



# GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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## PART I: PROJECT INFORMATION

Project Title:	Strengthened Protected Areas System and Integrated Ecosystem Management in Sudan		
Country:	Sudan	GEF Project ID:	9425
GEF Agency:	UNDP	GEF Agency Project ID:	5741
Other Executing Partner:	HCENR - Higher Council for Environment and Natural Resources	Submission Date:	1 <sup>st</sup> : 04-Mar-16 2 <sup>nd</sup> : 29-Mar-16 3 <sup>rd</sup> : 02-Aug-16 4 <sup>th</sup> : 07-Mar-17
GEF Focal Area(s):	Multi-Focal Area: BD, LD	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	N/A	Agency Fee (\$)	389,587

## A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
BD-1: Programme 1	GEF-TF	1,764,041	10,148,333
BD-1: Programme 2	GEF-TF	350,342	2,335,000
LD-1: Programme 1 *	GEF-TF	993,265	2,368,333
LD-3: Programme 4 *	GEF-TF	993,265	2,368,334
<b>Total Project Cost</b>		<b>4,100,913</b>	<b>17,220,000</b>

\*: funds were shifted from CCM to BD and LD applying the marginal adjustment rule.

## B. INDICATIVE PROJECT DESCRIPTION SUMMARY

**Project Objective:** To strengthen the national protected area (PA) system and promote integrated ecosystem management in adjacent areas so as to reduce threats to biodiversity, mitigate land degradation, sustain ecosystem services, and improves people's livelihoods.

Project Components	Financing Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Enabling environment established at the national level for expanded PA management	TA	<p>1.1 Improved institutional and technical capacity in HCENR/WCGA. Indicators (targets): UNDP Capacity Development Scorecard for HCENR/WCGA (+ 30%); METTs, National Biodiversity Spatial Assessment and Land Use Plan prepared by HCENR/WCGA in good quality.</p> <p>1.2 Sudan's PA estate legally expanded to include the full diversity of its eco-regions and endemic biodiversity. Indicators: % of national habitats well-enough represented in PA system; % of endemic spp. covered by PA system; % of globally threatened spp. covered by PA system; National PA System Strategy consolidated and</p>	<p>1.1 Training on PA System Planning provided to HCENR/ WCGA staff, to undertake METT assessments of all PAs with national partners, and to undertake National Biodiversity Spatial Assessment and Land Use Plan with national and international partners.</p> <p>1.2 A PA management certification programme institutionalised in HCENR/ WCGA to catalyse further capacity development, enabling participants to engage in strategic PA management partnerships (incl. with tourism operators and neighbouring countries).</p> <p>1.3 Design of new legal, policy, institutional &amp; land tenure frameworks prepared allowing sustainable PA co-management based on clearly defined and delineated zones within and around PAs (this will include revisions to and endorsement of the WCGA Wildlife Policy and the Wildlife Act).</p> <p>1.4 National PA System Strategy and PA Expansion Plan developed and adopted, to</p>	GEF-TF	600,000 BD	4,140,000

		<p>comprises the new sites; gazettment decrees adopted.</p> <p>1.3 Financial resources for national PA system improved. Indicator (target): UNDP Finance Scorecard in METT +30%.</p> <p>(Indicators, baselines and targets to be confirmed in PPG)</p>	<p>cover all sites with adequate maps and information: a) compile sites database with inventories of habitats and species, status, threats, area, management objectives, prevailing management, etc.; b) standardised METTs conducted of all PAs in Sudan (where possible given security concerns); c) Land Use Plan and National Biodiversity Spatial Assessment conducted taking into account bio-geographic / ecological coverage of habitats/ecosystems, degrees of threat, species representation and potential climate change impacts; d) feasibility studies conducted for upgrading or expanding existing PAs and establishing new PAs (incl. for upgrading conservation status of one sanctuary into a national park or biosphere reserve); e) PA system and management and expansion priorities defined and reflected in new strategies and plans.</p> <p>1.5 Implementation of the National PA System Expansion Plan initiated through the legal designation of at least 2 new PAs providing increased coverage for critical biodiversity (ecosystems, species)</p> <p>1.6 Strategy for consolidated and effective financing and financial management of Sudan's national system of PAs developed and implemented, based on resource mobilization from government and international sources, and tapping into potential for ecotourism development.</p> <table border="1"> <thead> <tr> <th colspan="2">Overview of PA enhancements</th> </tr> <tr> <th colspan="2">PA System</th> </tr> </thead> <tbody> <tr> <td>Current PA estate (entire estate is indirectly affected by legal and policy changes)</td> <td><b>112,297 km<sup>2</sup></b> (6% of territory)</td> </tr> <tr> <th colspan="2">PAs directly affected by project:</th> </tr> <tr> <td>Existing PAs to be better managed -- 3 terrestrial, 2 MPAs - (under Component 2)</td> <td>21,218 km<sup>2</sup></td> </tr> <tr> <td>2 new PAs established (under Component 1)</td> <td>3,580 km<sup>2</sup></td> </tr> <tr> <td>1 PA upgraded to NP (under Component 1)</td> <td>820 km<sup>2</sup></td> </tr> <tr> <td>Areas adjacent to PAs and their natural resources better managed through SLM (under Component 3)</td> <td>(6,670 km<sup>2</sup>)</td> </tr> <tr> <td><b>Total</b></td> <td><b>32,288 km<sup>2</sup></b></td> </tr> </tbody> </table>	Overview of PA enhancements		PA System		Current PA estate (entire estate is indirectly affected by legal and policy changes)	<b>112,297 km<sup>2</sup></b> (6% of territory)	PAs directly affected by project:		Existing PAs to be better managed -- 3 terrestrial, 2 MPAs - (under Component 2)	21,218 km <sup>2</sup>	2 new PAs established (under Component 1)	3,580 km <sup>2</sup>	1 PA upgraded to NP (under Component 1)	820 km <sup>2</sup>	Areas adjacent to PAs and their natural resources better managed through SLM (under Component 3)	(6,670 km <sup>2</sup> )	<b>Total</b>	<b>32,288 km<sup>2</sup></b>			
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2. Improved management effectiveness at selected terrestrial and marine PAs	TA/ Inv	<p>2.1 Improved conservation of globally important biodiversity through enhanced management effectiveness in 5 existing PAs (3 terrestrial at 18,766.2 km<sup>2</sup>, 2 marine at 2,452 km<sup>2</sup>; 20% of the terrestrial and 30% of the marine PA system). Indicators (targets): METT Scores (+15%); conservation status of endemic / endangered fauna</p>	<p>2.1 Participatory management of PAs will be promoted and incorporated in local development framework involving state governments, and private sector.</p> <p>2.2 Capacity development and organisational support to PA adjacent communities, private land owners, tourism operators, etc., to enable effective participation in the planning and management of the PA and its management zones (this is directly linked to SLM / INRM</p>	GEF-TF	1,413,699 BD	7,813,333																		

		<p>and flora such as Red-fronted Gazelle (improved); poaching of sea-turtles and seabirds, over-harvesting of marine resources and mangroves (halted in 2 MPAs); land transformation/ degradation in PA per in ground-truthed remote sensing (reduced by 50%); cases of illegal land occupation inside PAs (reduced by 80%).</p> <p>2.2 Relevant community representatives, private land owners and private business operators (e.g. ecotourism) implement PA/ MPA friendly practices and plans under the Nation-Wide Conservation Strategy. Indicators (targets): % of stakeholders per stakeholder group.</p> <p>(All indicators, baselines and targets, as well as suitable indicator species to be confirmed / determined during PPG)</p>	<p>training, see 3.1), and to build awareness about biodiversity and the importance of biodiversity-friendly land use.</p> <p>2.3 PA management tools developed and implemented in the 5 targeted PAs: a) at least these 5 METTs completed (see 1.4); b) sustainable use thresholds established for key resources (wood, NTFP including Gum Arabic) inside the PA and its management zones; c) PA management, zoning plans and business plans developed involving key stakeholders; d) cooperative agreements with local communities and NGOs developed; e) PA management plans and community cooperative agreements implemented in all 5 PAs; f) business plans implemented in at least 2 PAs (1 terrestrial, 1 marine), including testing of biodiversity-friendly revenue generating mechanisms that also benefit local stakeholders; g) training of PA staff; h) long-term ecological monitoring system in place for targeted species and ecosystems, establishing thresholds for resource use and informing PA management planning.</p> <p>2.4 Support for alternative livelihoods: artisanal fisheries, small-scale aquaculture, eco-tourism, bee-keeping, handicrafts, sea-shell collection, planting cash-generating trees such as doum palm, date palm, agaves, moringa, etc.).</p>			
3. SLM and Integrated Natural Resource Management in multi-use landscapes around targeted Pas	TA, Inv	<p>3.1 SLM and INRM conserve and restore natural resources and ecosystem functions in c. 6,670 km<sup>2</sup> of range and wood lands in the periphery of the targeted 5 PAs. Indicators (targets): conversion or degradation of woodlands/ mangroves (reduced by 30%); occurrence of fires (reduced by 30%); ground vegetation density (+10% overall, + 50% in 30,000 ha of reseeded areas, +200% in 500 ha of protected plots); ha of replanted woodlands/ mangroves with &gt;50% survival (target 400 ha Acacia, 200 ha mangroves).</p> <p>3.2 Exploitative pressures on targeted PAs and migratory wildlife more widely reduced. Indicators (targets): illegal grazing incursions into PAs (reduced by 50%); wood/ mangrove cutting in PAs (reduced by 30%); fires inside PAs (reduced by 30%); wildlife sightings outside PAs (+20%).</p> <p>3.3 Improved and more sustainable livelihoods. Indicators (targets): degree of extreme poverty and food insecurity (reduced by 30%); average household incomes increased by 20% from baseline.</p>	<p>3.1 Build national capacity on M&amp;E for measuring land degradation and SLM &amp; INRM interventions, to support national efforts towards the LDN target.</p> <p>3.2 Pasture and woodland/mangrove restoration nurseries established in several locations.</p> <p>3.3 Degraded pastures restored through a combination of government-driven and community-based SLM and INRM interventions: a) training and extension services provided to targeted communities on community organising, best-practice SLM and INRM and the monitoring of LD and related restoration efforts; b) establish 10 community range reserves @ 50 ha each; c) reintroduce rotational grazing; d) bale feedstock from water deficient rangelands and crop residues from cultivated fields (estimated to 200 tons dry matter basis/yr); e) fire avoidance training and fire line construction (100 km linear km/year); f) collection of native rangeland plant species and reseeded over 5,000 ha/yr in conjunction with water harvesting; g) collection and broadcasting of forestry seeds (especially <i>Acacia tortilis</i>; at least in Tokar, Sinkat and El Dugonab sites) and planting of 50,000 trees over 100 ha/yr in degraded areas; rehabilitation of 50 ha/yr of mangrove.</p>	GEF-TF	1,891,933 LD	4,536,667
Subtotal					3,905,631	16,490,000

Project Management Cost (PMC) <sup>1</sup>	GEF-TF	195,281	730,000
		BD 100,684 LD 94,597	
<b>Total Project Cost</b>		<b>4,100,913</b>	<b>17,220,000</b>

### C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	Higher Council for Environment and Natural Resources	Grants	1,000,000
Recipient Government	Wildlife Conservation General Administration	In-kind	4,900,000
Recipient Government	Wildlife Conservation General Administration	Grants	5,600,000
Recipient Government	Ministry of Livestock, Fisheries and Rangelands	Grants	3,720,000
Recipient Government	Agricultural Research Corporation	In kind	500,000
Recipient Government	Red Sea State Government	Grants	1,000,000
GEF Agency	UNDP	Grants	500,000
<b>Total Co-financing</b>			<b>17,220,000</b>

### D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY AND THE PROGRAMMING OF FUNDS <sup>a)</sup>

GEF - Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) <sup>b)</sup>	Total (c)=a+b
UNDP	GEFTF	Sudan	Biodiversity *	N/A	2,114,383	200,867	2,315,250
UNDP	GEFTF	Sudan	Land Degradation *	N/A	1,986,530	188,720	2,175,250
<b>Total GEF Resources</b>					<b>4,100,913</b>	<b>389,587</b>	<b>4,490,500</b>

\*: funds were shifted from CCM to BD and LD applying the marginal adjustment rule.

### E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested? Yes  No  If no, skip item E.

### PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$100,000					PPG Agency Fee: 9,500		
GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNDP	GEFTF	Sudan	Biodiversity		50,000	4,750	54,750
UNDP	GEFTF	Sudan	Land Degradation		50,000	4,750	54,750
<b>Total PPG Amount</b>					<b>100,000</b>	<b>9,500</b>	<b>109,500</b>

### F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	2,479,820 hectares <sup>2</sup>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	667,000 hectares

<sup>1</sup> Including Direct Project Costs if the Government of Sudan requests direct project services from UNDP in support to NIM execution, tbd during PPG.

<sup>2</sup> 5 existing PAs (3 terrestrial, 2 MPAs) to be better managed: 2,121,820 ha; 2 new PAs to be designated: 358,000 ha.

## **PART II: PROJECT JUSTIFICATION**

### **1. Project Description.**

Global environmental problems, root causes and barriers that need to be addressed:

1. With a territorial spread of 1.8 million km<sup>2</sup>, Sudan's landscape consists primarily of gently sloping plains, with the exception of Jebel Marra in the west, Nuba Mountains in the south, and Massif Red Sea Hills in the east. Desert and semi-desert ecosystems dominate the northern part of the country, transitioning to semi-desert to savanna in the central parts. Mean annual temperatures vary between 26° C and 32° C across the country. In general, rainfall is erratic and varies significantly from the northern to the southern reaches of the country. The country can be ecologically divided into five vegetation zones according to rainfall patterns from north to south as follows: desert (0-75 millimeters of precipitation), semi-desert (75-300 mm), low rainfall savannah (800-1500 mm), high rainfall savannah (800-1500 mm), and mountain vegetation (300-1000 mm). The Land Cover Atlas of Sudan (FAO, 2012) indicates that forests together with rangeland represent 35.6% of the total area of the country.

2. Sudan's rich biodiversity is subject to a number of threats including natural and human factors namely, civil war, lack of a national land use plan, expansion of agriculture into forests, rangeland and wildlife areas, uncontrolled fires in natural rangelands and forests, overgrazing, imprudent use of natural resources, poaching, and the adverse impacts of the petroleum industry, artisanal mining and the sugar industry on natural habitats. Flash floods cause devastation to crops, vegetable, fruit trees and banana plantations. Different social and political factors lead to changes in human activities, including those related directly or indirectly to biodiversity such as the land tenure system and consequent land fragmentation that forces farmers to shift to high yielding varieties with low cost of inputs and high revenue. Modern agriculture is especially threatening plant agro-biodiversity through mono-cropping and use of improved cultivars. Population migration from rural areas to cities and big towns, due to lack of security and environmental causes such as drought and desertification, has negatively affected agro-biodiversity that has historically been used and conserved by the people. Pressures on habitat are increasing with more areas being opened to development and investors. Investment budgets for conservation and sustainable use of biodiversity are not sufficiently prioritized or allocated. The outlook has always been that natural resources are infinite. The value put on soils, water and natural vegetation cover, for example, was zero in the calculation of costs and benefits of new projects.

3. Biodiversity in and around PAs is facing numerous threats caused by unclear wildlife policy, and limited awareness and poor enforcement. PAs are affected by increasing trespassing by nomads and their livestock, poaching, and illegal extractive activities. PAs are underfinanced and have limited resources for management. Trespassing by livestock is not only competing with wildlife for resources, but could also be a cause of introducing epidemics (such as rinderpest and anthrax), introducing invasive alien range plants, and causing wildfires. Changes in land use patterns in areas surrounding PAs has resulted in fragmentation of wildlife habitats reducing chances of wildlife survival and genetic diversity. Power lines, dumping sites and used polluted water in petroleum production areas are killing large numbers of migratory birds (including soaring birds) by direct collision, electrocution and poisoning respectively.

4. Biodiversity of inland waters is facing several threats such as limited scientific attention addressed to aquatic macrophytes and their conservation, and over-exploitation of fish communities through excessive uncontrolled fishing and illegal fishing methods. Inland waters are also subject to alien species such as *Eichornia crassipes* which outnumbered and almost excluded the native Nile cabbage *Pistia stratiotes* in the upper stretches of the White Nile. The construction of dams has induced changes in water regimes that could lead to proliferation of certain species at the expense of others causing dwindling or extinction.<sup>3</sup>

5. Marine ecosystems face numerous threats such as the adverse impacts of coastal development, tourism pressures, and fishers seeking higher-level predators such as groupers and sharks and disrespecting territorial boundaries (PERSGA, 2006). Marine protected areas have limited technical and management capacity. There is over-fishing for sea cucumbers, and the molluscs *Trochus* spp., *Strombus* spp., *Lamis* spp. and *Murex* spp. Declines in the dugong population is due to the use of fixed nets in seagrass areas and on migration routes. There are violations of fishing limits in some areas and some groups and unsustainable targeting of important breeding aggregations of some fish, in addition to impacts associated with tourism such as anchor damage. Other threats include coral bleaching (due to temperature rise), diseases, sediments, boring sponges, and corallivorous snails *Drupella* spp.

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<sup>3</sup> Same as above

6. Protected area system and its weaknesses: Since 1936, 27 PAs have been established in Sudan. 86% of these areas are in South Sudan, and when South Sudan gained sovereignty in 2012, Sudan was left with 4 national parks, 2 game reserves, and 3 game sanctuaries. 3 more national parks were established in Sudan (one of them is still not officially recognized by the state of Gedarif). The existing network is spread in 7 states with 10 other states having no PAs. The current network of PAs covers desert, semi-desert, savanna, marine and coastal, arid region mountains, and riverine ecosystems. For more details see Annex A. The terrestrial PAs amount to c. 6% of the area of the country (less than the Aichi Targets), while marine parks coverage is above the 10% Aichi Target.

7. PAs in Sudan are not yet aligned with IUCN categories. A Wildlife Act is being drafted (to be submitted for endorsement by the National Assembly) and includes a shift to IUCN categories. The current Act specifies three categories of PAs namely: national parks, game reserves, and game sanctuaries. National parks are strict conservation areas with no human settlements or activities. Since 1979, some national parks have adopted the biosphere reserve concept and established zonation for management purposes (Dinder, Radom, Jebel El Dair). Management plans were developed for Dinder, Jebel El Dair, Sanganeb and Dungunab. Game reserves are open to human settlements, cultivation and grazing and have limited law enforcement. Game reserves were gazetted to protect wildlife species that are found there. Game sanctuaries are established for specific species (e.g., Erkawit and Sinkat for the protection of Nubian Ibex and the Khartoum Bird Sanctuary for water fowl).

8. However, the conservation status in all of these areas is unsatisfactory. Only three PAs have management plans (Dinder, Sanganeb, and Jabel Hassania) and due to lack of qualified personnel and resources the management plans are not effectively implemented. The Wildlife Conservation General Administration (WCGA) has limited manpower and skills and is, therefore, unable to provide effective presence in all PAs. Wildlife habitats, populations and varieties are generally declining<sup>4</sup>. Furthermore, land use practices in the wider landscape surrounding the PAs are putting further pressure on the PAs and their biodiversity.

9. Land degradation: The Sudan lies in the dry region with more than 60% of its area as desert and semi desert. The majority of people live in rural areas (70%) deriving their livelihood from agriculture, livestock and forestry. The current status of natural resources in Sudan is one of continuous land degradation resulting from clearance of natural vegetation due to a combination of drought, overgrazing and traditional bush fires. Natural forests and rangeland resources are declining at a high annual rate. The long-term effects of soil degradation and desertification are manifest in declines of crop and rangeland productivity. The direct dependence of Sudanese communities on natural resources for survival has contributed to competition and conflict over scarce natural resources. Indeed, most of the past conflicts have been resource-based in nature, often between pastoralists and farmers. The prospect of climate change increases the urgency to find creative ways of bringing communities together in a spirit of adaptation, to share finite resources and encourage a collective responsibility towards sustainable resource management in a way that will encourage investment in supportive civil processes. The land tenure system prevailing involves a mixture of customary, largely communal tenure, which is complicated and fails to provide adequate tenure over both land and resources and hence hinders sustainable management. The high rates of both human and livestock populations are exerting increasing pressure on land. State and national land use planning is essential for sustainable socio-economic development. At present there is no comprehensive national land use policy and in its absence, inappropriate land use activities have led to serious environmental degradation.

10. The natural vegetation of coastal habitats along the Red Sea Coast of the Sudan is subjected to overuse by grazing animals (camels). The recent degradation of rangelands resulted in increased exploitation of salt-tolerant fodder species including the mangrove trees. Conservation of natural halophytes is important in many ways, the most evident of being the stabilization of the topsoil and prevention of soil erosion. Intervention by man into mangrove forests has caused local destruction. The magnitude of damage to former vigorous stands is variable<sup>5</sup>.

11. Rangeland degradation loss is occurring at an alarming rate when compared with the baseline survey undertaken by Harrison and Jackson in 1958<sup>6</sup>. Thirteen valuable herbaceous plants have been reported as decreasing in semi-desert and low rainfall savanna<sup>7</sup>. Rangelands are increasingly being invaded by unpalatable species (5 grasses and 16 herbs have thus far been reported). The main causes of range deterioration are seasonal wildfire outbreaks that destroy 10-30% of annual productivity of rangelands, grazing selectivity and overgrazing that threaten desirable species such as *Chrosophora brochidiana*, and the growing size of livestock that has resulted in overgrazing in many parts of the semi-desert and

<sup>4</sup> Marine biodiversity is relatively less seriously affected, but threats from vast development projects in the coastal zone loom.

<sup>5</sup> IUCN 2001: Sudan country study on biodiversity. IUCN and HCENR

<sup>6</sup> Harrison, M.N and J.K.Jackson.1958. Ecological classification of the vegetation of the Sudan. Agric. Publ. Comm. Ministry of Agriculture, Forest. Dept. Forest Bulletin No 2. Khartoum, Sudan, PP 46

<sup>7</sup> HCENR, 2015, National Biodiversity Strategy and Action Plan 2015-2020. HCENR-GEF-UNDP publication 133 pages, HCENR-Khartoum-Sudan

savannah due to over-stocking, distribution of water sources and available range productivity and blockage of livestock routes. Estimated livestock numbers (camels, goats, sheep and cattle) exceed 100 million<sup>8</sup> and there is a serious disparity in available fodder resources, in turn leading to the degradation of range resources. Generally there is a deficit in range resources needed by livestock compared to real productivity. The deficit for 2014 was about 56 million tons of dry matter, while the deficit for 2015 because of (low rainfall) is 96 million tons of dry matter. Part of the deficit is met by using agriculture residue and in general it is reflected in low productivity of livestock and in drought years may result in serious losses.

12. **Forest degradation:** The Forest National Corporation estimates that, after secession of South Sudan, forest cover constituted about 11.6% of the territory. Prior to the cessation of South Sudan, total forest cover was around 30%, with South Sudan providing most of the country's forest products. Annual deforestation remains high at 2.4%, which indicates that, if the current rate of deforestation continues, the forest cover could be lost in less than a decade. No large scale afforestation or reforestation efforts are being implemented. Forests are threatened by several factors: the dependence on forestry products for energy (biomass energy constitutes more than 70% of the energy used in Sudan) and building materials; encroachment of rain-fed and irrigated agriculture; wildfires; and browsing wherein nomads fell trees to make them accessible for their animals. Mangrove forests in particular are affected by camel browsing, felling and limb cutting. In addition, mangroves at certain sites are affected by hydrological changes (channels and salt production ponds). For riverine forests, the dieback of Sunut *Acacia nilotica* is the most serious concern. The increase in forest-dependent populations pre-empts sustainable forest management and poses obstacles to the implementation of forest policies. Decision makers and the general public underestimate forest values and their role in socio-economic development and environmental protection.<sup>9</sup>

13. **Long-term solution and barriers:** In order for Sudan's PA network to provide effective protection it must bring into the fold under-represented ecosystems by expanding coverage, it must enhance management effectiveness of the existing and new PAs. At the same time, ecosystem functions and productivity must be restored across the wider landscape to improve the outlook for productive ecosystems and the livelihoods that depend on them, and to reduce the pressures on the PA system and its biodiversity. Also land use practices and human community behaviour in the landscape surrounding PAs needs to become more biodiversity-friendly (for instance to allow the passing of migratory animals). The main barriers to realizing this long-term solution are described below.

14. **Barrier 1:** There are persistent weaknesses in the institutional, policy and legislative environment. Although the 2005 constitution considers PAs a national subject, some states remain reluctant to assist in supportive measures. Land use policies do not effectively impede or control encroachment of rain-fed farming into rangeland, wildlife areas and forest areas. Oil and mining concerns dominate government policies and priority activities<sup>10</sup>. Policies on data collection and information flow need to be strengthened to enhance coordination among natural resource agencies. As the country rapidly liberalizes and transforms into an open market economy, there is a need for greater emphasis at the policy level on environmental safeguards such as requiring environmental impact assessments of development projects that affect wildlife and PAs. The Wildlife Act of 1986 requires updates and revisions to introduce IUCN PA categories in the national system of PAs and to further emphasize the protection of endangered species.

15. **Barrier 2:** The existing PA system is not ecologically representative and it does not provide effective protection to several endemic species. With the exception of Dinder National Park, Dungunab and Sanganieb Marine Parks, and Jabel Aldair National Park, there is no recent information on the status of other PAs in Sudan. PAs are mainly representative of the Nile and its tributaries (Dinder National Park), the Red Sea Coast (Erkwit, Sinkat and Tokar), and the desert (Wadi Howar). Key gaps in the system include: the Nile riverine strip, which is an important section of the flyway for birds from Eurasia to Africa; the arid coastal plains and arid mountain ranges; the Jebel Marra Plateau; and the Nuba mountains (addressing the latter two gaps through the project will, however, be challenging owing to the security situation). The limited capacity of the government to invest in PAs is reflected in poor management. There is no PA system-wide standard for assessing and monitoring PA effectiveness, nor is there adequate experience with effectively engaging local communities in the management of marine and terrestrial PAs. Further, there is a need to develop capacities for PA monitoring and business planning.

16. **Barrier 3:** Threats from the wider landscape outside PAs threaten the viability of PAs and their ability to secure biodiversity conservation objectives. Historically, colonial authorities were careful to locate PAs in remote areas, away from population centers to avoid conflicts. Today, due to population increase, increased numbers of livestock, migration

<sup>8</sup> Source: Ministry of Livestock, Fishery and Range (2013) Information Center

<sup>9</sup> Source: HCENR, 2015, National Biodiversity Strategy and Action Plan 2015-2020. HCENR-GEF-UNDP publication 133 pages, HCENR-Khartoum-Sudan

<sup>10</sup> Third National Report on Implementation of the Convention on Biological Diversity, 2006 HCENR

of people from areas affected by civil strife, and drought and desertification, most PAs are surrounded by large numbers of villagers who are looking for more resources for their livelihood activities. Up to the 1970s national parks were strictly conservation area with no tolerance for inclusion of neighboring communities. Any herd of livestock found trespassing was subject to trial and 50% of the animals will be confiscated for the benefit of the park. Such harsh measures did not stop needy pastoralists from trespassing. The park authorities could not control violations and the relationship between the parks and surrounding communities was strained and conflicts resulted in loss of lives on both sides. In 1979 the park authorities accepted the UNESCO biosphere reserve concept marking a departure from the strict conservation approach to one that takes greater account of the wider landscape and allowing sustainable resource use therein. Dinder and Radom National Parks were declared biosphere reserves. The management plan for Dinder was discussed with communities, and the transitional zone was suggested for sustainable development with the primary purpose to reduce pressures on the core and buffer zones of the park. Village Development Committees were established. Several successful pilot initiatives were initiated and in a few years the park authority's relationship with surrounding communities improved and violations were reduced. This model is ready to be transferred to other PAs, with state governments being requested to dedicate additional land and resources as part of the transitional zone. Sudan now has 4 biosphere reserves: Dungunab, Dinder, Radom and Jebel Aldair. To have successful management it is important to set rules for sustainable development, and to have coordinated management of the transitional zone that includes the park authority, the community and state representatives. A similar experience to Dinder has been promoted in Dungunab Marine Park where organized fishermen communities are cooperating and supporting park conservation measures. PAs are not viable as isolated islands and the experience of Dinder and Dungunab Parks of transitional zone management needs to be scaled up. Communities surrounding PAs should benefit from sustainable management of the transitional zone and they can be effective partners in conservation by establishing a social fence around PAs.

17. *Barrier 4:* The above barrier 3 is ultimately caused by the poor management of lands and natural resources outside PAs by local communities, which again are caused by poor land tenure regimes which do not afford guardianship over lands to these (open access communal lands are over-exploited) – and by the very limited awareness and knowledge of sustainable land management options (beyond the traditional means which in a context of severe population growth cannot alone assure sustainability). There is also limited experience linking SLM and PA work under a community based-approach, and the government has not been in a position to provide much assistance to the most vulnerable natural resource-dependent communities.

Baseline scenario and associated baseline projects

18. Under the baseline scenario, there are several projects that are either planned or currently under implementation that are relevant to this project. These projects are briefly listed:

Theme	Baseline project
Strengthening of PAs	Sudia NGO (Sudanese Development Initiative Project), The Sharks and Rays of Sudan project is a conservation and management program involving local communities. The project is a international multi-faceted program has been developed by COSTEAU (France) in partnership with local management authority, the Sudanese wildlife Conservation General Administration (WCGA), SUDIA – Sudanese Development Initiative (Sudan), The University of Windsor (Canada), The Deep Aquarium (United Kingdom) and other local stakeholders.
	The UNESCO National MAB is planning to promote establishment of a Trans boundary Biosphere Reserve including Dinder Biosphere Reserve and Atish Park on the Ethiopian Side of the border. The two areas share 74 km of joint borders, integrated management, and promotion of conservation and community involvement and tourism are targeted.
	The Wildlife Research Center of the Ministry of Livestock, Fisheries and Range (MLFR), has completed surveys of the Red Sea Coast PAs on January, April 2015 and is planning to continue further surveys.
	The UNESCO National MAB (Man and Biosphere) Committee is following up on comments received from the World Natural Heritage Sites referring the nomination of Sanganeb and Dungunab as world heritage sites (WHS). Successful designation as such will provide impetus for improved management and enhance ecotourism potential.
	The Sudanese Environment Conservation Society (SECS) is continuing its biodiversity awareness, lobby and advocacy in support of PAs.
	The Sudanese Wildlife Society is contributing to the Soaring Birds Survey in Sudan.
	UNEP and HCENR have completed national surveys on wetlands. Further work is being planned but details are not yet available.
Improving conservation in	UNESCO National MAB Committee project to plan for Transitional Zone of Dinder National



Theme	Baseline project
the wider landscape outside PAs	Park. The project included holding consultative workshop with participation of key stakeholder and prepared a plan to involve communities, local government, pastoralists and farmers in efforts towards promoting sustainable use in the transitional zone and support conservation of Dinder National Park.
	Range and Pasture General Directorate of the Ministry of Livestock Fisheries and Rangelands is implementing the rehabilitation of range lands as part of Sudan five year economic reform program 2015-2019 which includes: 1) National Range Seed Collection and Broad casting Program; 2) Upgrading value of crop residues; 3) Range land inventory and mapping; 4) Range land protection; and 5) Rehabilitation of range resources in southern states.
	Livestock marketing and enhanced resilience among pastorates and farmers in multi-donors funded projects 8.526 millions USD, and more than 100 millions USD from Islamic Bank, world Bank and Sudan Government. The project will be implemented in 6 states N.Kordofan and S.Kordofan, White Nile Sennar, Gadarif and Kassala. The project period 2016- 2020 Activities include range rehabilitation and improved cattle routes.
	The Sudanese Environment Conservation Society SECS is implementing 100,000 EU project in North and Southern Kordofan to improve democratic processes and environmental governance.
	The Agriculture Research Corporation ARC, the National Plant Generic Resources Center is planning collection of wild relatives of crops and range plants (Government Budget (partial) is approved).
	PERSGA -- Mangrove management project on the Red Sea Coast (still to be formulated).
Enhancing resilience to climate change in the wider landscape	The ongoing NAPA (Climate Risk Finance) being implemented by HCENR and supported by UNDP-NAP process and UNEP aims to enhance community participation, environmental awareness, biodiversity conservation and community based natural resources management. A strong national and state-based technical consultation committees have been established, as well as improved institutional coordination.
	ADAPT is a £10 million Project for four years (2016-2016-19) DFID funded project through UNEP implemented in Darfur. Mainly water harvesting and livelihoods to assist increasing resilience of the most vulnerable farmers and pastoralists to climate change.
	The Sudanese Environment Conservation Society (SECS) is implementing an adaptation project in North Kordofan, funded by the Horn of Africa network and Netherland Divid. The project is based on Sudan NAPA experience including water harvesting, introduction of improved seed and community based natural resources management. 500,000 EU is allocated for the implementation by SECS and other members of the Sudanese chapter of the Horn of Africa network. (Including NGOs, Academics, and private sector).
	UNDP Sudan is implementing Eastern Programme (Red Sea, Gedarif and Kassala) with the aim to improve the livelihood of local communities and sustainable natural resources management. The programme period is for two years and total amount of the fund is 2 M\$ for funded by Japanese Government.
	Implementing Priority Adaptation Measures to Build Resilience of Rain fed Farmers and Pastoralists of Sudan (especially women headed households) to the Adverse Impact of Climate Change (UNDP/ CIDA/ HCENR). Under implementation in northern Kordofan, River Nile, Gedarif and South Darfur, it promotes community based natural resource management. Best practices will be applicable to communities surrounding PAs.
Natural Resources and Land Use Database and Map (NRDB) for Darfur	The Land Commission of the Darfur Regional Authority is preparing the NRDB for Darfur in consultation with GAF-AG (German Geo Service Company) (Darfur States, 5 states)
Ministry of Livestock, Fisheries and Rangelands - Drought Resilient and Sustainable Livelihoods Programme-II 2015- 2020 (DRSLP-II)	Implementation in Sudan of the regional Drought Resilient and Sustainable Livelihoods in the Horn of Africa Programme, with support from IGAD. The project will achieve its goal through: investing in natural resources (water, pasture) management; integrated land management and ecosystem restoration; and protection of agricultural and livestock infrastructures. It overlaps with several of the areas targeted by the proposed GEF-6 project and will be part of the project's cofinance, with all synergies being exploited on technical and management and strategic alignment.
Supporting the small-scale traditional rain-fed producers in Sinnar State (SUSTAIN)	In response to the alarming levels of land degradation threatening smallholder livelihoods and social peace, this \$120 million IFAD-funded project will work towards the achievement of the Sinnar State Strategic Development Plan, allocating 90% of the budget to sustainable development, poverty alleviation, conservation agriculture, covering 100 villages in the Sinnar State.

19. While the above baseline projects are each important in their own way in contributing to biodiversity conservation within and outside PAs, none of them take a strategic look at the national PA system as a whole, and how it can be

strengthened in terms of its ecological representation, its management effectiveness, nor how PAs can be better integrated into the wider landscape. In addition, further cooperation and coordination is required on general awareness about biodiversity and its values and enhancement of community conservation roles.

Proposed alternative scenario, with a brief description of expected outcomes and components of the project

20. In terms of thematic scope, the proposed alternative scenario will include diverse interventions ranging from strengthening PAs to modifications to land use around PAs based on a consultative process, community based natural resource management, rangeland rehabilitation, planting forest trees as shelter belts, rehabilitation of forest sites, and livelihood improvement interventions. In terms of geographical scope, it will have an impact on approximately 7% of the area of the Sudan including targeted PAs as well as the surrounding landscape.

21. The objective of the project is to strengthen the national PA system and promote integrated management in adjacent areas that reduces threats to biodiversity, mitigates land degradation, sustains ecosystem services, and improves people's livelihood. The target is to extend the geographical coverage of terrestrial and marine PAs by project end. This will be achieved through three components that are summarized below.

*Component 1: Enabling environment established at the national level for expanded PA management.*

22. This Component will deliver the following Outcomes:

- 1.1 Improved institutional and technical capacity in HCENR/WCGA.
- 1.2 Sudan's PA estate legally expanded to include the full diversity of its eco-regions and endemic biodiversity.
- 1.3 Financial resources for national PA system improved.

23. To achieve this, the project will focus on improving the policy and legislative foundation and the institutional capacity for a sustainable PA network in the country. The conservation status of all PAs in Sudan is rated as unsatisfactory<sup>11</sup>. The management effectiveness tracking tool (METT) will be adopted as the standard PA assessment tool across the PA network. Capacity development needs will be assessed, and training priorities will be determined accordingly and implemented. Training will be provided to HCENR, WCGA, Wildlife Research Center (WRC) and the Range and Pasture Administration (RPA), in PA system planning, on the conduct of METTs, terrestrial and marine area management, habitat management, population management, public relations, as well as legislation and social and economic aspects of terrestrial and marine PAs. It will also include training on National Biodiversity Spatial Assessment and land use planning. Moreover a PA management certification programme will be institutionalised in HCENR/ WCGA to catalyse further capacity development, enabling participants to engage in strategic PA management partnerships (incl. with tourism operators and neighbouring countries).

24. The project will prepare a new legal, policy, institutional framework for PA management that also integrates the issue of land tenure. Standards for aspects such as management effectiveness and PA monitoring will be clearly articulated, and monitoring and periodic assessment of PAs will be carried out. Sustainable PA co-management based on clearly defined and delineated zones within and around PAs will be allowed, which will entail revisions to and endorsement of the WCGA Wildlife Policy (draft prepared jointly by WCGA and FAO). Also, an improved and updated Wildlife and National Parks Act will be prepared and approved. A PA classification system following the IUCN/ WCPA system will be adopted. The legal framework will govern the relationship between the state authorities and WCGA, which is a federal organ with limited capacity and financial resources. A better understanding of PAs is needed and national awareness campaigns will be launched to promote recognition of PAs and their values. Political commitment in support of PAs will be mobilized by raising the awareness of politicians through visits to PAs, meetings, and involving civil society organizations.

25. In a next step, the project will develop and work towards adoption of a National PA System Strategy and PA Expansion Plan. This exercise will all existing and potential sites with adequate maps and information, for which the project will compile a sites database with inventories of habitats and species, status, threats, area, management objectives, prevailing management, etc. To provide a sound baseline for the national strategy standardised METTs will be conducted

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<sup>11</sup> The unsatisfactory rating is often used in national wildlife literature: several papers in the proceeding of seminars on wildlife conservation and management in the Sudan, Khartoum, 1985 (WCGA-GTZ). The rating refers to: lack of a management plan or one that is not being implemented, limited or no budget, presence or absence of regular patrols, etc. All this affects PA integrity, numbers of violations, etc.

for all PAs in Sudan where the security situations allows. A Land Use Plan and the National Biodiversity Spatial Assessment will be prepared taking into account *inter alia* bio-geographic / ecological coverage of habitats/ecosystems, degrees of threat, species representation, the KBA criteria vulnerability and irreplaceability, and potential climate change impacts. This will be followed by feasibility studies conducted for upgrading or expanding existing PAs and establishing new PAs, as well as to identify immediate site action interventions for highly threatened ecosystems. The PA system expansion will include ecosystems, habitat types and species which are not included in existing PAs – which can be achieved through: upgrading existing game reserves and sanctuaries into national parks for protection of Nubian Ibex, Klipspringers, and semi-desert habitats<sup>12</sup>; and establishing new protected wetlands areas that may include Umm Jarr in the White Nile State or parts of Lake Nubia in the Northern State for conservation of water fowl and crocodiles, and Dorcas Gazelle respectively. In addition to a focus on terrestrial PAs and wetlands, the project will also include Marine Protected Areas (MPAs) along the coast of the Red Sea namely, Sanganeb and Dungunab Marine National Parks (SMNP and DMNP). Neighbouring terrestrial areas to these MPAs will also be included so as to have an impact on land-based pollution sources. It should be noted that the upgraded PA is located in the Red Sea area and links to the coastal plains. The PA system and management and expansion priorities will be defined and reflected in new strategies and plans, and will result in upgrading conservation categories of some PAs. New PAs will be identified to cover ecological zones (or species) not adequately included in existing PAs (e.g. establishing PAs in key wetlands, in arid ecosystems, mountainous habitats of Nubian Ibex and Klipspringer, and marine areas with coral reefs and other marine biodiversity)<sup>13</sup>. The project then will initiate implementation of the National PA System Expansion Plan, and it is expected that at least 2 new PAs will be legally designated during the lifetime of the project, providing increased coverage for critical biodiversity (ecosystems, species). Finally, a strategy for consolidated and effective financing and financial management of Sudan’s national system of PAs will be developed and implemented, based on resource mobilization from government and international sources, and tapping into the potential for ecotourism development. The experience with developing and implementing business plans in the target PAs (under Component 2) will inform this system-wide strategy.

*Component 2: Improved management effectiveness at selected terrestrial and marine PAs.*

26. This Component will deliver the following Outcomes:

- 2.1 Improved conservation of globally important biodiversity through enhanced management effectiveness in 5 existing PAs (3 terrestrial at 18,766.2 km<sup>2</sup>, 2 marine at 2,452 km<sup>2</sup>; 20% of the terrestrial and 30% of the marine PA system).
- 2.2 Relevant community representatives, private land owners and private business operators (e.g. ecotourism) implement PA/ MPA friendly practices and plans under the Nation-Wide Conservation Strategy.

27. This component will focus on improving management effectiveness with an emphasis on a subset of five key marine and wetland PAs and the management of their buffer and transitional zones. Master plans were developed for Sanganeb and Dungunab MPAs under the PERSGA regional framework for the planning and management of a network of MPAs in the Red Sea and Gulf of Aden. The Master Plans, however, are not effectively implemented. While the WCGA is the official body entrusted with MPA management, their experience in marine parks is very limited and they lack the resources required for management. The MPA master plans will, therefore, be updated and implemented. Similarly, several terrestrial PAs have good management plans. In cases where management plans exist, these will be updated and implemented. In cases where management plans do not exist, new plans will be developed. The project will conduct comprehensive assessments of at least all the targeted PAs using the METT, on a periodic basis. The assessments will include communities living in areas surrounding PAs to better understand land use patterns and lay a foundation for conflict resolution.

28. The transitional zone (TZ) of biosphere reserves will be subjected to participatory co-management, which will be promoted and incorporated in local development framework involving communities, natural resources administrations, state authorities, private land owners and the private sector. Cooperative agreements with local communities and NGOs will be developed, and WCGA will be supported in establishing good relationships with these and with technical bodies (such as range and pasture, forestry, Agriculture Research Corporation, and national NGOs) that could help in PA management. Communities and other key stakeholders around the targeted PA sites will receive training and organisational support, to build awareness about biodiversity and the importance of biodiversity-friendly land use and to

<sup>12</sup> Based on current understanding of threats and limitations, this is likely to include the following changes subject to confirmation with stakeholders during the PPG: conservation status of Erkawit sanctuary upgraded to National Park, and new PAs established at Lake Nubian and Suakin archipelago..

<sup>13</sup> Based on current understanding of threats and limitations, this is likely to include the following subject to confirmation with stakeholders during the PPG: conservation status of Erkawit sanctuary, and Suakin archipelago upgraded.

enable effective participation in the planning and management of the PA and its management zones – which is directly linked to the SLM / INRM training described under Component 3. The project will establish sustainable use thresholds for key resources (wood, NTFP including Gum Arabic), after which PA management, zoning plans and business plans can be developed/updated. Boundary demarcation is essential and also strengthened patrolling and law enforcement targeting illegal harvesting, poaching, trespassing of pastoralists and their livestock, encroachment of farming and settlements.

29. The PA business plans will be implemented in at least 2 PAs (1 terrestrial, 1 marine), which will include the testing of biodiversity-friendly revenue generating mechanisms that also benefit local stakeholders. The potential for ecotourism development is great and will require careful planning. The project will also train PA staff and emplace a long-term ecological monitoring system for targeted species and ecosystems, used for establishing thresholds for resource use and informing PA management planning.

30. Lastly, the project will in consultation with communities provide support for alternative livelihoods (most notably within the transition zone), such as on artisanal fisheries or small-scale aquaculture (several sites having good potential), bee-keeping, handcrafts, sea-shell collection, tapping of gum Arabic from the acacia Senegal tree, planting cash-generating trees such as doum palm, date palm, agaves, moringa, etc.). Besides the sustainable use of natural resources, ecotourism potential will be investigated, and the need for associated infrastructure development will be planned in partnership with communities, state authorities, and the private sector.

### *Component 3: SLM and Integrated Natural Resource Management in multi-use landscapes around targeted PAs.*

31. This Component will deliver the following Outcomes:

- 3.1 SLM and INRM conserve and restore natural resources and ecosystem functions in c. 6,670 km<sup>2</sup> of range and wood lands in the periphery of the targeted 5 PAs.
- 3.2 Exploitative pressures on targeted PAs and migratory wildlife more widely reduced.
- 3.3 Improved and more sustainable livelihoods. Indicators (targets): degree of extreme poverty and food insecurity (reduced by 30%); average household incomes increased by 20% from baseline.

32. To achieve this, the project will restore degraded pastures and wood lands in communities adjacent to the 5 targeted PAs, through a combination of government-driven and community-based SLM and INRM interventions (initiating new partnerships between federal government, natural resources agencies, communities, NGOs, and donors). This will entail the provision of training and extension services to targeted communities, on aspects covering community organising, best-practice SLM and INRM and the monitoring of LD and related restoration efforts.

33. After reviewing current land use practices, the project will develop and implement new land use plans for these sites in consultation with local stakeholders and covered by sustainable use management agreements. It will establish 10 community range reserves @ 50 ha each with the beneficiary communities, reintroduce rotational grazing and introducing baling of feedstock from water deficient rangelands and the use of crop residues from cultivated fields (estimated to 200 tons dry matter basis/yr); consider replacing household goat herds with sheep herds to reduce pressure on fragile rangelands and introducing poultry and fish production.

34. To strengthen rangeland and woodland recovery in the targeted sites, the project and the Range and Pasture Department will establish nurseries in several locations. These will be needed to supply seeds / seedlings / saplings for improved pasture, woodland and mangrove restoration. To supply the nurseries for their reforestation as well as rangeland seed enrichment programme, communities will be engaged to collect native rangeland plants and tree species. Over 5,000 ha/yr of rangelands will be reseeded in conjunction with water harvesting. Forestry seeds (especially *Acacia tortilis* will be collected and broadcast in partnership with the National Forestry Corporation (at least in Tokar, Sinkat and El Dunganab sites), 50,000 trees will be planted over altogether 100 ha/yr in specially degraded areas, and 50 ha/yr of mangrove will be rehabilitated. A further line of work will be to reduce the prevalence and impact of uncontrolled wild fires through fire avoidance training and fire line construction (estimated to 100 km linear km/year).

35. To stabilize the numbers and distribution of threatened migrating fauna, three measures are proposed: a) habitat improvement, b) improved patrolling during seasonal migration, c) increased awareness and environmental education among communities.

36. Lastly the project will during its lifetime provide a specifically requested training on M&E for assessing land degradation and for measuring the impact of SLM & INRM interventions, to support national efforts towards the LDN target.

37. *Alignment with GEF-6 Biodiversity and Land Degradation Strategy:* The project is consistent with Objective 1 of the GEF-6 Biodiversity Strategy namely: improve sustainability of protected area systems. In particular it conforms to Program 1 (Improving Financial Sustainability and Effective Management of the National Ecological Infrastructure), and Program 2 (Nature’s Last Stand: Expanding the Reach of the Global Protected Area Estate). In terms of the GEF-6 Land Degradation Strategy, the project is aligned with Objective 3 (Reduce pressures on natural resources by managing competing land uses in broader landscapes), specifically Program 4 (Scaling-up sustainable land management through the Landscape Approach through institutional capacity development and institutional finance for SLM; and reducing pressures between land use systems and improving agricultural land management near protected areas).

38. *Alignment with Aichi Targets:* The project directly contributes to Aichi Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of PAs and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. It will also contribute to Aichi Targets 1,2,9,10: 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; biodiversity values have been integrated into national and local development and poverty reduction strategies; invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated and measures are in place to manage pathways to prevent their introduction and establishment; by 2020 the multiple anthropogenic pressures on coral reef and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and function. Actions are proposed in the Sudan National Biodiversity Strategy and Action Plan 2015-2020 to realize these Aichi targets.

39. *Alignment with UNCCD:* The project contributes to UNCCD objectives of containing land degradation, specifically through Component 3 that focuses on promoting sustainable land and resource management in Buffer Zones. Based on discussions with stakeholders during the PPG, the potential of piloting methodologies that help assess Sudan’s contribution to Land Degradation Neutrality (LDN) will also be explored.

Global environmental benefits and Incremental/ additional cost reasoning

Summary of baseline scenario	Summary of GEF Scenario	Increment
Under current funding priorities, resources for effective management of the national system of PAs are considered inadequate, let alone expand protection to under-represented species and ecosystem sub-types. Further, there is no integration of PAs in the wider landscape. Community engagement in PA management will continue to remain highly limited. Under a business-as-usual scenario, key ecosystems will remain under-represented (e.g., key wetlands, arid ecosystems, mountainous habitats of Nubian ibex and klipspringer, and marine areas with coral reefs and other marine biodiversity); PAs will be encroached on and affected by edge effects, resulting in the loss of valuable global biodiversity; and unsustainable land use in buffer zones will exacerbate soil erosion and compromise watershed protection.	National system of PAs contains representative samples of Sudan’s ecosystems and species. PA management units (of existing and new PAs) are fully capacitated for effective management, including business planning to tap into alternative sources of financing. Compliance of resource users with biodiversity standards is monitored and enforced in and around the new and established PAs. Species and habitat integrity within PAs are protected from negative influences emanating in transitional zones because economic activities are appropriately adjusted. Communities are engaged in PA planning and operations through co-management arrangements. Thresholds set and enforced for use of resources within PAs by local communities.	Biodiversity: Improved bio-geographic coverage of PA system: 2 new PAs established (3,580 km <sup>2</sup> ); 1 PA upgraded to national parks (820 km <sup>2</sup> ); improved management in buffer and transitional zones (6,670 km <sup>2</sup> ) Stability of populations of threatened and indicator species: Improved indicators for selected taxa including endemic plants and endangered marine fauna (to be determined during PPG) Improved management effectiveness of targeted PAs (METT score increase by 15%) Land Degradation: Integrated land-use planning approach under implementation at 6,670 km <sup>2</sup> Revegetation/ improved topsoil and vegetation cover at 500 km <sup>2</sup> of rangelands (NB: all estimates to be confirmed during the PPG)

Innovation, sustainability and potential for scaling up

40. *Innovative aspects:* Following the cessation of South Sudan, the Sudan lost one third of its area which contained the largest portion of biodiversity and natural resources. The impact of cessation on wildlife, forest, and range resources is enormous. Pastoralists who used to spend the dry season in southern Sudan have been forced to move north to already

over grazed rangelands. Pastoralists have been faced with blocked cattle routes<sup>14</sup>, and the encroachment of mechanized farming into rangelands and forest lands. These factors have adversely affected the normal patterns for grazing livestock, forcing large numbers of pastoralists to move to areas surrounding PAs. Several states have intervened by opening and rehabilitating cattle routes but these are ongoing trials and it is too early to evaluate their success. In light of these changes following the cessation of South Sudan, the need to address resource degradation in the buffer zone/ transitional zones of PAs has heightened. To this end, the project is innovative insofar as it will bring a much-needed, systematic and renewed emphasis on buffer zone/ transitional zone management across the national PA system. In Sudan, PAs were established, mostly during colonial times, with no consultation with communities, and this approach needs to be modified; balancing community welfare with conservation goals needs to be given the utmost priority. For PAs to be viable and sustainable, there is need for sustainable resolution to resource use conflicts that do not compromise PA integrity. The project focuses on generating positive impacts on community livelihoods by putting in place practices and low-cost technologies that can be continued after the project. It will implement several crucial measures such as: land use revision in areas surrounding PAs, community based natural resources management, efficient and alternative energy use, water harvesting, capacity building, and revised PAs governance.

41. Sustainability: In order to sustain results, the project will place a strong emphasis on awareness raising and capacity building at all levels. By putting in place the right policies regarding land use around PAs in support of the integrity of PAs, and equitable access and sharing of resources, the project will improve the enabling environment, in turn institutionalizing this approach. By ensuring that conservation of PAs, and the associated biodiversity and ecosystem services, is in the interest of the communities, the project will ensure local support for PAs can be sustained over the long term. In terms of financial sustainability, by tapping in to the revenue generating potential of PAs and surrounding areas (a potential that is immense with ecotourism in the Red Sea MPAs being a case in point) through business plan development and implementation in the target PAs, the project will demonstrate alternative sources of financing for PAs.

42. Potential to scale-up: The project will put in place changes in the enabling environment (improved policies, laws, and capacity of institutions) that support improved effectiveness of PAs, as well as mainstreaming of biodiversity conservation principles in surrounding landscapes. It will also demonstrate this approach in a few target PAs – both terrestrial and marine. Equipped with the enabling environment and practical experience, the government of Sudan (WCGA and other relevant departments) will be better able to replicate this approach to all PAs in the national system in a phased manner.

***2. Stakeholders. Will project design include the participation of relevant stakeholders from civil society and indigenous people? (Yes  /no  ). During the development of this PIF, several meetings were held with stakeholders to consult them on the project framework and their possible contribution to the project (described in the table below).***

Stakeholder	Mandate	Potential role in Project
Ministry of Environment, Natural Resources and Physical Development (MENRPD)	Responsible for strategic development of all aspects of natural resources conservation; GEF focal point and chair of HCENR; currently implementing the Great Green Wall initiative	Accountable for project success to Government of Sudan Participate in project steering committee Responsible for assessing project impact Provide co-finance Approve project document
Higher Council for Environment and Natural Resources (HCENR)	Coordination of environmental and natural resource issues; promotion of mainstreaming of environmental conservation; focal point for MEAs (UNFCCC, NAP, POPs, Ramsar, CBD) and associated coordination of technical issues	Project lead Support coordination with similar projects and implementation of the NBSAP Providing technical guidance to the project Provide opportunities for raising awareness about the project Support the project's capacity building efforts
Ministry of International Cooperation (MIC)	Responsible for coordinating United Nations and all foreign aid projects	Participate in the steering committee of the project Provide co-finance
Ministry of Wildlife and Tourism (MWT)	Technical supervision of WCGA; strategic development of all aspects of tourism in Sudan	Provide technical expertise and advice on all ecotourism-related activities of the project (in Red Sea MPAs and other PAs)
Wildlife	Enforcement of wildlife laws; establishment	Responsible for implementation of all project activities

<sup>14</sup> The routes were blocked by farmers as a result of encroachment of agricultural schemes (legal and illegal).

Stakeholder	Mandate	Potential role in Project
Conservation General Administration (WCGA)	and management of PAs (marine and terrestrial); focal point for CITES and convention on migratory birds	related to PAs Target group for project's capacity building efforts Provides co-finance
Ministry of Livestock, Fisheries and Rangelands (MLFR)	Responsible for strategic development of all aspects of livestock and rangeland sectors; research related to fisheries and animal resources (wildlife research); implements several projects on range management, most notably the partner project DRSLP-II	The Range and Pasture Department of this ministry will be entrusted with the bulk of the SLM/INRM, incl. reforestation and forest fire prevention activities, in the target areas around PAs Provide assistance on the topic of conservation of national breeds of livestock WRC (under MLFR) will assist in surveys, development of management plans, and training of wildlife staff Marine Fisheries Center (under MLFR) will assist in surveys and training of WCGA staff in MPAs
Agricultural Research Corporation (ARC)	Responsible for agricultural research in the country; collection and conservation of plant genetic resources	Collection of seeds of wild relatives of crops, range plants Provide co-finance Support awareness raising and capacity building activities of the project
States of Sinnar, Blue Nile, Gedarif, Nile, Northern, White Nile, Red Sea and North Kordofan	Responsible for stewardship of land and natural resources within the state, and community welfare and organization; while PA are considered Federal land, States are responsible for areas surrounding PAs, as well as for policies and legislation related to tourism in the state	Provide technical support in land use planning, community mobilization and implementation of project activities targeted at communities Facilitate the process of modifying state policies and legislations Support establishment of new PAs
Farmers Union	Concerned with farmers' rights; have established branches in all states	Coordinate awareness campaigns at the state level Participate in land use activities and afforestation
Pastoralists Union	Concerned with pastoralists' rights; lobby for rangelands and resolving associated conflicts; established branches in all states	Participation in range rehabilitation activities of the project Implement awareness raising campaigns among pastoralists Coordinate all project activities that target pastoralists
Sudanese Environmental Conservation Society	Largest environmental group with over 10,000 members and 100 branches; involved in biodiversity awareness campaigns and community mobilization	Contribute to awareness campaigns and community mobilization efforts of the project Support lobbying and advocacy of the project at the national level
Wildlife Research Center of the MLFR	Involved in ecological monitoring -- has completed surveys of the Red Sea Coast PAs and is planning to continue further surveys.	Contribute to ecological monitoring work of the project
Universities and Research Institutions	The Institute of Environmental Studies and the Faculty of Science of the University of Khartoum and other national universities are conducting ecological surveys. The Cousteau Society is conducting ecological monitoring of Dungunab and Sanganeb MP in collaboration with the Red Sea University.	Contribute to ecological monitoring work of the project

**3. Gender Considerations. Are gender considerations taken into account? (Yes  / No ).**

43. Gender disparities in Sudan are substantial. A recent study by the UNDP-NAPA project has highlighted the role of gender differences in natural resource management. The recent conflicts have had a particularly damaging impact on women with there being a large number of women headed households in vulnerable communities. This is also true for internally displaced populations (IDPs) settled around PAs. Pastoralists and communities in the Red Sea State are traditionally very conservative and this will be taken into consideration while establishing activities targeting women through careful planning and using traditional roles and activities for women as entry-points. For example, a good entry point could be supporting women in their traditional role of being responsible for domestic energy, water supply, rearing of small ruminants and associated milk and dairy products. Consistent with GEF's policy on gender mainstreaming and women's empowerment, the project will acknowledge and understand gender differences and roles and will support actions to promote women empowerment and gender equality.

#### 4. Risks

Risk	Rating	Preventive Measures
Weak coordination at federal and state levels	Medium	There have been recent problems between state governments and the federal authority responsible for PAs. Effective engagement of state governments is essential when carrying out activities with communities. Sometimes surveys require security approval from state governments and these approvals can cause delays. To address this, UNDP will ensure better coordination and involvement of state authorities in project design (PPG phase) and implementation.
Outside forces pull the stakeholder group apart, making conflict resolution and community agreement impossible	Medium	The project will put in place a joint committee comprised of community pastoralists, farmers, and wildlife authorities. This mechanism has proven to be a successful one in the past.
Conflict among resource users	Low	This will be addressed through the project's site selection criteria; areas with a serious history of conflicts will not be included.
Climate change and variability could compromise the project's work in target areas if they are vulnerable to drought and/ or floods	Medium	The project will tap in to the experience and lessons from the NAPA and NAP projects and incorporate their findings into project activities.

#### 5. Coordination

44. The project follows the completion of the second NBSAP (2015-2020). Because HCENR is the lead organization for this project as well as several other GEF-financed and other initiatives, coordination will be enhanced. HCENR is the focal point for several MEAs such as UNFCCC, CBD, and POPs. HCENR is also the focal point for PERSGA and RAMSAR and was responsible for the implementation of the Nile Transboundary Environmental Assessment project (NTEAP) and the NCSA project. This puts HCENR in a unique position to coordinate the policy formulation process, develop consultation mechanisms, as well as identify synergies and links with international agencies. Further, HCENR will jointly execute the project with WCGA that is the focal point for CITES, AEWA, and CMS.

45. UNDP, in its capacity as the GEF Implementing Agency, will also be responsible for ensuring coordination. UNDP's program in Sudan for 2013-2016 aims to promote democratic governance, create an enabling environment for long term conflict prevention, and provide a basis for mainstreaming conflict and disaster risk programming through four complementary pillars: poverty reduction; inclusive growth and sustainable livelihood; governance and rule of law, social cohesion, peace consolidation and peace dividends; and environment, energy and climate change. UNDP will ensure close collaboration and synergistic impact with a number of UNDP-led initiatives in the country. The project will be fully integrated in the UNDP country program in particular with environment, energy, climate change, poverty reduction, sustainable livelihood and conflict resolution. UNDP has significant experiences it can bring to this project, most notably the first and second NBSAP development processes, Dinder National Park Development project, and several other projects related to natural resource management governance and conflicts.

#### 6. Consistency with National Priorities. Is the project consistent with the national strategies and plans or reports and assessments under relevant conventions? (Yes / No ). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

46. The project is in line with national priorities specified in the first NBSAP (2000) and the second NBSAP (2015-2020). The project is consistent with commitments to MEAs, including NAPA, NAP and NCSA, which all address the issue of vulnerability to future climate change.

47. Link with NBSAP: Sudan has established national targets in its NBSAP to "address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society, reduce the direct pressures on biodiversity and promote sustainable use, improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity, enhance the benefits to all from biodiversity and ecosystem services and enhance implementation through participatory planning, knowledge management and capacity building." The NBSAP specifically notes the need for the following actions that align well with Components 1 and 2 of this PIF:

- 1. Establish new protected areas, game reserves and sanctuaries to represent all ecological zones and states and adopting international categories of protected areas with special attention to inclusion of the semi-desert, Inland fresh water (khors and wadis), Coastal and marine (salt marshes and mangroves)



- 2. Establish protected areas for the following species and habitats: a) Habitats of Nubian Ibex and Klipspringer, b) One of the non-Nilotic lakes such as Kundi and Abayd, c) In low rain fall zone in Khor Yabous up to the border with South Sudan, South of Talodi (South Kordofan), Upper Jebel Marra, Garsila (Darfur) and Shu'ab Rumi, d) One in the north and one in the south of the Red Sea coast, e) Southern part of Lake Nubia, f) Sudanese stretch of Wadi Alalagi.
- 3. Improve management effectiveness by implementing the existing management plans and formulate management plans for areas without.
- 4. Facilitate more stakeholders' involvement in establishment of protected areas.

48. In addition, Component 3 of this PIF responds to the following stated targets in the NBSAP: “Mainstream wildlife conservation in other sectors and land use plans”; and “protected area integration and mainstreaming assessment”.

49. Link with National Adaptation Programme of Action: As part of its National Adaptation Programme of Action, Sudan has identified priority adaptation actions and this PIF, particularly Component 3, is aligned with several of these priority actions, namely – rangeland rehabilitation and water harvesting in Gedarif State, improving sustainable agricultural practices under increasing heat-stress in the Nile State, and environmental conservation and biodiversity restoration in northern Kordofan State as a coping mechanism for rangeland protection<sup>15</sup>.

50. Link with NCSA: Component 3 of this PIF is also aligned with Sudan’s National Capacity Self-Assessment for global environmental management (HCENR 2008), insofar as it proposes modifications to land use around PAs based on a consultative process, community based natural resource management, rangeland rehabilitation, planting forest trees as shelter belts, rehabilitation of forest sites, and livelihood improvement interventions. All of these aspects have been highlighted in the NCSA which notes that among the capacity building priorities for biodiversity conservation an important one is capacities for land use planning to better control land use and development patterns. The NCSA goes on further to note that land use planning and strengthening of community-based natural resources management and related activities such as establishment and conservation of vegetation cover (including shelterbelts) are a cross-cutting capacity building need required for conservation of biodiversity, combating land degradation and addressing climate change adaptation. The emphasis of the PIF on land use planning and community-based SLM and integrated natural resource management under Component 3, helps Sudan further these priorities set in the NCSA.

51. It also takes into consideration national policies, strategies and comprehensive plans, including the 25 year strategy (2002 – 2027), the five year plan (2012 – 2016), and the 5 year program of economic reform (2015 – 2019), all of which highlight the need to combat the deterioration of resources, upgrade living standards for low income inhabitants, and reduce severe poverty, while building capacities to adapt to climate change. The project objective is also in line with several sectoral policies. The Forestry Policy (2006) supports the conservation and sustainable use of biodiversity, and provides clear guidelines for rehabilitation and raising awareness of communities. The Wildlife Policy (2014) encourages establishment of new protected areas. The Strategic Action Plan for Range and Pasture Plants in Semi-desert and Low Rainfall Savannah aims at strengthening communities’ capacities. The National Investment Plan for the Agricultural Sector (2012) aims to support the natural resources sector in order to ensure its regeneration and sustainability. Similarly, the Poverty Reduction Strategy Paper and Population Policy also mention the importance of conservation and sustainable use of biodiversity.

## **7. Knowledge Management.**

52. The project will build on the NBSAP’s awareness, communication, and outreach strategy to reach communities near PAs, and at the national level to influence people’s knowledge, and attitudes and hence, the actions that they take. Communication and public awareness will be initiated at PA visitor centers, through documentation, films and publications. The project will establish good links with mass media and universities. In addition, the project will follow UNDP’s approach to learning and knowledge sharing as encapsulated in its Monitoring and Evaluation Strategy/ Approach. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus. In terms of being informed by lessons and experience of past projects, the dialogue with

<sup>15</sup> <http://www.adaptation-undp.org/projects/sudan-national-adaptation-programme-action-napa>


ongoing baseline initiatives has already begun in the preparation of this PIF (see baseline section for the list of baseline initiatives with which coordination is already underway).

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):**  
 (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE
Dr EL Khitma El-Awad	GEF-OFP	Ministry of Environment, Natural Resources and Physical Development, Higher Council for Environment and Natural Resources	11/10/2015

**B. GEF Agency Certification**

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation under GEF-6.			
Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person Telephone, Email
Adriana Dinu, UNDP-GEF Executive Coordinator		3/29/2016	Yves de Soye UNDP-GEF Regional Technical Advisor +33 682 75 89 44, yves.desoye@undp.org

**Annex A: Protected Areas of Sudan. For maps showing the location of most of these PAs please refer to *UNEP, 2007 Sudan Post-Conflict Environmental Assessment* and to *Mohammed, Anwar Sidahmend, and Galal, Hashim Munier, 2013: Sudan's Protected Areas Database Technical Report. National Center for Research- Remote Sensing Authority*. (This list may comprise errors and should be revised and consolidated)**

#	Ecol. Zone	Name	PA Type	Area (km2)	Area (ha)	State
1	Desert	Jebel Hassania	NP	5,528	552,800	River Nile
2	Desert	Wadi Howar	NP	69,826	6,982,600	Darfur
3	Savannah	Dinder	NP / MAB / Ramsar / IBA	10,290	1,029,000	Sennar, Blue Nile, Gedarif
4	Savannah	Radom	NP / MAB / IBA	13,971	1,397,100	Darfur
5	Savannah	Taia Basunda El Galabat	NP	567	56,700	Gedarif
6	Marine	Sanganeb	NP / Ramsar	370	37,000	Red Sea
7	Marine	Dungonab	NP / Ramsar / IBA	3,000	300,000	Red Sea
8	Mountain	Jebel Al Dair	NP	330	33,000	North Kordofan
<b>SUBTOTAL</b>				<b>103,882</b>	<b>10,388,200</b>	
<b>% of land area (c. 1.87 million km2)</b>				<b>5.6%</b>	<b>5.6%</b>	
9	Semi-desert	Jebel Bawzer / Sunut Forest	Game Sanctuary	15	1,500	Khartoum
10	Semi-desert	Tokar	Game Reserve	6,300	630,003	Red Sea
11	Semi-desert	Sabaloga	Game Reserve	1,160	116,000	River Nile
12	Semi-desert	Erkawit / Arkwuait	Game Reserve (Nubian Ibex)	820	82,000	Red Sea
13	Semi-desert	Senkat / Sinkat	Game Reserve (Nubian Ibex)	120	12,000	Red Sea
<b>GRAND TOTAL</b>				<b>112,297</b>	<b>11,229,700</b>	
<b>% of land area (c. 1.87 million km2)</b>				<b>6.0%</b>	<b>6.0%</b>	
14	Marine	Port Sudan	NP	1,000	100,000	Red Sea
15	Marine	Suakin Archipelago	NP / Ramsar / IBA	1,500	150,000	Red Sea
16	Marine	Khor Kilab	NP	2	200	Red Sea
17	Marine	Abu Hashish	NP	2	200	Red Sea
18	Marine	Shuab Rumi	NP	4	400	Red Sea
19	Savannah	Rahad	Game Reserve	3,500	350,000	Gedarif
20	Marine	Red Sea Hills	Game Reserve	150	15,000	Red Sea
21		Jebel Gurgei Massif	Game Reserve	100	10,000	Darfur
22	Savannah	Jebel Marra Massif	Nature Conservation Area / IBA	1,500	150,000	Darfur
23	Desert	Lake Nubia	Bird / Wildlife Sanctuary	100	10,000	Northern
24	Savannah	Lake Keilak	Bird / Wildlife Sanctuary	30	3,000	Darfur
25	Semi-desert	Lake Al Abyad (Border)	Bird / Wildlife Sanctuary	5,000	500,000	
26	Semi-desert	Jebel Aulia Dam	Bird / Wildlife Sanctuary	1,000	100,000	Khartoum
27	Semi-desert	Kashm El-Girba Dam	Bird / Wildlife Sanctuary	100	10,000	Kassala
28	Savannah	Sennar Dam	Bird / Wildlife Sanctuary	80	8,000	Sennar
29	Savannah	El Roseireis Dam	Bird / Wildlife Sanctuary	700	70,000	Blue Nile
30	Semi-desert	Khartoum	Bird / Wildlife Sanctuary	1,500	1,500	Khartoum

Source: Sudan POWPA and <http://sd.chm-cbd.net/information-and-links/information-and-links/protected-area-in-sudan>. Area calculations by YdS / UNDP. # 14-30 are added after UNEP 2007, in which area size seems to be estimated and needs to be confirmed/corrected.

## Annex B: Literature Cited

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