous diagnosis and updating in place;
❖ Action plans for prevention, contention and loss of biodiversity (species and genetic level in place.

5. Level of confidence of this assessment.

❖ *Based in partial evidence*

6. Assess adequacy of monitoring.

❖ *No monitoring system is in place. Target is also not monitored.*

National Target 9:

1. By 2020, incentives and subsidies harmful to biodiversity have been identified and reformed, and controls related to biodiversity have been enhanced.

2. Category of progress towards implementation of this target.

❖ Unknown

National Target 10:

1.By 2020, the rate of loss of natural habitats (forests, wetlands, water resources catchments, mountains) is reduced by at least 50 percent (in comparison with the 2016 rate) and, as much as possible, brought close to zero, and degradation and fragmentation is reduced.

2. Category of progress towards implementation of this target.

❖ ***Moving away from target.***

3. Evidence to support this assessment.

❖ Forest degradation has been observed in many places especially near towns (Bor, Juba, Lainya, Tambura & Ri Yuba, Yei,[25]) and areas around refugee/IDP camps. It is estimated that the rate of loss of forest cover is 1.5%-2% per annum.[26] Other resources (wetlands, water catchment areas and mountains) continue to get degraded.

4. Indicators to support this assessment

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[25] UNEP 2018. South Sudan State of Environment and Outlook Report, 2018
[26] Ibid

- ❖ Rate of loss of forests is at least halved and where feasible brought close to Zero: The rate of forest loss in south Sudan is 1.5%.
- ❖ Areas under sustainable forestry: Only the Equatoria Teak Company (ETC) is practicing sustainable forestry on 1,300 ha and has a concession area of 18,000ha.
- ❖ Natural resource management intensity – insignificant
- ❖ *Biodiversity intactness: Ranges from <60-75%*

With regard to wildlife, the WCS working in collaboration with the SSWS are working on initiatives geared towards minimizing habitat fragmentation and degradation in addition to promoting extension of Shambe and Boma National parks to include as much of the range of the white eared kob/tiang migration (wet/dry season movements). Loelle triangle is also proposed for gazettement as a PA as part of the same. It is envisaged that community conservancies will be established within the BJEL landscape to conserve part of this range as well as confer benefits to the local communities. WCS has to date conducted sensitization activities to some of the affected communities and even taken them to Kenya to learn about the conservancies and their management. Another activity being undertaken but on a very limited scale by WCS include promotion of energy efficient fish smoking technologies to reduce the amount of woodland loss.

National Target 11:

1. By 2022, resource assessments, spatial, biodiversity, ecological and land use planning and benchmarking of the value in South Sudan.

2. Category of Progress towards implementation of target.

- ❖ Progress but at an insufficient rate.

3. Evidence to support this assessment

- ❖ Arial surveys of wildlife have been undertaken in the BJEL more recently from 2007-2015/2016 by WCS. For other resources and wildlife outside the BJEL, FFI together with the Wildlife Service and Bucknell University have conducted frequent biodiversity monitoring in Western Equatoria's PAs. More specifically, wildlife surveys using remote sensing camera traps have been conducted in the game reserves on the border with the DRC (Bangangai and Bire Kpatuos) which have provided considerable data on wildlife including new species for the country list and some major range extensions. These surveys are ongoing, and focused on particular species such as chimpanzees and conducted by FFI in collaboration with the national Wildlife Service and Community Wildlife Ambassadors. They have also resulted, for example, in over half a million camera trap images being analysed through citizen science. Of relevance to land use planning, FFI and partners have undertaken boundary demarcation of the Game Reserves in Western Equatoria, following best international practices and this will help minimize conflict between wildlife authorities and the local communities[27]. A social economic baseline survey was conducted for the Imatong mountains water tower and the Kinyeti river watershed in 2014[28]. Assessments in other

areas have not been done and if so, this has been on a very limited scale and at community level.

4. Indicators used in this assessment.

- ❖ Capacity needs assessment (staff and institutional) for implementation of target undertaken: - Nothing has been done.
- ❖ Capacity building activities undertaken: Nothing has been done to date.
- ❖ No. of resource assessment surveys undertaken and area coverage.
- ❖ No. of land use plans developed and area coverage.

5. Level of Confidence in this assessment.
- ❖ Partial.
6. Adequacy of monitoring information
- ❖ Inadequate.

7. How is target monitored?

- ❖ There is no monitoring system.

National Target 13:

1. By 2024, developed a programme for effective management of protected area (PA) and current PA Network.

2. Category of progress towards achievement of target.

- ❖ Progress but at insufficient rate.

3. Evidence to support this assessment:

- ❖ The protected area (PA) system of South Sudan covers about 13% (82,030 km2) of the terrestrial areas of the country, which is higher than the African average estimated at 9%. This is 4% less than the 17% required by the Aichi targets. Several areas that include Lakes No and Ambadi; and the Loelle triangle are proposed for gazettement as PAs which would help exceed the Aichi target of 17%. Despite having a large PA coverage, there is lack of active management in most of them; and even where there are activities being implemented, these are grossly inadequate for effective PA management. The WCS with funding from USAID and other donors and working in collaboration with SSWS has invested some resources in the BJEL focusing on the Bandigilo, Boma, Shambe national parks and the eastern part of Southern National Park where improvements have been seen especially in wildlife security/containment of illegal killings. The FFI working in collaboration with SSWS has invested some resources in Bire Kpatuos GR, Bangangai GR involving demarcation, establishment of infrastructure and wildlife monitoring and patrols. They plan to extend this to the western sector of Southern National Park by the end of 2019. Resource constraints (human, technical and financial) are the greatest challenge to achieving this target. In addition, the BJEL program in collaboration with the SSWS has also identified and mapped the proposed migration route and other biodiversity rich areas for purposes of gazettement as protected areas. This is awaiting government approval. A 5 year General

management Plan (GMP) -2015-2020 for Nimule National Park was developed through a collaborative effort by the Ministry of Tourism and Wildlife (MTWC) and the African Wildlife Foundation (AWF); and completed in November 2014 while the GMP for Shambe National park was developed by the MTWC in collaboration with WCS. Due to funding limitations, implementation of the plans has been slow. The Nimule NP GMP seeks to support compatible and sustainable livelihood activities by adjacent communities and ensuring they benefit from conservation of wildlife resources in the NNP and the parks buffer zone.

Despite some notable efforts for boundary demarcation in a select few PAs (i.e. Bire Kaptuos GR, Bangangai GR), the boundaries of several PAs are not clear which limits effective policing. In the current situation where boundaries are unclear, those encroaching can always feign ignorance of where the boundaries are. In addition, there seems to be lack of clarity in the forestry sector as to who at the different levels of management owns which forest resource.

There is need to undertake PA boundary surveys and demarcate them especially in areas where incidences of natural resources conflicts are prone. The value of the current designated PAs with regard to the purpose for which they were established bearing in mind that so much could already have changed since their gazettement needs to be reassessed as a matter of priority.

Figure 1: South Sudan PAs and Proposed Extensions.
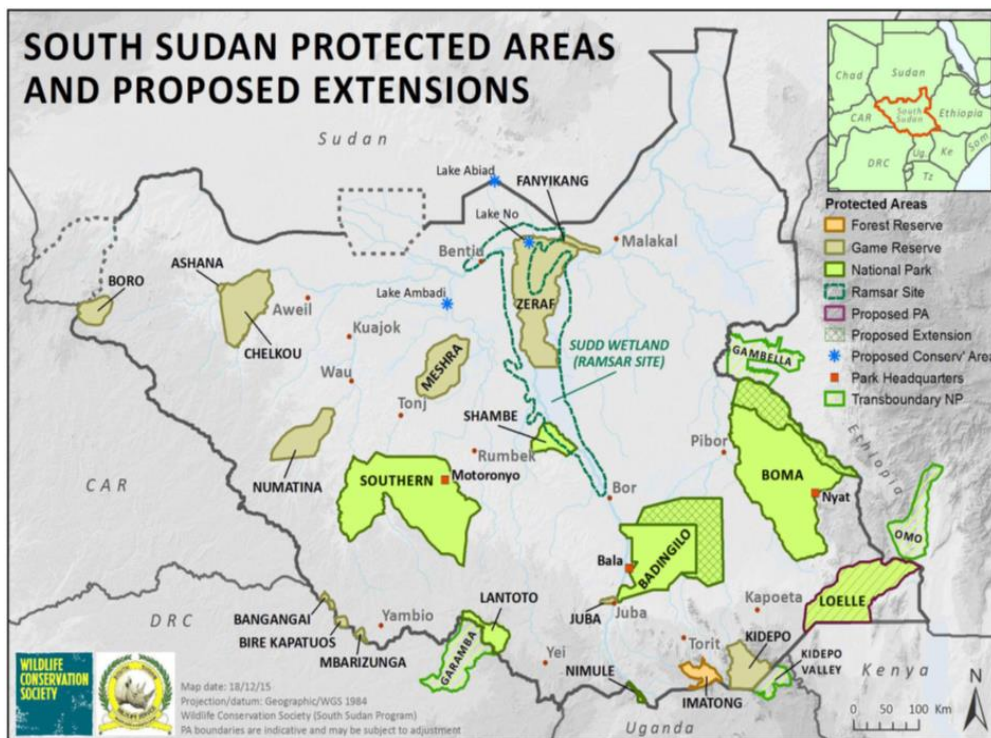
7. Indicators used in this assessment

- ❖ Situation analysis of PA in South Sudan undertaken and completed. (not undertaken)
- ❖ National Protected Areas Management plan developed and is being implemented: This is not in place.
- ❖ General management plans for all PA done and being implemented: Only two plans (Nimule and Badigilo have been done.
- ❖ PA management effectiveness -% of PA converted (see Figure in section 1V below). This is in the range of 75-99% for most of the PAs while Meshra, Shambe and Fanyikang are in the range of 100% converted. Boma National park, Chelkou, Ashana, Kidepo and Boro game reserves are in the range of 50-75 converted. The Imatong forest reserve has the least conversion at 25-50%.
- ❖ No of kilograms of ivory confiscated since 2015 – 2018: 930 Kg.
- ❖ Number of tons of bush meat seized at the borders and at the Juba International airport since 2015- 2018: 10 tons.

5. Level of Confidence

- ❖ Partial.

6. Adequacy of monitoring information.

- ❖ Inadequate

7. How is target monitored?

- ❖ There is no monitoring system

National Target 14:

1. By 2023, a national collaborative resource management programme for PAs, wetlands and water resource catchments developed and being implemented.

2. Category of progress towards implementation of target

- ❖ There is no significant change.

3. Evidence to support this assessment

- ❖ While a national collaborative program for management of PAs has not been developed, WCS with funding from USAID and other donors has been working collaboratively with the MWCT, NGOs, CBOs and local communities in the BJEL and more so along the white eared kob/tiang wildlife migration corridors. Through these efforts, wildlife security partnerships have been established and they have helped enhance wildlife security among other benefits. The capacity of the MWCT personnel in the national parks of Shambe, Boma and Southern NPs has also been improved. The Natural Resources Management Group (NRMG) comprised of Undersecretaries from key natural resources management sectors have also been working in collaboration with WCS and through these efforts, they have been able to inform and reverse decisions that would have been harmful for biodiversity such as the passing of the major road from Juba to Pibor in Jonglei state through Badigilo national park. FFI has also been working collaboratively with MWCT in the Bire Kaptuos and Bangangai game reserves in the carrying out of wildlife surveys especially the chimpanzees. A Resilience

Exchange Network (REN) hosted by the NGO forum has also been established as a platform for all NGOs working in south Sudan on issues of climate resilience[29]. The REN helps harmonize actions of the various actors for synergy and effective planning. South Sudan has initiated collaboration initiatives with Ethiopia on transboundary wildlife crimes and trafficking and also with Uganda under the Elephant Initiative, however, not much has been undertaken under these initiatives.

4. Indicators used in this assessment.

- ❖ *A technical working committee comprised of state and national PA staff, communities, NGOs and CBOs established and operational. Not in place.*
- ❖ *A collaborative resource management programme for PAs designed (Not in place)*
- ❖ *Collaborative resource management programme piloted and scaled up to cover all PAs.*

5. Levels of confidence.

- ❖ Partial.

6. Adequacy of monitoring.

- ❖ Inadequate

7. How is target monitored?

- ❖ There is no monitoring system in place.

National Target 15:

1. By 2024, programme for restoration of degraded wetlands, including the Sudd, developed and under effective implementation.

2. Category of Progress towards implementation of target.

- ❖ *No Significant Change*

3. Evidence to support this assessment.

- ❖ There are no wetlands restoration plans/activities being undertaken in the Sudd and elsewhere, however, under GEF-7 project, South Sudan has prepared a proposal for which one of the components is wildlife protection in the Sudd ecosystem focused on targeted intelligence led law enforcement operations; undertaking of Ariel and ground surveys to support wildlife planning in 3 PA (Shambe, Meshra and Zeraf), expansion of the PA coverage in the Sudd ecosystem and engagement with the extractive industry within the ecosystem at all levels.

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[29] https://admin.concern.net/sites/default/files/media/migrated/knowledge_matters_-_improving_resilience_in_south_sudan.pdf. KNOWLEDGE MATTERS Issue 21 | October 2018Improving Resilience in South Sudan: experiences and learning.

4. Indicators used in this assessment.

- ❖ Wetlands (including the Sudd) restoration plans designed with technical feasibility details.
- ❖ Wetlands restoration action plans implemented.

5. Levels of Confidence.

- ❖ Partial

6. Adequacy of monitoring information.

- ❖ Inadequate.

7. How is target monitored?

- ❖ There is no monitoring system in place.

National Target 16:

1. By 2024, programme for restoration of degraded forest areas, developed and under effective implementation.

2. Category of progress towards implementation of this target.

- ❖ No significant change.

3. Evidence to support this assessment.

No action has been undertaken to address this target. Forests continue to get degraded due to the breakdown in law and order preventing the forest directorate staff from effectively managing the resource, weak institutional capacity (resources, staffing, technical competence & finances).

4. Indicators used in this assessment.

- ❖ Forest resources action plan designed (not in place)
- ❖ Forest resources action plan implemented (not in place)
- ❖ At least 25% of degraded forests restored by 2024 (no action yet).

5. Level of confidence.

- ❖ Comprehensive.

6. Adequacy of monitoring information.

- ❖ Inadequate.

7. How is target monitored?

- ❖ There is no monitoring system in place.

National Target 17:

1. By 2023, national programme for rehabilitation of degraded farmlands developed and under implementation.

2. Category of Progress towards implementation of this target.

❖ No significant change.

3. Evidence to support this assessment.

❖ Program has not been initiated by government yet, however, the Ministry of Agriculture and Food Security commits to promoting sustainable agriculture in the Comprehensive Agricultural Master Plan (CAMP). At the community level, some localized activities may have been undertaken by some of the humanitarian agencies with programs on the ground, but this is really insignificant.

4. Indicators used in this assessment.

❖ Degraded farmlands restoration action plans designed (not done)
❖ Degraded farmlands restoration action plans (not done)
❖ % of degraded farmlands restored out of the targeted 30% by 2024 (minimal activities done)

5. Level of confidence.

❖ Partial.

6. Adequacy of monitoring target.

❖ Inadequate.

7. How is target monitored?

❖ There is no monitoring for this target.

National Target 18:

1. By 2022, a national resource mobilization plan for biodiversity management developed and under implementation.

2. Category of progress towards implementation of this target.

❖ No significant change.

3. Evidence to support this assessment.

❖ *Development of the* natural resources management mobilization plan has not been initiated as well as the other proposed actions in the NBSAP have not been developed.

4. Indicators used in this assessment.

- ❖ Natural resources management mobilization plan developed.
- ❖ Guidelines for financing biodiversity developed.
- ❖ Biodiversity financing instruments and solutions piloted at state and national level.

5. Level of Confidence.

- ❖ Comprehensive (respective line ministries noted no action has been initiated in this regard).

6. Adequacy of monitoring information.

- ❖ Nothing is in place since the process has not even commenced.

National Target 19:

1. By 2024, at least 50% of the required budget for the NBSAP, generated from diverse sources, is made available for its implementation.

2. Category of Progress towards achievement of this indicator.

- ❖ No significant change.

3. Evidence to support this assessment.

The MEF and MWCT have made some little progress in mobilizing resources from the Global Environmental Facility (GEF). Three proposals for funding are in the pipeline (GEF-6; GEF-7) for the following:

- ❖ South Sudan has just prepared a GEF-7 project proposal titled '*Capacity support for accession to and implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in South Sudan'.* The amount solicited is, about $9000. And as of now, the Ministry of Environment and Forestry has received $50,000 as project preparation grant.
- ❖ Another GEF proposed project titled"*Capacity Development in Reducing Illegal Wildlife Trade and Improving Protected Area Management Effectiveness in South Sudan* "is under preparation and is expected to commence in October 2019. Key activities to be undertaken include review/updating of various biodiversity legislations, establishment and operationalization of a multi-agency anti trafficking unit, protection of the wildlife of the Sudd and associated ecosystems (Shambe, Meshra & Zeraf), support to improvements in management effectiveness of Nimule National park, and support to communities to participation in wildlife conservation and tourism development in Nimule and livelihood activities. In addition, the proposed project will also support South Sudan's accession to and implements its obligations under the Lusaka Agreement, CITES, the CMS, and the Horn of Africa Wildlife Enforcement Networks (HAWEN). GEF is expected to contribute $5,329,452 over a 4 year period.

In addition, other organizations have mobilized resources independently from donors such as USAID to fund biodiversity conservation and management activities as highlighted below:

- ❖ The USAID provided resources for the BJEL landscape conservation activities since 2008 to 2018 when the project ended.

- ❖ The US Government signed an agreement with WCS to fund the Boma Badingilo Landscape conservation project to the tune of $7.6 million (this landscape covers 95,000 sq. Km and is one of Africa's most outstanding biodiversity areas).   Additional funds to cover activities in the same landscape have been mobilised by WCS and other donors to the tune of $1.5million. It will be implemented by the WCS, RSS, local communities, CBOs, and other organisations working in NRM, conflict mitigation, development and humanitarian actors. This project builds upon the success of the previously USAID funded project in the BJEL from 2008 -2018. The program aims to ensure effective conservation of key wildlife species and habitat, improve security and mitigate conflicts, enhance sustainable and resilient livelihoods for local communities within the Boma-Badingilo Landscape, and build partnerships with other programs and initiatives to multiply positive impacts for people and wildlife.

4. Indicators used to support this assessment.

- ❖ 50% of resource requirements for biodiversity management acquired.
- ❖ Increased funding from regular financing sources for biodiversity management.
- ❖ Guidelines for innovative mechanisms developed.
- ❖ Amount of funding raised/or in the pipeline for biodiversity management to date.

5. Levels of confidence.

- ❖ Partial evidence

6. Adequacy of monitoring to support this assessment.

- ❖ No monitoring in place.

7. Describe how the target is monitored and is there a monitoring system in place.

- ❖ There is no monitoring system in place.

National Target 20:

1. By 2022, ensure broad extension of environmental education in the society for improving awareness of population on biological diversity and ecosystem services.

2. Category of progress towards achievement of target.
- ❖ Progress but at an insufficient rate.

3. Evidence to support this assessment.
- ❖ Activities have been undertaken in respect of this target by a myriad of actors who include NGOs (local and international), UN agencies such as FAO, UNICEF, IOM, UNHCR and the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) consortium (Concern Worldwide, ACTED, FAO, Sudd Institute, and other partners). The BRACED consortium funded by the Department of Foreign International Development (DFID) implemented the Improving Resilience in South Sudan (IRISS) which was a 3 year program launched in 2015; and implemented in Northern Bahr El Ghazal (NBG), Warrap and Lakes state[30]. Each of the actors was focused on the sector they were working on and/or their program objectives. Awareness creation is integrated into the activities that they have been implementing especially between 2013 -2018.

❖ One aspect that has been given attention is forest degradation due to the high rate of extraction for firewood and production of charcoal for local and export trade. Awareness raising has been done on the need to use fuel efficient cook stoves which have also been provided by several actors countrywide, while others have provided skills training in their fabrication. Agroforestry is also being promoted to ease dependency on natural woodlands. Where these measures are being undertaken, they have been effective or partially effective but on a very limited scale.

❖ In the wildlife sector, WCS has trained 485 park rangers and educated communities on the importance of wildlife protection. The BJEL trained 21,000 people on the importance of wildlife protection. Over 1,000 people have been trained in sustainable natural resources management and/or biodiversity conservation under the program, including wildlife forces, community members and national and local authorities.[31] Local communities living within the wildlife corridors of the white eared/kob migration and where potential for establishment of conservancies exists were taken for exposure tours to Laikipia in Kenya by the WCS BJEL programme.

❖ Through the Improving Resilience in South Sudan (IRISS) project implemented under BRACED, 19 schools environmental clubs (SECs) were established as a pilot in 17 primary schools in addition to developing trainer guides with teaching modules information and educational materials. This initiative reached 1000 participating pupils. This was a milestone achievement that resulted in the issuance of a ministerial Order in November 2017 that all schools in the Republic of South Sudan establish environmental clubs. When implemented, this will have a great impact in terms of creating environmental awareness among learners. The same program spearheaded Community Led Total Sanitation (CLTS) which promoted improved water, sanitation and hygiene practices. In addition, the IRISS, established 19 Community Resilience and Planning Committees (CRPC) with a total of 324 members which has reached 23,210 people with climate information. Other awareness raising activities included training 2,914 targeted farmers and agro pastoralists in climate smart agricultural techniques {achieved through training in Agricultural and pastoral farmer field schools (54 established) };5,811 individuals on Community Led total sanitation (CLTS); while 957 people were trained) in fabricating fuel efficient stoves. Community facilitators were also trained on stove making and given readymade stoves for promotion of energy efficiency in their localities. The role of the CRPC is to raise awareness on natural resources management, disasters and climate change. Achievement of the CRPCs include development of local level ordinances aimed at controlling bush fires, tree cutting, identifying and helping design and implement flood control measures in addition to promoting tree planting, addressing unsustainable resource use and income generation. 49 Boma level action plans were also established and these tend to overlap in terms of roles with the agro pastoral field schools[32]. CRPCs have ensured a 30% gender inclusion.

[31] BJEL 2013 Annual report

[32] Nellie Kingston (2018). A Synthesis of Lessons from Improving Resilience in South Sudan Project: In https://admin.concern.net/sites/default/files/media/migrated/knowledge_matters_-_improving_resilience_in_south_sudan.pdf. KNOWLEDGE MATTERS Issue 21 | October 2018Improving Resilience in South Sudan: experiences and learning

- ❖ South Sudan radio (a Government of South Sudan radio service) has also been running an environmental awareness campaign on solid waste management in Juba town since 2011 which has helped improve the overall state of the environment. This has been achieved through clean up campaigns, recycling of some of the wastes and promotion of proper waste disposal. While it is noted some of the targeted audience don't pay attention to the program which uses an edutainment strategy, overall it was noted that it had helped improve the attitudes, behaviors and beliefs of the people[33].   The government (national and state) need to develop a Communication, Education, and Public Awareness (CEPA) campaign nationwide which would synergize efforts currently being undertaken on the ground.

- ❖ A monthly magazine titled "*News from the Bush*" was launched in January by WCS and distributed to about 1000 people by email and 600 via hard copies. A prominent bill Board has also been erected in Juba town raising the campaign against poaching and illegal trafficking o wildlife.[34]

4. Indicators used in this assessment.

- ❖ Number of environmental/biodiversity awareness campaigns conducted.
- ❖ Number of people reached by the awareness campaigns and their distribution countrywide
- ❖ Number of staff in the key biodiversity sectors trained about biodiversity and its importance in terms of supporting livelihoods and the country's economy in general
- ❖ Awareness creation materials and programs disseminated including mechanisms used.
  A national communication, extension and public awareness (CEPA) in place.
- ❖ A reasonable % of stakeholders at all levels (national & state) and aware of the NBSAP.

5. Level of confidence.

- ❖ Partial evidence.

6. Adequacy of monitoring to support this assessment.

- ❖ There is no monitoring system in place at the national and state government levels. Organizations implementing awareness raising activities have their own mechanisms of monitoring what has been undertaken and results.

7. Describe how target is monitored and if there is a monitoring system in place.

- ❖ There is no monitoring system in place.

National Target 21:

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[33]erepository.uonbi.ac.ke/bitstream/handle/11295/94426/Garang%20Gabriel%20Kuol_The%20role%20of%20National%20Radio%20in%20solid%20waste%20management%20in%20Jubao.pdf?sequence=1

[34] BJEL Evaluation report (2018).

1. By 2022, strengthen the role of the scientific research and professional institutions, NGO sector and media, including improvement of scientific technologies.

2. Category of progress towards achievement of target.

❖ *Moving away from target.*

3. Evidence to support this assessment.

❖ There has been a continuous erosion of the scientific institutions and tertiary learning institutions that are critical for undertaking scientific research. Middle level training colleges (forestry, agriculture, fisheries, livestock and wildlife) are grossly under resourced and many are not even currently offering any courses.

National Target 22:

1. By 2022, significant increase in the contribution of scientifically-based information into biodiversity decision making processes and management interventions.

2. Category of progress made towards achievement of this target.

❖ Progress but an insufficient rate.

3. Evidence to support this assessment.

❖ There has been limited collection of scientific information in most of the biodiversity sectors (fisheries, forests (including having an updated checklist of tree species found in South Sudan), agriculture, livestock and wildlife (surveys since 2007 have focused more on the BJEL landscape and notable efforts have also been undertaken in Western Equatoria, however coverage has been constrained to some extent by conflict). For the BJEL, the data collected since 2007 through surveys by WCS/South Sudan Wildlife Service (SSWS) is informing decision making at the landscape level. Monitoring of the populations of the white eared kob/tiang migration has also informed the need to expand the boundaries of the Bandingilo NP and Boma NP, gazette the Loelle triangle at the southernmost tip of the Country as an important area for the white eared kob and establish migratory corridors that would link the three areas thus facilitating the migration. FFI and the Wildlife Service have conducted surveys in Bangangai and Bire Kpatuos game reserves to identify species with broad estimates of population density. Data from transect surveys on the chimpanzee population will be completed in 2019. There has been little or no information collected from the other PAs, gazetted natural forests as well as plantations.

4. Indicators used in this assessment.

❖ Number of new scientific data generated for the respective sectors.
❖ Number of scientifically conducted surveys completed, area coverage, and range of resources included in the surveys.
❖ No of decisions proposed or made based on the results of surveys and scientific data/information generated.
❖ Capacity of national institutions (technical and institutional) in research strengthened.

5. Level of Confidence in this assessment.

3. Partial.

6. Adequacy of monitoring information.

4. No monitoring system is in place.

7. Describe how target is monitored.

5. Target is not monitored and there is no monitoring system.

National Target 23:

1. By 2019, complete a biodiversity information system and build up the capacity of Clearing House Mechanism (CHM).

2. Category of progress towards implementation of this target.

6. Progress but at an insufficient rate

3. Evidence to support this assessment.

7. A biodiversity information data base is under development while the CHM has been developed with two staff already designated to work for the CHM. The capacity of the staff is being developed gradually. However, It requires a lot more time to finalize a biodiversity information system that is responsive to the needs of the NRM sectors (refer to response on NT NO. 3). No staff have been trained in the fields of biotechnology and biosafety as proposed neither is there an accredited institution, therefore capacities are very weak.

4. Indicators used in this assessment.

8. Clearing house mechanism established and operational with a website.
9. National Biodiversity data base developed and populated.
10. Accredited biotechnology and biosafety strengthened infrastructure developed.
11. A critical mass of scientists trained in biotechnology and biosafety.

5. Level of confidence.

❖ Based on comprehensive evidence.

6. Adequacy of monitoring to support this assessment.

❖ Partial

7. Describe how target is monitored and whether there is a monitoring system in place.

❖ No monitoring system is in place.

National Target 24:

1. By 2026, complete a national inventory on the genetic diversity of species of cultivated plants, farm animals and wild relatives, with the view to develop actions to safeguard the genetic diversity of other priority species of socioeconomic value, animal species and selected wild plants.

2. Category of Progress towards achievement of this target.

- ❖ No Significant change.

3. Evidence to support this assessment.

- ❖ There is no information to indicate whether any activities have been implemented in this regard.

4. Indicators used in this assessment.

- ❖ Information on germ plasm documented
- ❖ Important species and varieties of crops and farm animals conserved.

5. Level of confidence.

- ❖ Based on limited evidence.

SECTION IV. DESCRIPTION OF THE NATIONAL CONTRIBUTION TO THE ACHIEVEMENT OF EACH GLOBAL ABT

This section reviews South Sudan's contribution to each of the Global ABTs. The

a. *ABT 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 (**corresponds to National Target 20**).*

Awareness raising activities have been done targeting various stakeholders although this has been localized and in areas where humanitarian programs are targeted. This has been undertaken by various NGOs (local & international) as well as UN agencies such as FAO. These awareness interventions are designed to address particular needs/drivers of environmental degradation/biodiversity loss common in the areas where humanitarian assistance programs are being implemented and are not holistic. One aspect that has been given attention is forest degradation due to extraction for firewood and charcoal and some of the actors have given fuel efficient cook stoves to IDPs and host communities. Agroforestry is also being promoted for improved soil fertility as well as a mechanism of easing dependency on natural woodlands. Where these measures are being undertaken, they have been effective or partially effective, In addition, awareness has been raised in the BJEL, Bire Kaptuos GR, Bangangai GR, around Southern National Park's Western Sector and around Nimule National Park adjacent communities on the importance of wildlife as a national asset that can also be utilized for social economic development of local communities that share space with it. On the whole, it can be concluded that while a significant population may be aware of some of the benefits they derive from biodiversity, they may not be fully appraised of the real value of biodiversity (for example the Lulu tree is used locally in a variety of ways, but its oil has a high commercial value in the international market with great potential for generating income and improving livelihoods locally). People may also not know or fully understand the steps they can take to conserve and sustainably use these resources for their benefit. In addition, the legal vacuum that exists is not supportive of the protection off these resources.

Indicators used in this assessment.

- Number of people reached by targeted environmental awareness campaigns: Many but a small % of the entire population. (Difficult to aggregate numbers).
- Number of activities focused on raising awareness on biodiversity: several but there is no mechanism of consolidating this.
- Impacts of actions to increase public awareness on biodiversity: Limited in terms of numbers and area covered but are having some impacts.
- A Communication, awareness and public awareness plan developed and implemented: Not yet done.

Contributions to the SDGs. 4 & 12

Aichi Biodiversity Target (ABT) 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 (corresponds to NT 2)

While Biodiversity values have been mainstreamed into some development plans and policies, not much action has been undertaken in terms of implementation of the provisions that would assure their conservation/restoration. Comprehensive valuation studies have also not been undertaken[35], therefore the actual value of biodiversity resources to the economy has not been computed and communicated to the Ministry of Finance and Planning (MFP) for integration into national development plans. National policies, existing development plans {South Sudan Development Plan; the Comprehensive Agricultural Master Plan (CAMP) among others} recognize the value of biodiversity not only in assuring food security for the Country but also in terms of poverty alleviation. The recognition of this value and commitment to conserve South Sudan's biodiversity resources is recognized at the highest level of Government as stated in the Forward to the Country's First *state of the Environment and Outlook Report* by the President of the Republic of South Sudan. The President reiterates the importance of natural resources in the social economic development of the country and also acknowledges the threats facing those resources, especially forests; and commits that his government will ensure sustainable development.   The Constitution also emphases these values.

Indicators used in this assessment.

- ❖ *National and local development and poverty strategies have integrated biodiversity. To a large extent.*
- ❖ *National and local planning processes have integrated biodiversity: To some extent*
- ❖ *National accounting processes have integrated biodiversity: No*
- ❖ *National reporting systems have integrated biodiversity: No*

Links to SDGs 1, 8, 9, 11, 14, 15, 17.

ABT 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.

Nothing to report.

ABT 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.

For most of the natural resources, unsustainable consumption is the norm especially for forests, wildlife, water and land. Forest degradation is occurring at a rate of 1.5% per annum with biomas based fuel wood for cooking going up. Hunting for game meat is at an all-time high affecting a wide range of species. The following are some of the indicators used in this assessment.
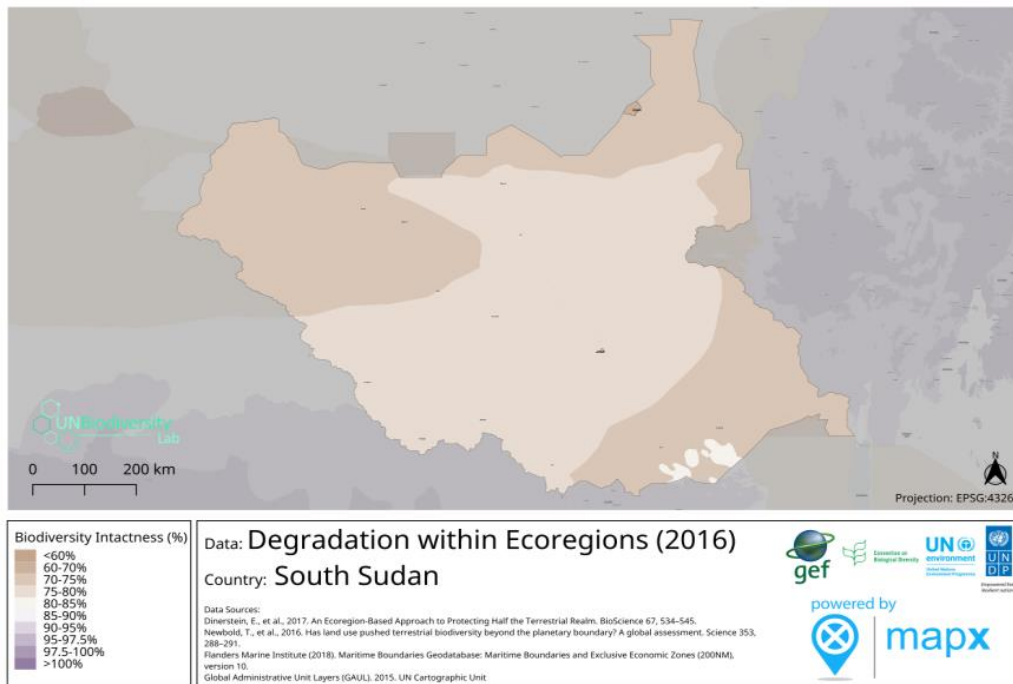
- ❖ Red list Index of species survival was 0.93 as at 2018 with the index changing at an annual rate of 0.03%.
- ❖ Ecosystem distribution and intactness/intactness (see Figure 3 below) which indicates that most of the country has an index of <60%-75%.
- ❖ Land use change

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[35] UNEP, 2018. South Sudan State of the Environment and Outlook Report

- ❖ Natural resource management intensity: This is extremely low.
- ❖ Number of sustainability management programmes in place: Only one (Equatoria Teak Company).

- ❖ Human foot print
- ❖ Future footprint

Figure 2: Degradation within eco regions and Biodiversity intactness

Data: Degradation within Ecoregions (2016)
Country: South Sudan

Biodiversity Intactness (%)
<60%
60-70%
70-75%
75-80%
80-85%
85-90%
90-95%
95-97.5%
97.5-100%
>100%

Data Sources:
Dinerstein, E., et al., 2017. An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm. BioScience 67, 534–545.
Newbold, T., et al., 2016. Has land use pushed terrestrial biodiversity beyond the planetary boundary? A global assessment. Science 353, 288–291.
Flanders Marine Institute (2018). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 10.
Global Administrative Unit Layers (GAUL). 2015. UN Cartographic Unit

ABT 5: By 2020, 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.

While forest degradation is still going on, south Sudan still has vast forest resources. Degradation has been observed in many places especially near towns (Bor, Juba, Lainya, Tambura & Ri Yuba, Yei,[36]) and areas around refugee/IDP camps. It is estimated that the rate of loss of forest cover is 1.5%-2% per annum.[37] To mitigate the current forest degradation, the government in 2018 imposed a ban on exports of timber (mainly hardwoods and charcoal, the two major drivers of forest/woodland degradation). If this is well implemented, it is likely to have a significant impact in terms of reducing degradation and fragmentation. In addition, some activities are being implemented at the community level in various locations geared towards addressing the key drivers of forest loss (household energy) as part of the humanitarian efforts in areas hosting IDPs who are a driver to forest degradation.

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[36] UNEP 2018. South Sudan State of Environment and Outlook Report, 2018
[37] Ibid

In the BJEL, the WCS working in collaboration with the SSWS are working on initiatives geared towards minimizing habitat fragmentation and degradation in addition to promoting extension of Shambe and Boma National parks to include as much of the range of the white eared kob/tiang migration (wet/dry season movements). Loelle triangle is also proposed for gazettement as a PA as part of the same. It is envisaged that community conservancies will be established within the BJEL landscape to conserve part of this range as well as confer benefits to the local communities. WCS has to date conducted sensitization activities to some of the affected communities and even taken them to Kenya to learn about the conservancies and their management. Another activity being undertaken but on a very limited scale by WCS include promotion of energy efficient fish smoking technologies to reduce the amount of woodland loss.

The following are some of the Indicators for this target.

- ❖ Rate of loss of forests is at least halved and where feasible brought close to Zero: The rate of forest loss in south Sudan is 1.5%. There has been a recent high rise in forest cover loss in the country as shown in Figure 3 below.
- ❖ Natural resource management intensity – insignificant
- ❖ *Biodiversity intactness: Ranges from <60-75% (see Figure...above);*
- ❖ *Loss in natural areas within ecoregions was more than 60% of the total land area with the rest being in the range of 38-60%.*
- ❖ *Human foot print*
- ❖ *Key biodiversity areas.*
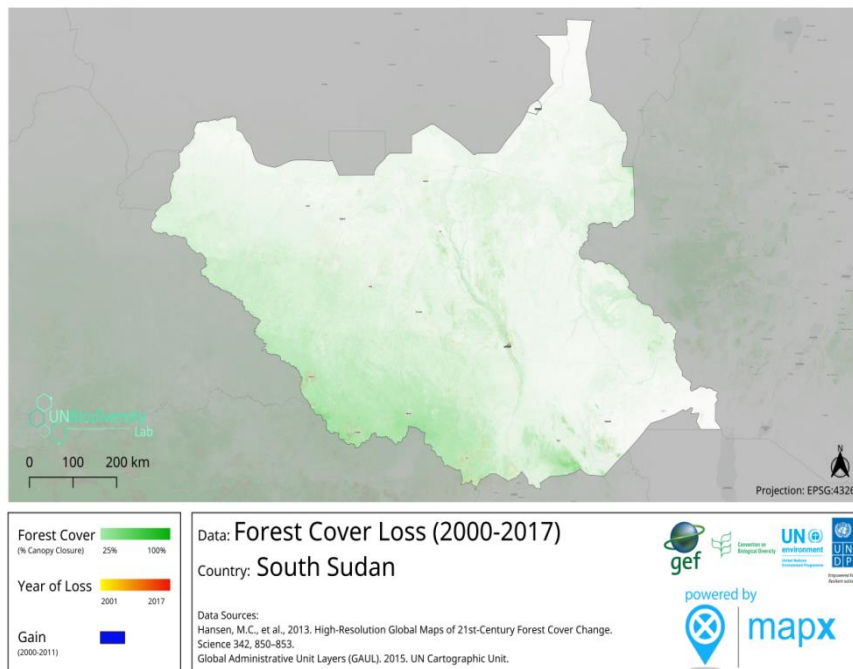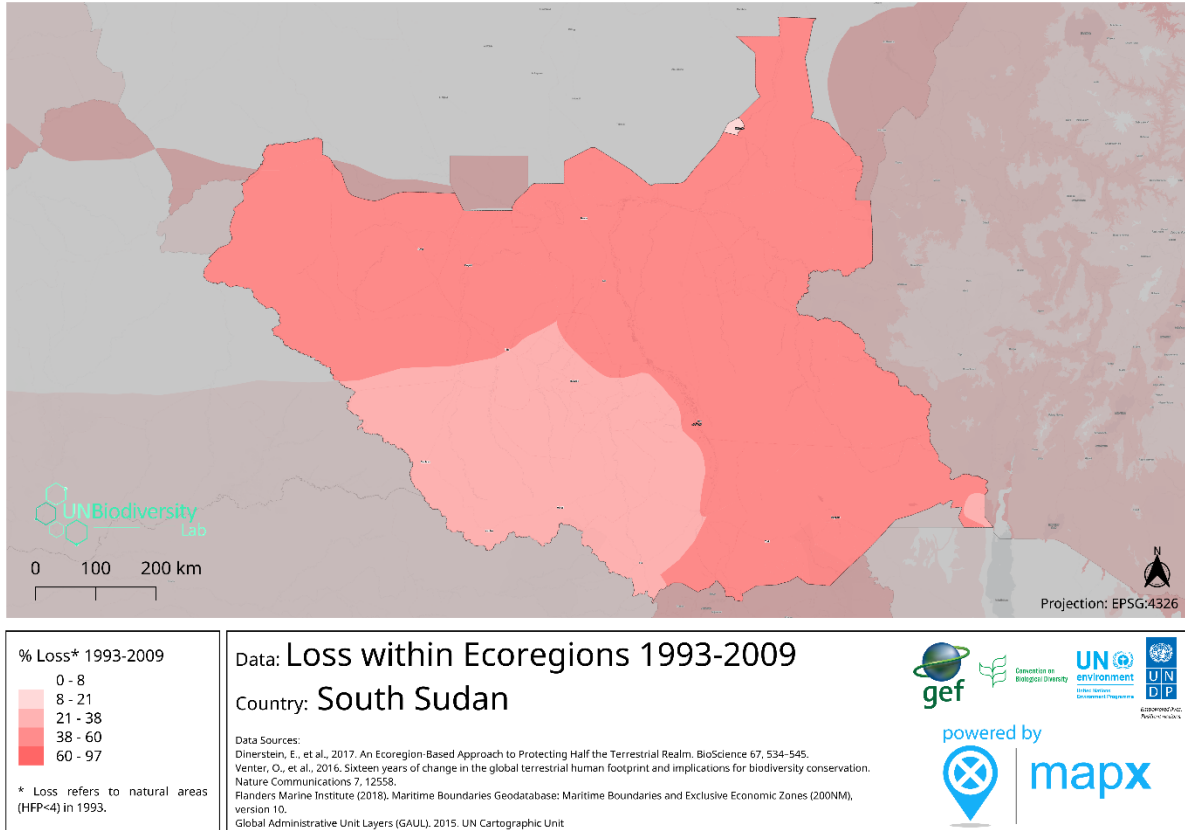
Figure 3: Forest cover loss (2000-2007)

Figure 3: Loss within eco regions

Forest Cover Loss (2000-2017)

Contribution to SDGs: (7, 13, 14, 15) but minimally.

ABT 6: 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.

There is very limited information on the current status of fisheries in South Sudan, most of which would come from the Sudd wetland. However, it is documented in several reports that fish stocks and size in the rivers flowing from the western plateau on the border with the Central African

Republic has declined significantly. In addition, fishers reported that 5 of the 15 fish species found in the rivers have disappeared[38].

Indicators used in this assessment:

- ❖ The extent and spatial distribution of areas under sustainable fisheries and water management. Most of the waters of south Sudan are not being used sustainably, neither are there areas where sustainable fisheries occurs. Current data on status of this resource is unavailable.
- ❖ Availability of information on safe ecological limits: This is lacking.

ABT 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Agriculture, aquaculture and forestry in south Sudan are largely not done in a sustainable manner. However, Equatoria Teak Company has been practicing sustainable teak plantations over the last 50 years. The company currently grows 1,700 ha of teak in western equatorial and has a concession area of 18,000 ha. The company has created jobs and has also demonstrated that a sustainable forestry industry can help improve the social economic wellbeing of communities in an areas through corporate social responsibility[39]. This is however a very small portion of sustainable forestry in the country.

ABT 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Water resources are getting seriously degraded especially where in rivers that traverse urban areas (most of the major towns are on the Nile and other rivers which in most cases do not have waste water treatment plants. Exploration for oil is also leading to water pollution from produced water. For example, a recent water quality analysis study in Unity State - following complaints by the local people of increasing salinity in the drinking water, and an increased incidence of livestock deaths - revealed that the upper aquifer was polluted by saline water that had slowly seeped from crude oil production activities. The fact that wells that were farther away from the potential contamination sources had less levels of contamination, while those located upstream of crude oil production facilities or exploration drilling sites were also less contaminated drew a direct linkage between the two[40]. Wetlands have also been noted to continue getting degraded for example, the Bor wetland shows significant loss from satellite imageries of 2002 and 2016 due to the growing human population[41]. Loss of wetlands leads to loss of the water purification functions.

In terms of actions to redress to the problem, no programme has been put in place.

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[38]

[39] equatoriateak.com/

[40] Hella Rueskamp1,*, John Ariki2, Klaus Stieglitz3 & Christoph Treskatis, 2014. Effect of oil exploration and production on the salinity of a marginally permeable aquifer system in the Thar Jath-, Mala- and Unity Oil fields, Southern Sudan

[41] UNEP, 2018: South Sudan: First State of the Environment and Outlook Report, 2018.

ABT 9: 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.

South Sudan as a member of the IGAD participated in the development of the IGAD's Regional Alien Invasive species strategy which was completed in July2017. "*The aim of this strategy is to prevent the introduction and spreading of alien species in the region and the control and eradication of species that have already been established in the region and pose a threat to the biodiversity in the region*". The Strategy has identified strategic objectives, intended outcomes and prescribed activities and therefore provides a framework to be used in South Sudan during the development of its strategy[42].

> **COMMUNITY CONSERVATION – SECURITY INTERVENTION IMPACTS**
> Working in partnership with a local organization called Community Empowerment for Progress Organization (CEPO), WCS has developed a sustainable capture fisheries and community cooperatives program in Gemeiza Payam. The program has benefited 43 persons and their families, who were mainly former hunters involved in killing wildlife. They are now deriving their livelihoods from sustainable capture fisheries and have established fishing cooperatives in four bomas. This way, the program has succeeded in removing former armed Mundari hunters out of the bush onto the Nile River thereby safeguarding Badigilo forests Nile by reducing the number of weapons and persons involved in hunting/poaching. It is also offering young men traditionally involved in the instigation of unrest, raiding, and banditry in an empowering alternative livelihood activity.

Indicators used:

❖ IAS identified and prioritized: Some IAS are known but mapping of locations and extent has not been undertaken. Key IAS for control have not been prioritized.
❖ IAS pathways identified and prioritized.
❖ Key IAS controlled or eradicated.
❖ Introduction of IAS prevented.

None of the above have been undertaken to date.

ABT 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas[43], 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.

The protected area (PA) system of South Sudan covers about 13% (82,030 km^2) of the terrestrial areas of the country,[44] which is higher than the African average estimated at 9%.[45] This is 4% less than the 17% required by the ABTs. Several areas that include Lakes No and Ambadi; and the Loelle triangle are proposed for gazettement as PAs which when done will increase the PA size to

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[42] IGAD Alien Invasive Species Strategy.
[43] It should be noted that South Sudan is a land locked country therefore coastal and marine areas would not apply. Also, the fact that South Sudan is completing its NBSAP in 2017 and early 2018, means that the timelines of the Global Biodiversity Strategic Plan 2011 – 2020 have been passed.
[44] GRSS, 2015. Fifth National Report to the Convention on Biological Diversity
[45] UNDP, 2009. Environmental Impacts, Risks and Opportunities Assessment Report

more than 17%. Other Proposed areas include the extension of Zeraf game reserve, Imatong Forest Reserve, Boma and Bandingilo NPs[46]. Of concern however is the state of the PAs most of which have had little or no management since gazettement. In addition, PA connectivity and habitat coverage has been lacking for purposes of facilitating migration of the white eared Kob and the Tiang within the Boma/Jonglei landscape. The following are some of the indicators for South Sudan:

❖ PA Representative Index as at 2012 was 0.4768 (most recent) and from 2000- 2002, it changed at an annual rate of 0.3%.
❖ Protected Area coverage of Key Biodiversity areas (KBA): Mean % of KBA covered by PAs in 2018 was 33.64. During the period from 1980-2018, the mean percentage each KBA covered by protected areas changed at an annual rate equivalent to 1.7%.
❖ Protected and Connectedness Land Index: The index for most of the country is in the range of 12-17% and 5-8% (see Figure 4 below).
❖ PA management effectiveness -% of PA converted (see Figure 5 below). This is in the range of 75-99% for most of the PAs while Meshra, Shambe and Fanyikang are in the range of 100% converted. Boma National park, Chelkou, Ashana, Kidepo and Boro game reserves are in the range of 50-75 converted. The Imatong forest reserve has the least conversion at 25-50%.
❖ Key Biodiversity Areas (KBA) Protection: 68.5 (see Figure 6 Below).

Other national indicators that show South Sudan's contribution to the global efforts to conserve biodiversity are:

❖ No of kilograms of ivory confiscated since 2015 – 2018: 930 Kg.

❖ Number of tons of bush meat seized at the borders and at the Juba International airport since 2015- 2018: 10 tons.
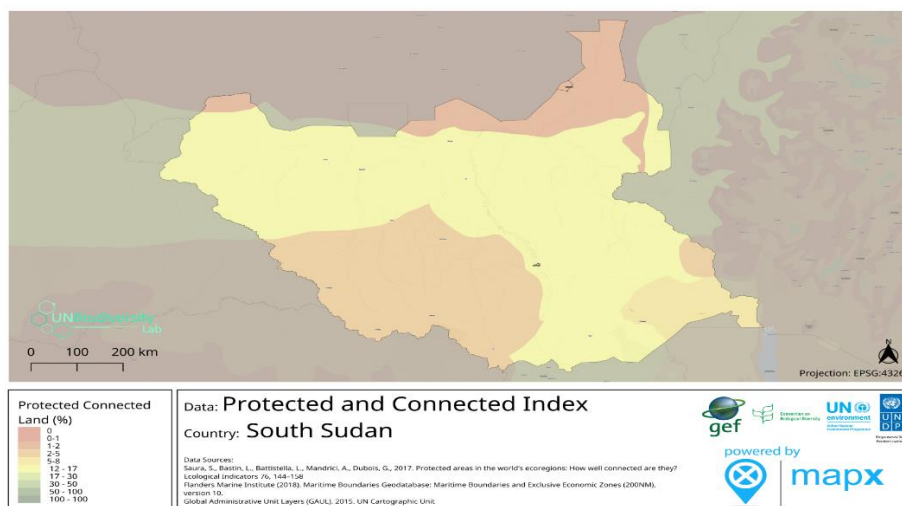
Figure 4: Protected and Connected Land Index

Figure 5: PA Management Effectiveness - % of PA converted

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[46] UNEP, 2018. South Sudan. First State of Environment and Outlook Report, 2019.
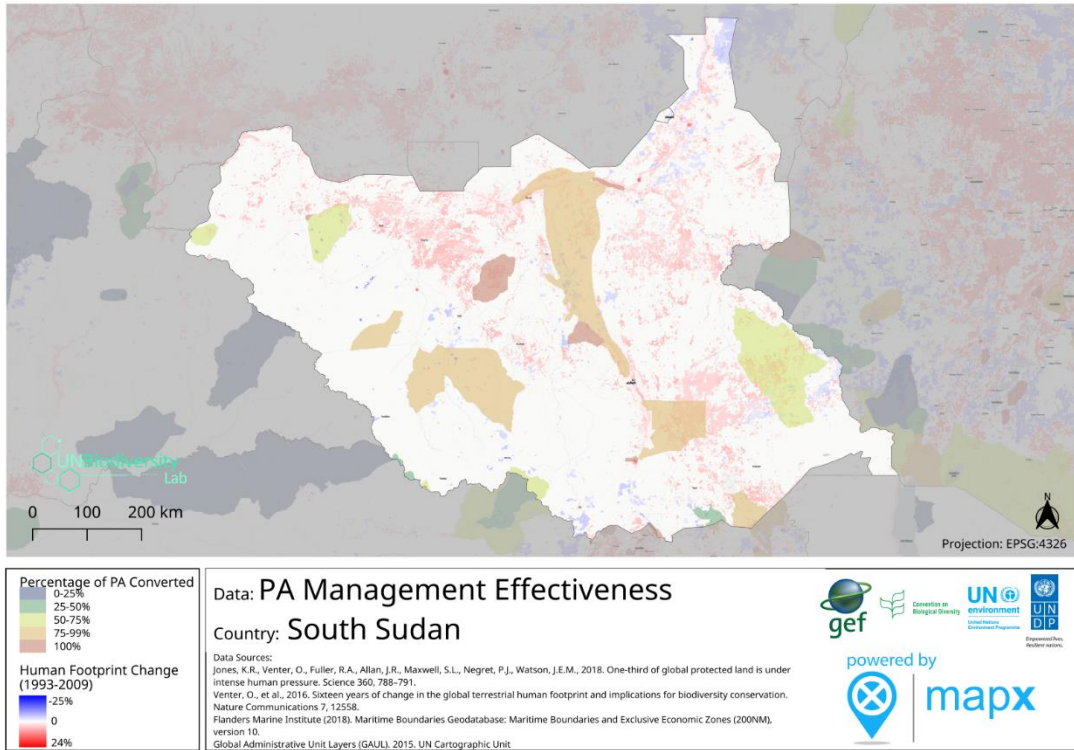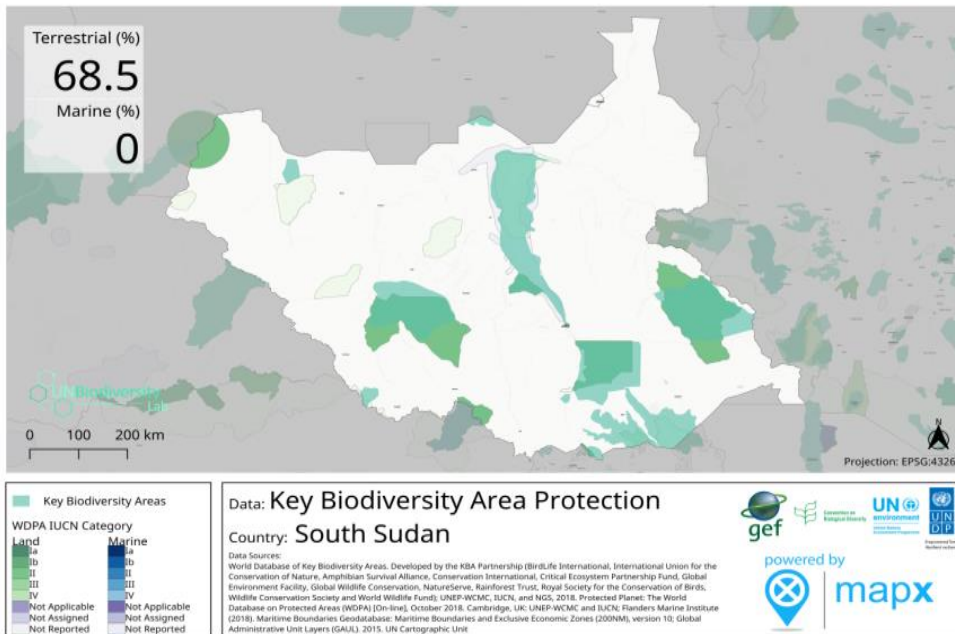
Fig. 6: Key Biodiversity Area Protection.

Contribution to SDGs: This contributes to SDG 6, 14, 15, 13, 16 17.

ABT 12:   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.

South Sudan with funding from the USAID and other Partners such as GEF and funded through the WCS working in collaboration with the Wildlife Service have made efforts to stem off poaching of threatened species (elephants, crocodiles, Pangolins, hippopotamus, and pythons) poached for trophies. These efforts are more concentrated in the BJEL where conservation- security partnerships have been established to monitor illegal killing of wildlife as well as real time natural resource conflict surveillance system. A broad   anti-trafficking canine unit has also been established along key transport routes to monitor and control trafficking in wildlife products particularly trade in endangered species. The GPS/satellite tracking effort is part of a USAID/WCS funded elephant monitoring and protection program launched in 2009, an initiative that also includes aerial surveillance from planes, land-based anti-poaching patrols, and intelligence-led enforcement (2013). WCS working in collaboration with the London-based organization Stop Ivory and the University of Washington in Seattle is helping the wildlife ministry in cataloging and testing the DNA of elephant tusks confiscated from markets in South Sudan and from Juba International Airport during attempts to smuggle ivory out of the country. This is done to determine whether the country of origin of the ivory (South Sudanese or other African elephants[47]) and informs anti-poaching/trafficking efforts.

Similarly, with funding from several donors, FFI has worked in collaboration with the Wildlife Service and together have made significant efforts to stem off poaching efforts through systematic and frequent ranger patrols, involving community rangers (aka Community Wildlife Ambassadors) in Bire Kaptuos and Bangangai Game Reserves, now looking to upscale this approach and to adapt it to the Western Sector of Southern National Park.

The Nubian giraffe is facing the threat of extinction and yet there is no program in the country that's geared towards its conservation[48]. Other species are also not quite secure including the African elephant, the chimpanzees , the Beisa Oryx, Nile Lechwe whose habitat is the Sudd wetland, and the Rhinoceros (*Diceros bicornis*) which is thought to exist although there have not been any recent sightings.

Indicators used in this assessment

❖ Red List Index for south Sudan

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[47] Source: https://www.usaid.gov/results-data/success-stories/protecting-south-sudan's-wildlife

[48] https://magazine.africageographic.com/weekly/issue-208/giraffes-silent-extinction/ Issue 208, June 2018.

Contribution to the SDGs: works being done on this ABT is contributing to the following SDGs (1, 2, 6,7,13,15,12, 16, 17.

ABT 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. **Nothing to Report.**

ABT 14: By 2020, 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.

There has been very little work done with regard to restoration of ecosystems such as forests, water catchments, rivers and the rangelands, however, at the very local level and in areas where humanitarian assistance programmes are being implemented, some activities such as development of community environmental action plans (Maban county) that form the basis for community action in the sustainable management of their resources (land, forests, rangelands) and community grazing plans are being implemented.

ABT 15: 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.

South Sudan prepared its NAPA in 2015 with support from UNEP during which priority actions for adaptation and mitigation of climate change were identified in line with the obligations to the UNFCCC. In addition, the country also prepared its Intended Nationally Determined Contribution (INDC) which was approved in 2017 by the Council of Ministers chaired by the President[49]. In this regard, the government of the RSS has committed to Low Emissions Development Strategy (LEDS).

Implementation of the NAPA and the INDC have been however been constrained by lack of financial and technical resources as well as a supportive legal framework. As a follow up to the NAPA, the RSS prepared a capacity needs assessment (CNA) for the Country's REDD+ program. The CNA was intended to conduct a gap analysis with regard to the implementation of a REDD+ program. This assessment would inform government and other stakeholders on the way forward in terms of implementation. This study was completed in June of 2016[50]. The country is therefore getting ready to meet its obligations to the UNFCCC with regard to climate change once the country stabilizes. This is a great opportunity since South Sudan has enormous forest/woodland resources that constitute a major a greenhouse gases (GHC) sink. In addition once forests are restored to some extent, other benefits such as restoration of watersheds, wetlands, inland waters biodiversity and especially fisheries; climate change mitigation and other social economic benefits will accrue.

Contribution to the SDGs: This will contribute to the achievement of SDG 13 – climate action which indirectly affects SDG 1, 2,14,15,16 among others. Little efforts that are promoting climate smart agriculture, agroforestry could be bearing fruit but this is very localized.

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[49] https://www.unenvironment.org/news-and-stories/story/national-council-ministers-endorses-intended-nationally-determined.
[50] Adkins B., 2016. South Sudan REDD+ Country Needs Assessment

ABT:16: 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.

South Sudan has just prepared a GEF-7 project proposal titled'*Capacity support for accession to and implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in South Sudan'.* This project which will be implemented over a 3 period will support the development of mechanisms for the country to accede to the Nagoya protocol. By end of the project, the South Sudan will have acceded bringing benefits to 3,400 persons (1,700 men and 1,700 women). As of now, Ministry of Environment and Forestry has received $50,000 as project preparation grant.

Contributions to the SDGs 1, 10,17, 9, knowledge and information management.

ABT 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.

South Sudan gained independence in July 2011 and acceded to the CBD in 2014. The country through the Ministry of Environment and Forestry embarked on the process of preparing its first NBSAP in 2017 and a final draft was completed in 2018. This was undertaken through a participatory/consultative process involving the major stakeholders in government (national and state level) NGOs and local communities. Draft NBSAP was subjected to a stakeholder validation workshop in November 2018. The NBSAP is currently undergoing final revisions before it's presented to the Council of Ministers for approval, after which implementation will begin.

Contributions to the achievement of the SDGs: When fully integrated into the budget and planning framework, it will contribute to better funding of the NRRD sectors that will facilitate many of the activities needed to ensure sustainable management of biodiversity resources. In addition, more prudent decisions with regard to management of natural resources and biodiversity will be made including reconciling development and conservation. Ultimately this will directly and indirectly contribute positively to almost all of the SDGs.

ABT 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.

 Nothing to report.

ABT 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.

There has been limited collection of scientific information in most of the biodiversity sectors (fisheries, forests (including having an updated checklist of tree species found in South Sudan) agriculture, livestock and wildlife (surveys since 2007 have focused more on the BJEL landscape and to some extent Western Equatoria with coverage at times has been constrained by conflict). For the BJEL, the data collected since 2007 through surveys by WCS/South Sudan Wildlife Service (SSWS is informing decision making at the landscape level. Similarly the information gathered in Western Equatoria (Bangangai, Bire Kpatuos Game Reserves and Western Sector of Southern National Park) by FFI/SSWS are informing day to day protected area management. Monitoring of

the populations of the white eared kob/tiang migration has also informed the need to expand the boundaries of the Bandingilo NP, Boma NP, establish migratory corridors/connectivity as well as gazette the Loelle triangle at the southernmost tip of the Country as an important area for the white eared kob. Hardly any information has been collected for the other PAs, gazetted natural forests as well as plantations.

ABT 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources should increase substantially from the current levels.

On June 18th 2019, the US Government signed an agreement with WCS to fund the Boma Badingilo Landscape conservation project to the tune of $7.6 million (this landscape covers 95,000 sq. Km and is one of Africa's most outstanding biodiversity areas).   Additional funds have been mobilised by WCS and other donors to the tune of $1.5million. This project builds upon the success of the previously USAID funded project in the BJEL from 2008 -2018. It will be implemented by the WCS, RSS, local communities, CBOs, and other organisations working in NRM, conflict mitigation, development and humanitarian actors. The program aims to ensure effective conservation of key wildlife species and habitat, improve security and mitigate conflicts, enhance sustainable and resilient livelihoods for local communities within the Boma-Badingilo Landscape, and build partnerships with other programs and initiatives to multiply positive impacts for people and wildlife.

South Sudan has just prepared a GEF-7 project proposal titled'*Capacity support for accession to and implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in South Sudan'.* The amount solicited is, about $9000. And as of now, the Ministry of Environment and Forestry has received $50,000 as project preparation grant??

Another GEF proposed project titled"*Capacity Development in Reducing Illegal Wildlife Trade and Improving Protected Area Management Effectiveness in South Sudan* "is under preparation and is expected to commence in October 2019. Key activities to be undertaken include review/updating of various biodiversity legislations, establishment and operationalization of a multi-agency anti trafficking unit, protection of the wildlife of the Sudd and associated ecosystems (Shambe, Meshra & Zeraf), support to improvements in management effectiveness of Nimule National park, and support to communities to participation in wildlife conservation and tourism development in Nimule and livelihood activities. In addition, the proposed project will also support South Sudan's accession to and implements its obligations under the Lusaka Agreement, CITES, the CMS, and the Horn of Africa Wildlife Enforcement Networks (HAWEN). GEF is expected to contribute $5,329,452 over a 4 year period.

SECTION 7: UPDATED SOUTH SUDAN BIODIVERSITY PROFILE:

Biodiversity Facts

Status and trends of biodiversity, including benefits from biodiversity and ecosystem services

South Sudan is richly endowed with ecosystems and landscapes that provide a diverse range of habitats for wildlife (flora, fauna and birds). These include lowland forests in eastern and western Equatoria, afromontane forests, and high altitude plateaus, wooded savannah, savannah grasslands, wetlands, floods plains and the Semi-arid region.[51] Many of the species found in South Sudan have not been documented as revealed by a survey conducted in 2015 in an area of about 7,770 km[2] in the forests of western Equatoria state which documented sighting of a total of 37 species (some not thought to be still present) - as well as four significant species: (the African golden cat *[Caracal aurata*], water chevrotain [*Hyemoschus aquaticus]*, red river hog [*Potamochoerus porcus*], and giant pangolin [*Manis gigantean]*) - that had never been sighted previously.[52] Current surveys of the lowlands forests of western equatorial have also confirmed that the forest elephants are present in South Sudan {pictures are available from Fauna & Flora International (FFI}.

Overall, South Sudan has about 30% (191,667 km[2]) of its total land area covered by diverse natural forest and woodlands.[53] South Sudan has several endemic species such as the Nile lechwe only found in the Sudd, the White-eared kob which is also endemic to Ethiopia, the Nubian giraffe, reptiles that include the Torit gracile blindsnake (*Letheobia toritensis*) and the Mount Kinyeti chameleon (*Trioceros kinetensis*) (*Barbus tongaensis*) and (*Labeo both of which are* freshwater fish.[54]

Other biodiverse ecosystems that South Sudan is credited with having are:

- The ungulate migration of the white eared Kob, tiang, Mangalla gazelle as they move through the Boma Jonglei landscape;
- The largest intact savannahs in Africa.[55]

Forest Cover Status:

Natural forests form the vast majority of South Sudan's forest estate. They are located mainly on the Ironstone plateau of central and western Equatoria. In addition to the forests west of the Nile, eastern Equatoria has a significant forested area. A mixture of Congolean forest species and fire climax species characterizes the natural forests of the Equatorias. Forests and woodlands of various types cover a large proportion of South Sudan's vast territory[56]. Its natural forests have high levels of biodiversity and wildlife habitat, and generate important ecosystem goods and services.

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[51] Deodatus, F., 2011. Environmental Impacts, Risks and Opportunities Assessment. Natural Resources Management and Climate Change in South Sudan

[52] Republic of South Sudan, 2015(b). Fifth National Report to the Convention on Biological Diversity (CBD)

[53] Ibid

[54] Ibid

[55] UNDP, Undated. Launching Protected Area Network Management and Building Capacity in Post-Conflict Southern Sudan (UNDP-SS-ProtectedAreaNetworkMGMTPProjDoc.pdf.

[56] Republic of south Sudan, 2015(b). Fifth National Report to the Convention on Biological Diversity (CBD)
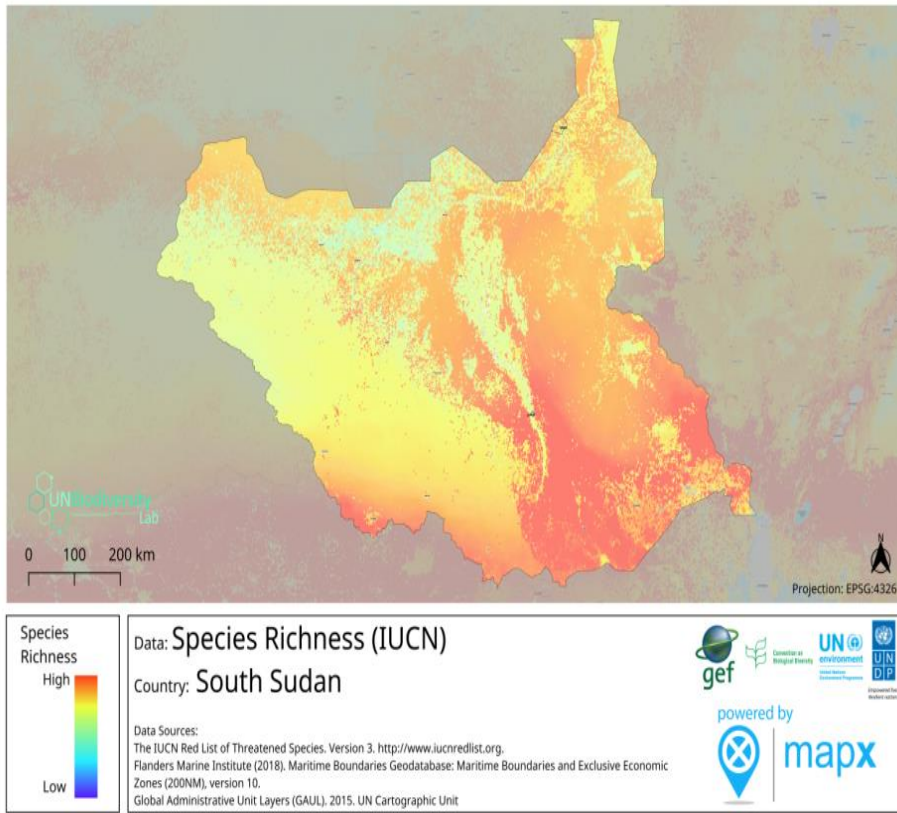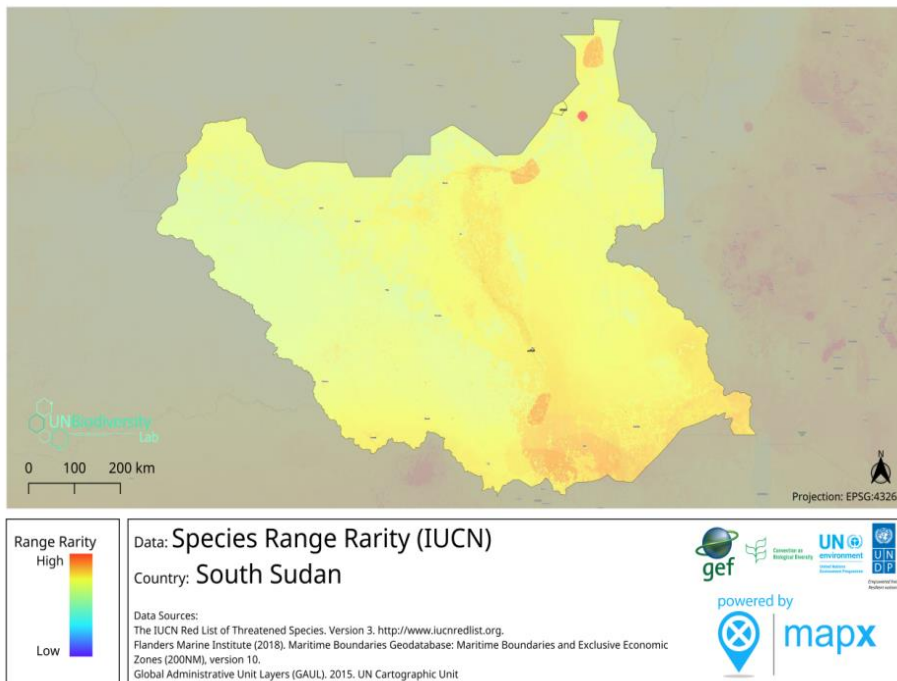
FIGURE 7: SOUTH SUDAN SPECIES RICHNESS

FIGURE 8: SOUTH SUDAN SPECIES RANGE RARITY

On the other hand, large areas of the country's forests and woodlands had remained untouched for decades but are currently experiencing serious pressures and rapid degradation. These natural forests, as well as current and future plantations, could play much more significant roles in South Sudan's economic development, but they will need to be managed sustainably so they maintain their valuable ecological attributes, and do not continue to degrade and disappear.[57]

Montane Forests (Imatong, Dongotona and Dindiga and Acholi)

The Imatong and adjacent mountains found to the South are covered by tropical moist forests. They are a major biodiversity hotspot (considered part of the Eastern Afromontane Biodiversity Hotspot) and have over 2,000 vascular plant and 500 bird species documented, as well as one of the largest intact *Podocarpus* forest in Africa.[58]. These are getting highly fragmented due to encroachment by agricultural activities (e.g. shifting cultivation), especially in the valleys bottoms. Illegal logging is also rampant – for example, the Dongotona Mts lost two-thirds of its forest cover from 1986 to 2011 and is likely to be cleared of all vegetation by 2020[59].

TABLE 1: ECOLOGICAL CLASSIFICATION OF FORESTS AND WOODLANDS, SOUTH SUDAN (2011)

ECOLOGICAL CLASSIFICATION OF FORESTS AND WOODLANDS IN THE REPUBLIC OF SOUTH SUDAN (2011)[60]						
	LOW RAINFALL SAVANNAH	HIGH RAINFALL SAVANNAH	MONTANE	SPECIAL AREAS	FLOOD REGION	TOTAL
Land area (km²)	17,900	325,800	2,600	37,500	235,900	619,700
Percent of total land area	2.9%	52.6%	0.4%	6.1%	38.0%	100%
Classification	Arid/Semi-arid	Sub-humid	Humid	Humid		-
Percentage by classification	2.9%	53.0%	2.9%	44.1%		100%

Status of Forests and Woodland Post 2013 Conflict
Forests and woodlands have experienced massive degradation since the eruption of conflict in 2013 and while actual data to show the change is not available, areas in the periphery of urban areas such as Bor, Juba and Malakal have lost a significant forest/vegetative cover which is

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[57] Ibid
[58] Ibid
[59] UNEP, 2018. South Sudan: First State of the Environment and Outlook Report, 2018

[60] Africa Forest Forum, 2011. Forest Plantations and Woodlands in Sudan

documented. There is also serious illegal logging in the plantation forests for teak and podocarpus species.

Wildlife

South Sudan is richly endowed with wildlife resources and boasts of one of the largest wildlife migrations globally that could rival that of the Serengeti/Mara ecosystem. Wildlife surveys done in the 2016/2017 year show that the population is still holding up despite the threats from poaching and the bush meat trade. The Table shows some of the endangered/threatened/rare species found in the country and their status according to the IUCN Red List.

TABLE 2: ENDANGERED, THREATENED AND RARE SPECIES IN SOUTH SUDAN

ENDANGERED, THREATENED AND RARE SPECIES IN SOUTH SUDAN		
NAME	STATUS	COMMENTS
Elephant *(Loxodonta africana africana) & Loxodanta africana cyclotis*	Vulnerable	2,300 from surveys undertaken and applied research from 2007 – end of 2013 (just before commencement of armed conflict). 730 counted during the 2015/2016 surveys, however, this count only covered 50% of the previously surveyed elephant range and also excluded the Sudd which is important for them.[61] *Loxodonta Cyclotis* confirmed by DNA sampling for the first time in South Sudan (FFI)[62].
Panthera pardus	Near Threatened	Sighted but population noted to be declining
Eastern Chimpanzee (*Pan troglodytes schweinfurthii)*,	Endangered	FFI has undertaken the First transect surveys to establish the population of the Chimpanzees in Bangangai and Bire Kpatuos Game Reserves. The surveys are nearing completion[63]. Species is currently at risk due to trafficking.
Wild dog *(Lycaon pictus)*	Endangered	Sighted during the 2015/16 Ariel Surveys in the Boma, [64]
Leopard (*Panthera pardus*)	Vulnerable	Numbers not documented. Indications of healthy population from FFI remote sensing camera surveys[65].
Cheetah *(Acynonix jubatus)*,	Vulnerable	Numbers not documented
Nubian giraffe (*Giraffa camelopardalis camelopardalis*)	Critically threatened	Nubian sub species was sighted in the 2015/2016 surveys in Shambe NP. The Kordofan giraffe was sighted in Boma and Bandingilo NPs and the corridors between the two[66].

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[61] WCS , 2017, Technical Briefing Document on the 2015-2016 on the Ariel surveys of South Sudan.
[62] Tubbs, Nicolas – FFI Senior project coordinator, East Africa.
[63] Nicolas Tubbs - FFI program Coordinator in South Sudan
[64] WCS, 2017 – Technical Briefing Document on the 2015-2016 on the Ariel surveys of South Sudan.
[65] Nicolas Tubbs - FFI Program Coordinator in South Sudan
[66] WCS , 2017, Technical Briefing Document on the 2015-2016 on the Ariel surveys of South Sudan.

ENDANGERED, THREATENED AND RARE SPECIES IN SOUTH SUDAN		
NAME	STATUS	COMMENTS
and the Kordofan giraffe *(Giraffa camelopardalis antiquorum)*.		Current population stands at 455 from an assessment conducted in February 2018.[67] The species is under risk of local extinction.
Hippopotamus amphibiuos	Vulnerable	Number not. not established but species is present within the Nile ecosystem
Black-crowned crane *(Balearica pavonina)*	Vulnerable	Current global population is between 3,300 -5,300. South Sudan population not indicated for the last assessment conducted in August 2018. Numbers are decreasing for this restricted range bird which has a global population of between 28,000-47,000 mature birds.
Beisa Oryx *(oryx Beisa)*	Vulnerable	No numbers documented in South Sudan although sighted in the Loelle triangle at the Southernmost tip of the Country. Sighted in recent surveys and global population from a last assessment done in February 2018 is between 8000-10,000 animals
Nile Lechwe *(Kobus megaceros)*	Endangered[68]	4,291 counted in 2007 in a survey undertaken by WCS. Species found in the Sudd and Machar wetlands.[69] It is endemic to South Sudan and the Gambela area of Ethiopia. Zeraf Game reserve protects the species
Rhinoceros *(Diceros bicornis)*	Endangered[70]	
	Critically Endangered	Thought to exist, however, no recent sightings reported
Pangolin, (Tree, Ground and Giant)	Vulnerable[71]	Surveys by FFI have confirmed their presence and ongoing surveys will be used to estimate numbers[72].

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[67] Wube, T., Doherty, J.B., Fennessy, J. & Marais, A. 2018. *Giraffa camelopardalis ssp. camelopardalis. The IUCN Red List of Threatened Species* 2018: e.T88420707A88420710. Downloaded on 04 December 2018.

[68][68] IUCN SSC Antelope Specialist Group 2017. *Kobus megaceros. The IUCN Red List of Threatened Species* 2017: e.T11034A50189177. http://dx.doi.org/10.2305/IUCN.UK.2017 RLTS.T11034A50189177.en. Downloaded on 05 December 2018. This assessment was done in November 2016.

[69] Fay et al. 2007

[70] IUCN SSC Antelope Specialist Group 2017. *Kobus megaceros. The IUCN Red List of Threatened Species* 2017: e.T11034A50189177. http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T11034A50189177.en. Downloaded on 05 December 2018. This assessment was done in November 2016.

[71] Waterman, C., Pietersen, D., Hywood, L., Rankin, P. & Soewu, D. 2014. *Smutsia gigantea. The IUCN Red List of Threatened Species* 2014: e.T12762A45222061. http://dx.doi.org/10.2305/IUCN.UK.2014-2.RLTS.T12762A45222061.en. Downloaded on 24 June 2019.

[72] Nocolas stubbs –FFI Country Pogram Coordinator,South Sudan

Name of Species	Status	Comments
Mongalla gazelle (*Eudorcas albonotata*)	Least Concern as per assessment done on 20th April 2016[73]	278,000 in 2007 arial surveys and noted to be declining[74].
Torit gracile blindsnake (*Letheobia toritensis*) and (*Labeo both of which are freshwater fish*[75]	Unknown	
Mount Kinyeti chameleon (*Trioceros kinetensis*)[76]	Unknown	
Enteromius tongaensis (a fin fish)	Not known	Endemic to the Nile/sudd wetland
Barbus tongaensis[77]	Not Known	Endemic to the the Sudd
Labea tongaensis[78]	Not Known	Endemic to the Nile/Sudd
Aloe species (Aloe diolii; austosudanica among others)[79].		

AVIAN BIODIVERSITY:

South Sudan has a total of 804 bird species documented with 21 of them being globally threatened[80].

IMPORTANT BIRD AREAS:

South Sudan has a total of 12 Important Bird Areas (IBAs) covering a total of 16,438,910 ha have been identified although no active monitoring is taking place at the moment[81]. The Sudd swamps is the largest and most important and encompasses 3 Protected areas (Shambe NP, Fanyikang and Zeraf Game Reserves). Other IBAs Include Boma NP and the adjacent Boma hills; Southern NP; Bandigilo NP; Bangangai Game Reserve; Bire Kpatuos Game Reserve, Juba reserve comprising Juba Nature Reserve and Jebel Kujur Forest Reserve; the Imatong Mountains; Kidepo Game reserve ; and Nimule Nimule NP[82]. FFI & Bucknell's work using citizen science work for camera trap analysis is revealing new & extension of home ranges for birds. Analysis of data gathered is ongoing.

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[73] IUCN SSC Antelope Specialist Group 2016. *Eudorcas albonotata. The IUCN Red List of Threatened Species* 2016: e.T8992A50188208. http://dx.doi.org/10.2305/IUCN.UK.2016-2.RLTS.T8992A50188208.en. Downloaded on 06 December 2018.

[74] WCS, 2007. Fay et al

[75] http://www.reptile-database.org/.

[76] Ibid

[77] https://Intreasures.com/SSudan.html.

[78] Ibid

[79] Ibid

[80] BirdLife International (2018) Country profile: South Sudan. Available from http://www.birdlife.org/datazone/country/south-sudan. Checked: 2018-11-27

[81] Ibid

[82] https://www.africanbirdclub.org/countries/South-Sudan/ibas

b. ECOSYSTEM SERVICES VALUATION

Biodiversity resources and ecosystems in which they are found play a significant role in sustaining life on the planet. South Sudan is committed to ensure sustainable development and highlights the important role that biodiversity and environmental resources play in the socio economic development of the Country. This has been highlighted in both the Interim and the Transitional Constitution of the Country as well as in the Vision 2040 and the SSDP. The following are the functions/roles that are provided by ecosystems:

- *Provisioning:* They provide food, construction materials (timber, poles, and thatch), fuelwood, medicines; biochemical and genetic resources.
- *Regulation:* Ecosystems/biodiversity supports ecological processes such as gaseous and nutrient cycling (carbon and nitrogen cycles); the hydrological cycle; soil formation and conservation, waste treatment; pollination and biological control. Forests play a critical role in carbon sequestration thereby minimizing the amount of carbon in the atmosphere (carbon in one of the GHG and contributes to climate change).
- *Cultural Services:* Provides important cultural services such as aesthetics/recreational, spiritual, inspirational and educational values. While tourism is not developed yet, there is enormous potential for its development thereby contributing towards social economic development of the Country.

TABLE 4: SUMMARY OF BIODIVERSITY/ECOSYSTEM SERVICES AND VALUES

Biodiversity Aspect	Benefits	Estimated Value
Forests/woodlands	90% of the population directly depends on them for fuelwood, food and nutrition security; and hydrological services[83]. Fuelwood and charcoal account for over 84% of all wood used in South Sudan[84]. Currently 99% of the population is dependent on fuelwood and charcoal as the only source of energy[85].	Value not calculated but is enormous.
	Source of high-grade timber, including teak, mahogany and ebony[86] for which a high demand exists globally.	Conservative estimates indicate the amount of teak exported annually in recent years to be less than 2,500 m3 while potentially, the teak plantations alone could generate over US$100 million per year, and mahogany in natural forest reserves could be a source of

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[83] FAO, 2017. Forests and Climate Working Paper 16. Analysis of Forests and Climate Changes in Eastern Africa

[84] Republic of South Sudan, 2015(a). Comprehensive Agricultural Development Master Plan (CAMP).

[85] www.indiaenvironmentportal.org.in/files/file/South%20Sudan%20First%20State%20of%20Environment%20and%20Outlook%20Report%202018.pdf. President Salva Kiir Mayandit of the RSS comment on the Preable to the South Sudan: First State of Environment and Outlook Report, 2018.

[86] African Development Bank (AfDB) Group, 2013. South Sudan: An Infrastructure Action Plan - A Program for Sustained Strong Economic Growth.

		substantial hard currency as well[87].
	Habitats for many wildlife species as well as a cultural heritage[88]	Support wildlife that has an enormous potential value for tourism.

Non Timber Forest Products (NTFPs)

Gum Arabica	Its ripe fruits are eaten raw or sundried and stored like dates, made into sweetmeats or fruit juice and mixed with cereals. The Leaves and young shoots are used as vegetables, added to soups while the seeds are roasted and eaten. It also has commercial value in the confectionary industry as a stabilizer, emulsifier and thickening agent	Potential annual production of gum Arabica estimated at between 6,541 and 15,580 tons which could net in an estimated annual export value of between $12,428,280 and $25,850,300[89]
The Shea tree (*Vitellaria nilotica)*	A traditional food security tree whose nuts are eaten. It also produces oil used for cooking in most households as well as premium oil for use in cosmetics, soap, detergents, pharmaceuticals, candles, confectionery. Chocolate and confectionery products account for 95% of shea butter demand, with only 5% currently used for cosmetics and pharmaceuticals[90]. The shea tree is hard, heavy, and resistant to termites, therefore important for building construction and the manufacture of mortars, craft goods and charcoal.	100,000 metric tons of shea nut per year, but only 10,000 metric tons are produced.
Herbal Medicine	The forests and woodlands of south Sudan are a source of medicine to a significant part of the population	Value of this not found nor the percentage of the population depending on herbal medicine.
Honey	Produced in the expansive woodlands of the Country and used at the household level. Commercial production currently low.[91] It is also an important source of income for rural	Honey Care Africa, ventured into the South Sudan honey business in 2014/2015, and managed to export 60 metric tons to Kenya, even though

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[87] Republic of South Sudan, 2015. Fifth National Report to the Convention on Biological Diversity

[88] FAO, 2017. Forests and Climate Working Paper 16. Analysis of Forests and Climate Changes in Eastern Africa

[89] FAO, 2017. Forests and Climate Working Paper 16. Analysis of Forests and Climate Changes in Eastern Africa
South Sudan Forest Working Group, 2004

[91] http://www.ss.undp.org/content/south_sudan/en/home/presscenter/articles/2017/08/04/-made-in-south-sudan-honey-highlights-economic-potential-and-challenges-for-local-enterprises.html

	communities.	their focus was only in the Greater Equatoria region in the Yei area[92]. Quantity and quality of honey produced and sold are not documented.
Other Benefits	Provide wild berries and fruits which are consumed as food. These include the Shea tree, Balanites, Tamarind, Mango and Acacia gum Arabica. In addition many other plants provide vegetables. These have been useful during the civil war when food was scarce, as well as during periods of droughts. Forests also provide fibre, shade, construction materials for housing and cattle sheds; and spiritual benefits.	No value has been calculated for all these benefits
Wildlife	Potential for Wildlife based tourism especially the tiang/white eared kob migration, the elephants, sudd.	Based on the impact of tourism development on the economies of both Kenya and Tanzania that rake in over $1billion in annual national income in addition to generating thousands of jobs, It can be deduced that South Sudan could have a similar potential.
	Food Security during periods of famine and conflict has been appreciated by many including the SPLA where one commentator said they could not have won the war without wildlife.	No monetary value has been calculated
Livestock Industry	South Sudan has the highest per capita holding of livestock in Africa at 11.7 million cattle, approximately 24.5 shoats[93] and over 75% of the country's population owning livestock.[94]	Estimated asset value of livestock in SSP. 7.0 billion[95];
Fisheries	The Sudd and other wetland/river systems support a fisheries industry which supports the livelihoods of 1.7million people **directly as well as contributing to food** security or income. Fishing employs about 220,000 subsistence fishers and 12,000 commercial fishers[96]	There is inadequate data on actual production of fish, however, the potential sustainable yield is estimated to be approximately 200,000 tons annually worth $800 million at 2013 Juba prices[97]. Others have estimated the sustainable yield

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[92] Ibid

[93] Lumoro, 2012.

[94] (Brown & Sidahmed, 2009; AfDB, 2013, CAMP, 2015).

[95] Ibid

[96] RSS, 2015. Fifth National Report to the Convention on Biological Diversity (CBD)

[97] Ibid

		to be between 100,000 - 300,000 tonnes per annum[98].
Water	Wetlands including the Sudd, rivers and lakes constitute the principal sources of water (domestic and livestock) for communities. They also hold an enormous potential for irrigation and generation of hydropower which can be harnessed for domestic use as well as export	No value has been calculated, but this is enormous. South Sudan can generate hydro power and sell to the other EA countries.
Watershed services	Constitute catchments (Imatong, Dongotona, mts on the border between S. Sudan and the Republics of CAR and DRC that are a source of water for the rivers and wetlands in the Country	
Cultural Services/Values		
Tourism	Potential to develop a tourism industry anchored on the migration of the white eared Kob/tiang as well as other species such as the elephant. The Sudd also holds an enormous ecotourism potential. Concentration of a large mammalian biomass (10,000 kg/km^2) in the seasonal floodplain in the Sudd provides excellent opportunities for traditional hunting and tourism if developed	Tourism is yet to be developed but has a potential value of I billion USD annually. Also has potential to generate thousands of jobs for the People of the South Sudan.
Regulating Services		
Forests and woodlands	They sequester carbon which is important for the reduction of Green House Gases (GHG). Using the figures from FAO assessments that indicated that forests and woodlands covered 11.5% and 51.6% of the country's land areas, the amount of carbon stocks held was computed to be 13,494.66 million tonnes[99]	

TABLE 5: MAIN PRESSURES AND DRIVERS OF CHANGE TO BIODIVERSITY

Pressures	Drivers (Direct)	Drivers (Indirect)
Land use change;	Expansion/encroachment of agriculture into biodiversity rich areas leading to loss of habitats/fragmentation	Population growth, Conflict which leads to Internally displaced persons (IDPs)
Unsustainable cutting of trees in the woodlands	High demand for fuelwood being almost the sole source of household energy; Lucrative trade in charcoal for use in urban centres as well as for export to	Limited livelihood activities Lack of alternative sources of energy

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[98] Lomuro, M. E. 2012: The Status, Potential and the strategy for Development of the Livestock and Fisheries Sectors.
[99] FAO, 2015. Forest Resources Assessment

	the Sudan, Saudi Arabia as well as neighbouring countries Population growth/increased number of human settlements needing construction materials IDPS (need construction materials, firewood and some burn charcoal for livelihoods).	Weak policing/law enforcement to regulate harvesting Management vacuum created by conflict
Illegal logging	Demand for high value timber on the international market (teak, Mahogany, Ebony, Pencil cedar) Weak policing/law enforcement and management vacuum/weak institutions for forest management.	Collapse of the economy due since the conflict started in 2013 Inadequate resources to department Lack of clarity about management responsibility for different categories of forests (National, State, County & Community. Lack of security of tenure forest resources on community land as well as their participation in forest management
Poaching (game meat, trophies) & illegal trafficking in wildlife and wildlife products	Huge demand for game meat Lucrative trade in ivory, chimpanzee, pan cake tortoise, python skins and the Elegant turtle - *Cyclonorbis elegan* (This is one of the last species of Elegant. It was previously spread in all the Nubian zone along the Nile. It has been established recently (two months back) that the part of the Nile along South Sudan is the last station in the world where Cyclonorbis elegant is found. *(The researcher who has been working on this species for the whole of his life said that for the first time for him to see a life elegant is in South Sudan*) and python skins Weak policing/Law enforcement,	Cultural preference for game meat among most of the ethnic groups in south Sudan; food insecurity, poverty, weak policing/law enforcement General breakdown of law and order due to the prevailing conflict, weak institutions for wildlife management, poachers are now armed. Inadequate community participation & benefits arising from wildlife conservation makes some of the locals abet poaching. Poverty; Inadequate resources (technical, financial, office space, vehicles, communication equipment).
Overstocking of livestock (cows, shoats, camels, donkeys) which leads to land degradation;	Cultural practice of keeping large numbers of stocks, status symbol as well as the mechanism for paying dowry Continued rangeland degradation	Lack of markets for livestock; Cultural – wealth is held as herds among the pastoralist tribes; Conflict may lead to the

Livestock incursions into South Sudan from the Sudan. These also occurs in some of the NPs/game reserves	constricts the range forcing pastoralists to move to new area or confining it to a smaller area;	concentration of herds in some areas; Weak policing of Pas Lack of clarity on PA boundaries. No offtakes even when the rangelands are constricting in size due to land use changes as well as climate change
	Alien invasive species proliferation	
Over abstraction of wetland resources including water. Fish could also be over exploited in some rivers despite the stocks in the Sudd still being largely untapped. Pollution/sedimentation.	Population Growth Urbanization, IDPs and others preferring to settle more towns due to insecurity; Opening up areas for irrigated agriculture may in the future cause over abstraction of water resources. Oil exploration/exploitation & Mining	Poverty/Limited opportunities for local people to support their livelihoods from other sectors. Conflict/Insecurity Lack of/or inadequate waste management infrastructure (sewerage & for solid waste); Lack of mechanisms for managing produced water in the oil field.
Diminishing resources rainfall, water inflows, vegetative cover., species composition	Climate change	Clearing of vegetative cover for cultivation, forest woodland degradation for timber, construction materials, firewood, slash & burn agriculture, illegal logging, overgrazing.

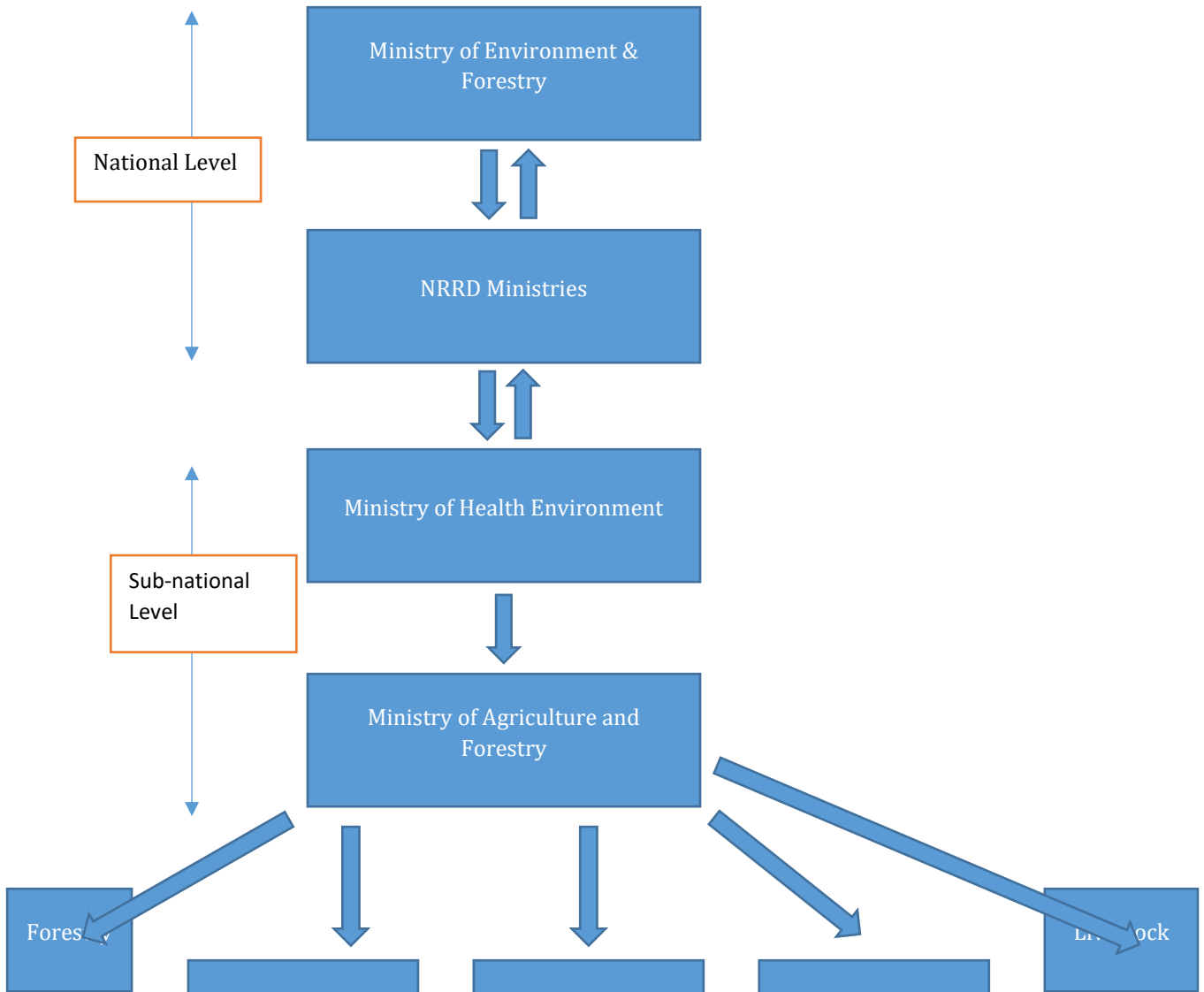## Measures To Enhance Implementation Of The Convention

c. Implementation of the NBSAP

The first National target in the NBSAP is the establishment of a National stakeholder co-ordination framework for biodiversity management which should also be trickled down to the sub-national level. Key stakeholders are drawn from 8 sectors that are involved in some way or other in the management of biodiversity resources. These include the Ministries of Wildlife Conservation and Tourism (MWCT), Environment and Forestry (MEF), Livestock and Fisheries (MLF), Agriculture and Food Security (MAFS), Water Resources and Irrigation (MWRI), and Petroleum and Mining (MPM). Other Partner Ministries with a facilitators role include Ministries of Finance and Planning (MF&P), Justice and Constitutional Affairs (MJCA), Labor and Public Service and Human Resource Development (MLPS & HRD), Foreign Affairs and International Cooperation (MFAIC), Gender, Child And Social Welfare (MGC &SW) , Parliamentary Affairs (MPA) and Ministry of Information.
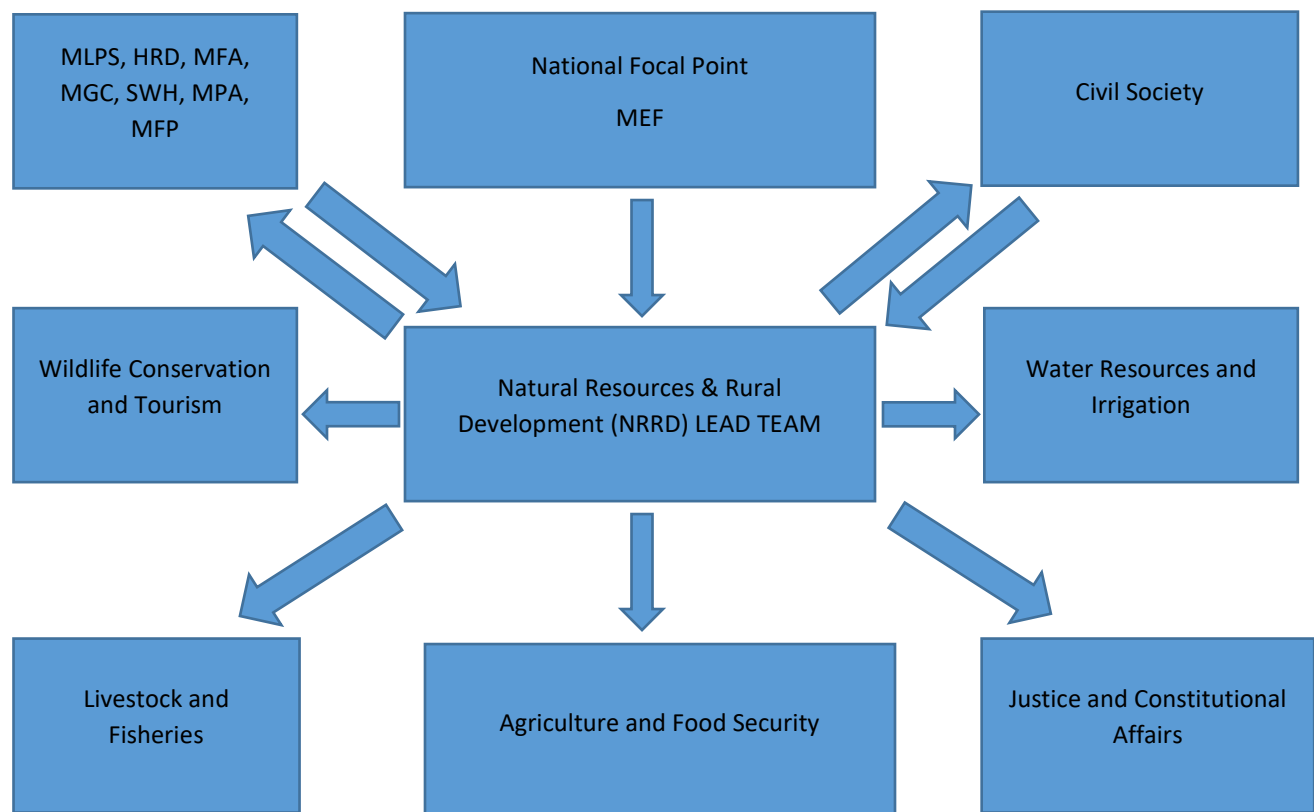
This structure aims to coordinate and integrate biodiversity conservation among the various actors for building synergy and harmony in the implementation of biodiversity management programs, strengthen decision making through the constitution of the National Biodiversity Technical Committee (NBTC); fast track integration/mainstreaming of biodiversity values into national economic development plans, Budget Framework papers and state development plans; as well as strengthen monitoring and reporting on the implementation of the NBSAP.

d. PROPOSED NBSAP IMPLEMENTATION STRUCTURE AT THE STATE LEVEL

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                    ┌─────────────────────────┐
                    │  Ministry of Environment │
                    │        & Forestry        │
  ┌──────────────┐  └─────────────────────────┘
  │ National     │           ⇕
  │ Level        │  ┌─────────────────────────┐
  └──────────────┘  │      NRRD Ministries     │
                    └─────────────────────────┘
                               ⇕
                    ┌─────────────────────────┐
  ┌──────────────┐  │ Ministry of Health       │
  │ Sub-national │  │ Environment              │
  │ Level        │  └─────────────────────────┘
  └──────────────┘           ↓
                    ┌─────────────────────────┐
                    │ Ministry of Agriculture  │
                    │       and Forestry       │
                    └─────────────────────────┘
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| Forestry | Agriculture | Food Security | Fisheries | Livestock |

e. Fi... rsen... y the ... Republic of South Sudan

The CBD Focal point through the MEF will keep on pushing the Council of Ministers to approve the NBSAP including endorsement of the institutional arrangements contained in it as well as its financing. In addition, the MEF will lobby the Legislative Assembly to pass the pending policies and laws as well as provide resources for updating them for alignment with the NBSAP.

f. Support Mechanisms for Implementing the 2020 Aichi Biodiversity Targets

As indicated in the above section (measures to implement the convention), the NBSAP once approved will be the major instrument of implementing the CBD in South Sudan. Some of the key challenges in biodiversity management include lack of a clear policy and legislative framework

across all the respective sectors. Other challenges include weak or lack of coordination among the various actors and therefore synergy in planning, implementation and monitoring. Budgetary allocations and the human resource capacity has also been grossly inadequate.

The following is therefore the required support for effective implementation of the ABTs:

- Strengthened coordination mechanisms as proposed in the NBSAP at the national and state level. The linkages between the two tiers of government are weak and/or confused.
- Management of biodiversity and the supporting ecosystem services has not been well integrated into development policies and programmers, and where this has been done actions have not been implemented. The draft NBSAP proposes integration of biodiversity values into the national economic development plans and budget framework papers, as well as in state development plans. Government must support this fully. However, studies on the values and benefits of biodiversity must be undertaken progressively over time to provide more realistic values.
- Budgetary allocations to the respective ministries with key responsibilities in the NRM sectors are very low and only used for addressing recurrent expenditures (mainly salaries). Other resources required such as vehicles, equipment including radios for communication in the forest and wildlife sectors are lacking or grossly inadequate. Infrastructure and access roads to facilitate management in PAs and forests (including plantation forests) will also be needed. The GRSS therefore needs to increase funding for the NRRD sectors. Donors and non-state actors will also need to complement the efforts of the government in the implementation of programmers.
- Institutional strengthening (in terms of infrastructure for management and effective policing and capacity building for the different cadres of staff in each of the sectors. Of importance is the need to impart skills not only in management but also in the areas of scientific research, biodiversity resource surveys/assessments, mapping, monitoring and documentation.
- Indigenous knowledge needs to be documented among all the communities in the country. This exercise will help understand how such has been used for the sustainable management of their resources as well as the values/ benefits that accrue to the local people; this information is critical for achieving ABT 18.
- Conflict (political and inter-ethnic) have been the greatest threat to sustainable development in South Sudan. Conflict not only affects achievement of the ABTs, but also the sustainable development goals (SDGs. Achievement of sustainable peace and tranquility all over the country is therefore an absolute necessity for making progress towards the achievement of the ABTs.

g. Mechanisms for monitoring and reviewing implementation

Target 3 in the Draft NBSAP proposes the development of an integrated national biodiversity monitoring, assessment and reporting system. The MEF has initiated development of a national biodiversity data base for Development (NBDS) through funding from the Biodiversity Information for Development (BID-GBIF funds running from 2017-2019 at a cost of 40,000 Euros). The NBDS aims to contribute to the development, maintenance and update of biodiversity data and information for different users to aid reporting and decision making. In addition, it will support the Environmental Information Management system (EIMS) and the Biodiversity, Biosafety and Access

and Benefit sharing (ABS) Clearing House Mechanisms (CHMs), the IGAD Regional Biodiversity Database System and GBIF.org, thus increasing the biodiversity visibility and knowledge nationally, regionally and globally.

Achievements to date include: appointment of a steering committee and data management team, development of a biodiversity data mobilization plan; holding an awareness workshop on the need to mobilize data (currently data is held by various actors drawn from institutions such as the National Museums of Kenya (NMK), academia & individual researchers). This workshop was held on the 17/18th May 2018 in Nairobi. Other achievements include capacity gap/need assessment and training in BRAHMS data capture and digitization techniques, identification and procurement of ICT equipment (software, hardware) and sharing of Biodiversity Data through data sharing protocols[100]. Data and information are readily available in different formats.[101] ***The data available in this data base is insufficient for the monitoring and management of biodiversity, as such there is need to continue building on this initiative, which requires additional funding.***

National Contacts
• CBD – Paul Lade Demetri,
Deputy Director, Wetlands & Biodiversity
Ministry of Environment & Forestry – Government of the Republic of South Sudan
Juba

- **Convention to Combat Drought and Desertification**
- **Convention on Wetlands of International Importance especially as waterfowl habitats**
- **Cartagena Protocol on Biosafety**
- **Nagoya Protocol on Access and Benefit-sharing**
- **Other relevant focal points, e.g. resource mobilization, Programme of Work on Protected Areas**

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[100] https://www.gbif.org/project/J1REqx8zAIU2I2SYsSAei/development-of-national-biodiversity-database-system-nbds#about
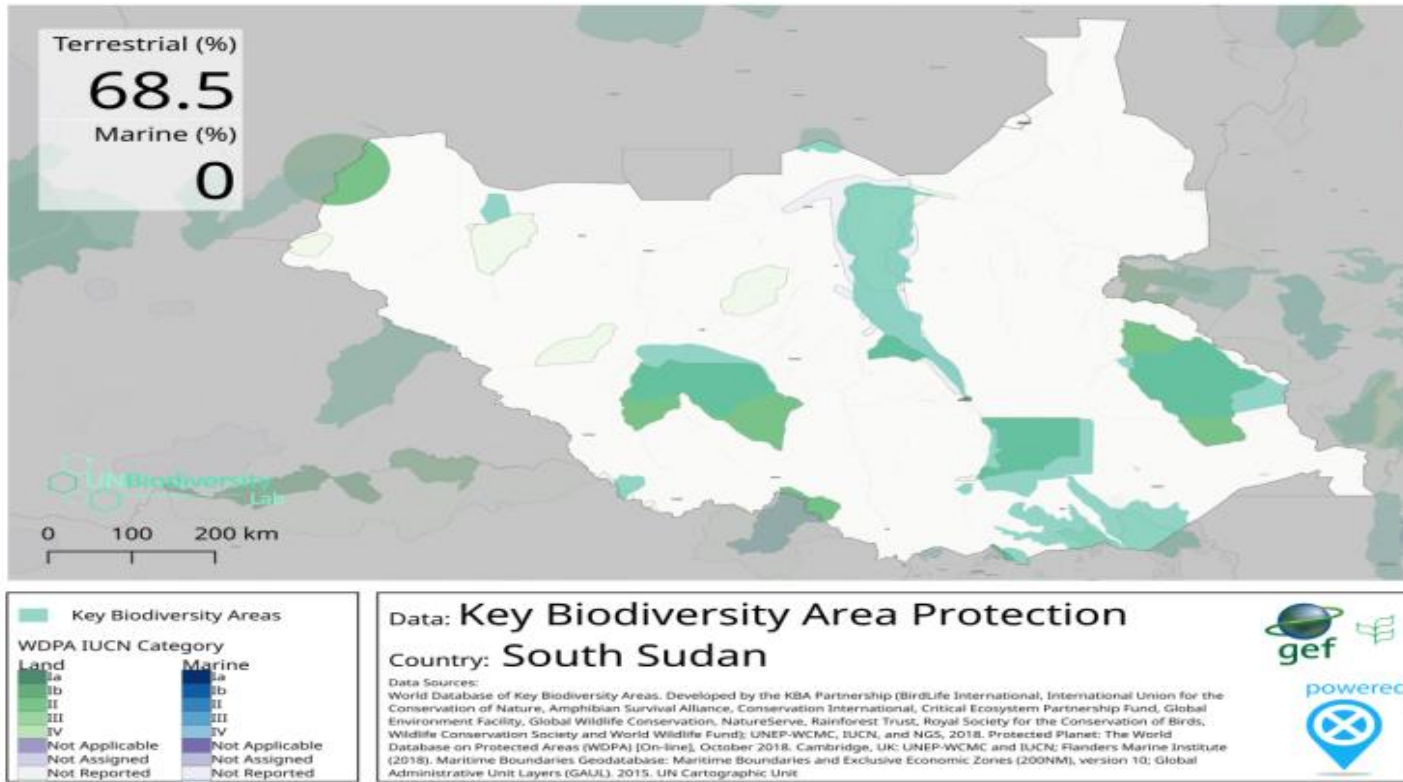[100] 3._BID-GBIF_Side_Event-SBSTTA_21-Montreal_Canad…_Sudan-Final.ppt
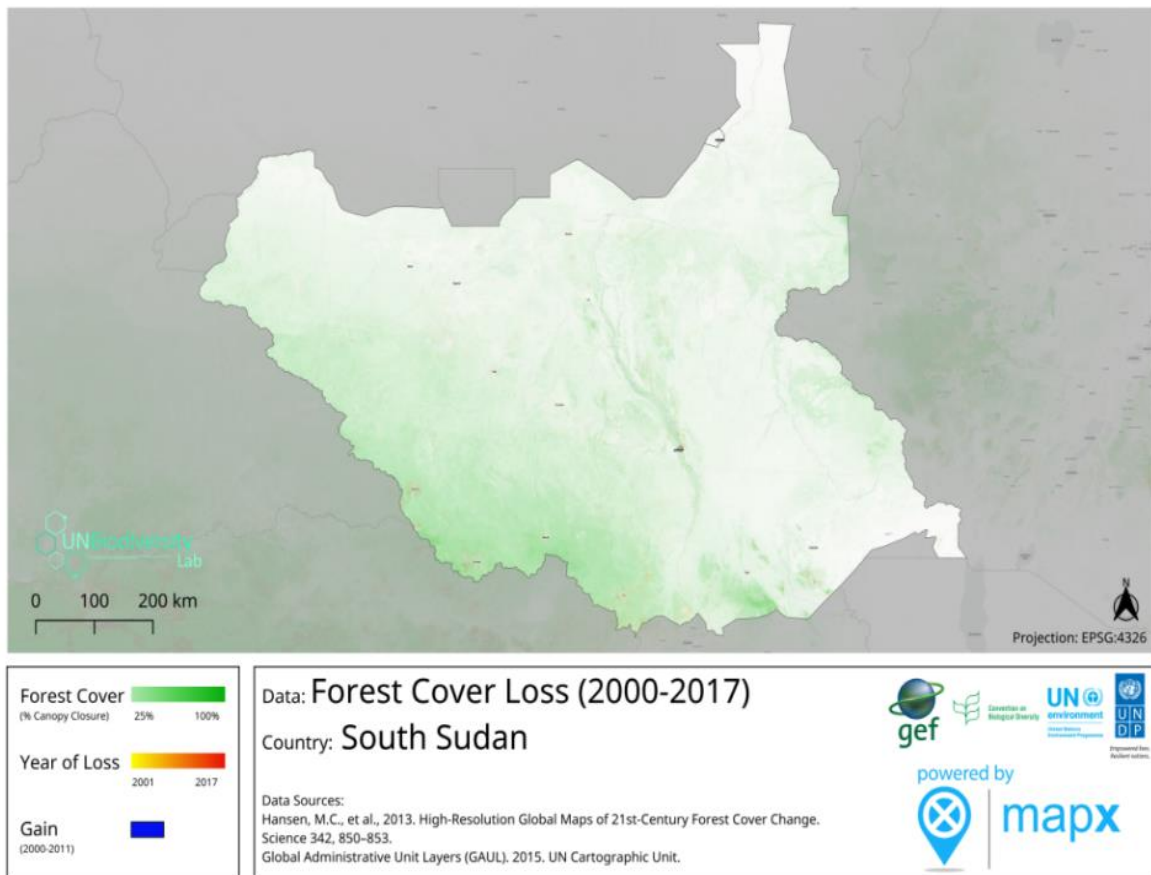
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Map 1: Key Biodiversity Area Protection

MAP 2: TREND SERIES ON FOREST/WOODLAND COVER SHOWING CURRENT STATUS

Data: **Forest Cover Loss (2000-2017)**
Country: **South Sudan**

Data Sources:
Hansen, M.C., et al., 2013. High-Resolution Global Maps of 21st-Century Forest Cover Change.
Science 342, 850–853.
Global Administrative Unit Layers (GAUL). 2015. UN Cartographic Unit.

PROETCETD AREA COVERAGE OF KEY BIODIVERSITY AREAS

This indicator is calculated from data derived from a spatial overlap between digital polygons for protected areas from the World Database on Protected Areas (UNEP-WCMC & IUCN 2017) and digital polygons for terrestrial and freshwater Key Biodiversity Areas (from the World Database of Key Biodiversity Areas, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and other Key Biodiversity Areas; available through the Integrated Biodiversity Assessment Tool). The value of the indicator at a given point in time, based on data on the year of protected area establishment recorded in the World Database on Protected Areas, is computed as the mean percentage of each Key Biodiversity Area currently recognised that it covered by protected areas.</p>

The Protected Area Representativeness Index estimates the extent to which terrestrial biodiversity is included in protected areas. It integrates information from a global protected areas database with modeled fine-scaled spatial variation in biodiversity composition.
https://dashboard.natureserve.org/bip_metadata/protected-area-representativeness-index

https://bipdashboard.natureserve.org/bip/map.html?ind=PARepresentativeIndex&iso=SSD
(provides indexes.)

https://www.cbd.int/doc/world/ss/ss-nr-05-en.pdf
 -fifth national report

https://reliefweb.int/report/south-sudan/seedling-shade-planting-trees-south-sudan-s-displacement-sites
 Majority of refugees use fuel in-efficient open three-stone fire for cooking. The adoption of energy-saving stoves interventions over the years has been relatively low. Better understanding on context-specific causes of the low adoption and utilisation of already distributed stoves needs to be established. This is to guide the introduction of locally appropriate fuel efficient stoves. Refugees in South Sudan are at risk of protection violations by virtue of their refugee status, especially girls and women. As with all other aspects of refugee life in South Sudan, this is heightened by the prevailing context of insecurity in and around the areas where refugees live. SGBV results from deeply rooted, pervasive and harmful gender inequalities both at country of origin and in South Sudan.

https://reliefweb.int/report/south-sudan/unhcr-wfp-and-partners-joint-assessment-mission-report-refugee-operation-south

Access to energy in Upper Nile (Kaya and Yusuf Batil UNHCR and RI have established a community managed nursery site to raise 30,406 tree seedlings (this is in Bentiu County). IOM has produced 1000 seedlings through USAID OFDA support and the European Union ECHO. 300 of them have been distributed to the community. This comprise of fruit trees (mango, guava, lemon, paw paw, neem among others. These are distributed to schools, clinics and communition centres

Sustainable use of natural resources (ABT 4 & SDG 8+12)

Ecological footprint

In 2014, this was 18,368134.7 ha.

Years of data collected too few to calculate annual change rate???

https://www.niras.com/development-consulting/projects/water-for-eastern-equatoria-prowasssn-ees/

W4EE

https://www.niras.com/media/10300166/w4ee_sustainability_final-compressed.pdf

https://www.suddinstitute.org/assets/Publications/572b7eb35a7a9_AssessmentOfPolicy
AndInstitutionalResponsesToClimate_Full.pdf. Assessment of Policy and Institutional Responses to
Climate Change and Environmental Disaster Risks in South Sudan
Nhial Tiitmamer
The Sudd Institute1
March 2015.

https://postconflict.unep.ch/publications/UNEP_FAO_South_Sudan_WH_NRM_guidelines.pdf

 https://admin.concern.net/sites/default/files/media/migrated/knowledge_matters_-
_improving_resilience_in_south_sudan.pdf. KNOWLEDGE MATTERS Issue 21 | October 2018

Improving Resilience in South Sudan: experiences and learning

Climate forescating- climate forecast model – key plank in disaster risk management

Weather forecasting and early warning information.

Developed a strategic plan for south sudan meteorological department (SSMD) 2018-
20123 was produced.

Charcoal action plan based on data collected through remote sensing , field observations
and stakeholder engagement.