



## Republic of South Sudan

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### Intended Nationally Determined Contribution (Draft)

#### Introduction

1. The Republic of South Sudan gained its independence from Sudan on 9 July 2011 after more than 50 years of a protracted war that claimed over 3 million lives and displaced over a million people. The long conflict destroyed the little infrastructure and governance structures that existed prior to the conflict. Thus, South Sudan is the one of the least developed countries in Africa, and as such is highly vulnerable to climate change.
2. South Sudan is vulnerable to climate change and associated socio-economic losses and damages due to the dependence of its population on climate-sensitive natural resources for their livelihoods. Furthermore, there is currently limited institutional and technical capacity, appropriate technologies and financial resources to support the implementation of interventions for adaptation to climate change.
3. The Ministry of Environment has developed an Environment Policy Framework and Environmental Bill that will regulate the exploitation of natural resources and all forms of socio-economic development in the country. The Policy and Bill, when operationalized, will address the drivers of environmental degradation and contribute towards the mitigation of climate change while ushering the country towards a path of environmentally sustainable development.
4. To respond to the negative impacts of climate change, the Ministry of Environment, other line ministries and civil society stakeholders – with the support of UNEP – is currently developing a National Adaptation Program of Actions (NAPA, 2015). This will form the basis for adapting to the new realities of climate change impacts.
5. Within the context of these national circumstances, South Sudan's Intended Nationally Determined Contributions (INDCs) are based on a cross-sectoral consultative process involving multiple stakeholders that was conducted in parallel to the NAPA preparatory work and associated meetings. The INDCs will also contribute towards the attainment of South Sudan Vision 2040 and the South Sudan Development Plan, both of which aim to, amongst other objectives, ensure that economic development is environmentally sustainable.

#### National Circumstances

6. South Sudan, the world's newest nation, is a landlocked country located in north-eastern Africa, with a total area of 619,745 km<sup>2</sup> and a population of approximately 12,340,000 (2015 estimates). South Sudan is highly vulnerable to the impacts of climate change. The country's population is highly dependent on climate-sensitive sectors such as agriculture (that is mainly rain-fed) for their

livelihoods. Moreover, climate change is expected to have impacts on the energy, tourism, water and health sectors. Climate hazards have caused considerable losses across the country's sectors over the years. The most frequently occurring climate hazards include droughts and floods, which cause economic losses to the country. For example, the East African drought of 2011 resulted in famine, loss of life and loss of livelihoods in South Sudan. In addition, flooding in July–August 2014 resulted in deaths, displacement of over 40,000 people, destruction of property and a widespread malaria epidemic. In September 2015, flooding displaced 2,000–3,000 households.

7. South Sudan is vulnerable to the impacts of climate change due to its poor infrastructure and a range of development challenges resulting from over 50 years of conflict. While the export of oil is the main economic sector accounting for over 98% of the GDP, 95% of the population depend on climate-sensitive natural resources, particularly rain-fed, subsistence agriculture and total dependence on forests as a source of energy (fuel wood and charcoal) and other environmental goods and services.
8. Climate change has impacted these socio-economic activities, particularly as unpredictable rain patterns, recurrent droughts, flash flooding and excessive heat have resulted to crop failures causing food insecurity and famine.
9. South Sudan has the among the largest livestock populations in Africa. Climate change threatens the existence of these livestock as well as the livelihoods of pastoralist communities due to the loss of pasture lands and reduced access to water resources. This has further resulted in deadly conflicts among the pastoralist communities that have claimed many lives. The impacts of climate change thus also cause national security issues.
10. There are limited data on GHG emissions available in South Sudan, due to the history of conflict, limited capacity and a lack of financial resources. However, as an under-developed country with limited industrial activities, South Sudan's total GHG emissions are estimated to be relatively low. Emissions are mainly from the land use, land-use change and forestry (LULUCF) and agriculture sectors. This may be explained by the reliance on wood fuel by an estimated 96% of the population (National Baseline Household Survey, 2009) coupled with the increasing demand for agricultural land and urban development. In the energy sector, emissions are mainly from diesel generators. The other significant emissions are from the transport sector, with the waste and industrial processes contributing negligible amounts. South Sudan strives to be a newly-industrialised, middle-income country by 2040. This development trajectory is expected to result in increased emissions from the energy sector. However, South Sudan intends to develop clean energy whenever possible, with deliberate efforts by the Government towards enhancing hydroelectric, geothermal, wind, solar and other clean energy development. Climate change impacts continue to slow down the attainment of its national development goals. South Sudan will continue making investments with both domestic and international resources to adapt to climate change and realise its abatement potentials.

### **Scope of Contributions**

11. The climate vulnerability of South Sudan's abundant, unexploited natural resources makes it pertinent for the country's INDC to comprise both Mitigation and Adaptation components, based on its national circumstances and in alignment with decisions 1/CP 19 and 1/CP20.

## Mitigation

12. As a post-conflict nation and one of the least developed countries, South Sudan is embarking on a sustainable development path and would like to employ the latest clean technologies to realize a low carbon, climate-resilient development outcome.
13. South Sudan commits to undertake a national GHG inventory, as part of its Initial National Communication, in 2016. This will allow a better assessment of potential for mitigation and quantify the emission reductions possible through actions listed here.
14. South Sudan aims to undertake the policies and actions in following sectors: energy generation and use; Land Use and Land use Change; and Transport, to address its future emissions that are likely to result from growth strategies. These efforts are contingent on availability of technical assistance to develop the necessary regulations, policies, and standards as well as financial support for investing in low carbon options.
15. *Energy generation and Energy Use:*
  - i. Increase the use of clean and carbon-neutral energy:
  - ii. Construction of a hydroelectricity plant at the Fulla rapids.
  - iii. Increase the use country's high potential for solar and wind energy to meet energy demand.
  - iv. Increase the efficiency of biomass use (particularly fuel wood and charcoal) in the traditional energy sector.
  - v. Increase efficiency of electricity usage in the formal energy sector and ensuring the best use of hydropower by careful management of the water resources.
16. *Reforestation and Deforestation:*
  - i. With its abundant natural forests, South Sudan aims to declare approximately 20% of its natural forests as reserve forests to protect it from deforestation.
  - ii. It also aims on an ambitious reforestation and afforestation project to plant 20 million trees over a period of ten years (2 million trees in each of its 10 states) as outlined in the National Environmental Policy. This will contribute towards restoring watershed and water catchment areas during the post-2020 period as well as sequestering carbon and reducing emissions from deforestation and forest degradation.
17. *Transport Sector:*
  - i. Establish emissions standards for vehicles
  - ii. Establish exhaust testing centers and cars that fail the tests by emitting fumes above allowable emissions levels will be subjected to mandatory repairs or scrapped.
  - iii. Consider measures to restrict importation of vehicles that do not adhere to allowable emissions levels.
18. To maintain a clean and green environment, South Sudan will encourage payment for ecosystem services, access to resources and benefit sharing to avoid depletion of important natural resources. This would contribute towards the

sustainability and viability of initiatives to reduce emissions from deforestation and forest degradation.

19. Summary information on Mitigation contribution is provided below:

1. Timeframe	2016 – 2030
2. Type of Contribution	Policies and actions in identified sectors of economy. The mitigation contribution is contingent upon availability of international support for means of implementation.
3. GHG reductions	In absence of detailed analysis the assessment of BAU emissions and impacts of identified policies and actions of GHG emissions reductions below shall be presented at a later date.
4. Sectors	Energy generation and energy end use; Transport; and Land Use and Land Use Change
5. Gases	CO2

### **Adaptation**

20. With the effects of climate change already being felt in South Sudan in the form of erratic and reduced rainfall periods and consequent increased frequency of droughts and floods, the country is currently in an advanced stage of developing its National Adaptation Plan of Action. The NAPA document will be launched on 12 November 2015. The NAPA and the INDC will form the basis of South Sudan’s adaptation strategy.

21. A sectoral approach has been adopted in this INDC, though in South Sudan, the technical assessments on vulnerabilities, hazards, and priority sectors is limited. Priority actions are based on observed adverse effects of climate change on the sectors. Further assessments into specific actions and needs is required. INDC includes priority actions in the following sectors:

#### *Agriculture and livestock*

22. Agriculture and livestock are the main livelihood of the majority of the population. South Sudan will thus embark on promoting sustainable, climate-smart agriculture and livestock production and management. The country will prioritise the enhancement of climate resilience in the agricultural sector (crop production, livestock, fisheries) through the promotion of climate-smart agriculture, livestock improvement, enhancement of fisheries productivity and soil erosion control. This will be achieved by building upon traditional knowledge and supporting community- based adaptation strategies.

23. Given the frequent droughts experienced in the country, a major priority is promoting the harvesting and retention of water for different uses. This will be implemented through community-based watershed management with a focus on maintaining the quality and quantity of water resources for multiple uses and stakeholders.

#### *Health:*

24. To accurately identify climate change impacts in the health sector, South Sudan will conduct comprehensive vulnerability assessments concerning human health and well-being under current and future climate scenarios. This will inform actions to improve early warning systems for climate-related disease outbreaks (e.g. malaria) and establishing contingency plans to develop climate change-resilient health systems. Public health systems will be strengthened by building hospitals (including regional referral hospitals) and supplying them with medicine, equipment and personnel trained on treating climate-related diseases.

#### *Adapting Vulnerable Communities to Climate Change*

25. Poverty is a determining factor of climate change vulnerability in South Sudan. Poverty is widespread, particularly in the rural areas – which are home to more than 6.9 million people. Approximately 51% of South Sudan’s population lives below the national consumption poverty line. People living in poverty do not have the financial capacity to cope with climate change. Furthermore, these people are often compelled to live in high-risk areas that are prone to floods and droughts. This also has to take into account gender equality and human rights.

26. Actions to reduce vulnerability of the population to climate induced hazards are the following:

- i. Enhance access to water in light of growing climate threats through integrated watershed management, wetland management and improved waste management.
- ii. Enhance food security under a changing climate through the introduction of climate-smart agricultural techniques and irrigated agriculture.
- iii. Ensure capacity building and participation of the society, local communities, indigenous peoples, women, men, youth, civil organizations and private sector in national and subnational climate change planning.
- iv. Establish/rehabilitate the hydro-meteorological monitoring network to collect climatic information and provide flood and drought early warning.
- v. Strengthen the adaptive capacity of the population through transparent and inclusive mechanisms of social participation in the implementation of adaptation interventions, designed with a gender and human rights approach.
- vi. Reduce vulnerability of population by integrating climate change considerations into land use planning.
- vii. Increase investments in disaster prevention mechanisms, such as early warning systems, rather than disaster response mechanisms.
- viii. Improve environmental health-related infrastructure to reduce the spread of water-borne diseases which will be exacerbated by climate change.
- ix. Create buffer zones and relocate vulnerable communities away from flood-prone areas.

#### *Forests, Biodiversity and Ecosystems*

27. In South Sudan, there is a large diversity of ecosystems that provide society with a wide range of environmental services such as carbon sequestration, provision and maintenance of water resources, flood mitigation, provision of food and NTFPs, and the formation and maintenance of soils. These ecosystem services are seriously threatened by human activities and by the effects of climate change.

28. South Sudan is home to the largest designated Ramsar wetland of environmental importance, the Sudd, which is pivotal in regulating the weather patterns in the Sahel, the Horn of Africa and the greater East Africa region. The Sudd acts as a barrier to the southward encroachment of the Sahara desert and its preservation and management is consequently expected to be South Sudan's most significant contribution toward buffering against the impacts of climate change at the regional level.
29. Ecosystem-based adaptation consists of the conservation of biodiversity and ecosystem services as part of an integrated adaptation strategy to assist human communities to adapt to the adverse effects of climate change.
30. Given the reliance of the majority of the population on forest resources, adaptation priorities in this sector include supporting forest governance, reducing over reliance on forest products by providing alternative income-generating activities and encouraging planting of climate-resilient tree species. This will be further supported by the development of mechanisms to ensure equitable sharing of benefits accrued from the forest resources.
31. Actions for the sector:
  - i. Promote agro-forestry practices as a way of diversifying land production systems and promoting alternative livelihood options.
  - ii. Promote afforestation of degraded landscapes/watersheds using multi-use forest species to increase community safety-nets and diversify livelihoods.
  - iii. Develop forest reserves and management plans to protect watersheds and improve future water availability.
  - iv. Promote alternative sources of energy to reduce deforestation and the consequent loss of livelihood options.
  - v. Improve the enforcement of environmental regulations.
  - vi. Establish conservancies and protected areas to buffer local communities and biodiversity against climate change impacts.
  - vii. Establish water points for wildlife in protected areas to reduce the negative effects of droughts on animal populations.
  - viii. Increase awareness of local communities on climate change and environmental protection.
  - ix. Introduce fire management plans to prevent the spread of wildfires during periods of drought.
  - x. Introduce an integrated natural resource management approach.

### *Infrastructure*

32. Strategic infrastructure – including communications, transport, tourism, energy, sanitation, water and waste management – is vulnerable to the effects of climate change. Therefore, it is necessary to incorporate climate change criteria as part of its design, construction and throughout its useful life span, in order to reduce its vulnerability and increase its resilience.
33. To address potential impacts related to damages to infrastructure, South Sudan will invest in making existing and new buildings more climate resilient. This will be achieved through *inter alia* ensuring that land-use plans and building codes reflect the expected impacts of climate change and the need to make public and private buildings more climate-resilient.
34. Actions for infrastructure:

- i. Improve urban and industrial waste water treatment, ensuring quantity and good quality of water in human settlements.
- ii. Incorporate adaptation criteria for public investment projects, particularly those to be carried out under the Comprehensive Agriculture Development Plan and the Irrigation Development Master Plan.
- iii. Ensure that land-use plans and building codes reflect the expected impacts of climate change.

#### *Institutional and policy actions*

35. At the institutional and policy level, there is a need to coordinate climate change actions and mainstream climate change concerns into all sectors through capacity building and the development of policies, strategies and action plans to adapt to climate change.
36. To support decision-making for climate change adaptation, South Sudan will implement actions to assemble, analyze, predict and disseminate climate information through improve climate monitoring and data management systems. Based on this, the relevant data and information will be used to develop early warning systems and inform appropriate responses to extreme climatic events.

#### **Capacity Building and Transfer of Technology**

37. South Sudan will encourage innovations in technologies which are appropriate to climate change at all levels and the inclusion of climate change issues in the national curriculum. This will be complemented by the development of climate change awareness programmes for dissemination to the wider public.
38. The Government of South Sudan has identified a number of areas where technology transfer could be of benefit of the country for mitigation and adaptation, including through:
  - i. Renewable energy technologies.
  - ii. Access to climate information systems in order to monitor hydro-meteorological events in real time and establish early warning systems.
  - iii. Water technologies for water savings, recycling, harvesting, irrigation and sustainable management for agricultural purposes.
  - iv. Availability of methods and tools to assess climate impacts, vulnerability and adaptation in specific sectors and regions.
  - v. Transportation technologies that are resilient to the adverse effects of climate change in particular for roads and large-scale transportation of goods. Technologies for the protection of infrastructure, particularly infrastructure in flood-prone areas.
39. Capacity building of this nature would require cooperation between developed countries and developing countries as well as south-south cooperation. This international support would facilitate the development of South Sudan's own technologies as well as enable technology transfer and innovation to increase adaptive capacity within the country.
40. Capacity-building priorities relate largely to planning and implementation of climate change actions at all levels, i.e. national, state and local/community. This needs to involve *inter alia* government officials, private sector agents, civil society, NGOs and local communities. Capacity needs across all levels include:

- i. Conducting vulnerability assessments and identifying climate risks and adaptation options.
- ii. Mainstreaming climate change into policies, strategies and action plans.
- iii. Developing and implementing community-based adaptation plans.
- iv. Enhancing cross-sectoral and inter-ministerial coordination of climate change actions.
- v. Sharing of best practices and lessons learned to inform the selection of adaptation interventions to address specific climate threats.
- vi. Conducting cost-benefit analyses of adaptation options to prioritise implementation of interventions.
- vii. Collecting, analyzing and applying hydro-meteorological and climate data for decision-making and dissemination of early warnings.

### **Summary of Needs**

41. As a post-conflict country, it is imperative for South Sudan to ensure sustainable and climate-resilient development across all sectors. South Sudan is one of the least developed countries of the world and the development policies have to go hand in hand with the climate change initiatives for a more resilient population. Therefore, it is imperative to consolidate platforms for the exchange of knowledge and information related to mitigation and adaptation, as well as to strengthen networks with academic institutions and civil society. Furthermore, it is fundamental to incorporate a gender and human rights approach into capacity building, prioritizing the most vulnerable groups in order to reduce social inequality. Within the context of the current economic circumstances, low levels of capacity and limited availability of climate technologies, South Sudan will only be able to embark on achieving its INDCs with the financial, capacity building and technical support from the international community in its efforts at all levels. The implementation of the above mentioned mitigation and adaptation actions for the period 2016 – 2030 requires the continuous development and strengthening of South Sudan’s capacities.
42. Regarding climate finance, South Sudan has yet to access the same level of financial resources as other least developed countries owing to its recent existence. It is therefore of utmost importance that South Sudan is extended the opportunity to obtain support from the international donor community and other sources of climate finance to design and implement initiatives aimed at addressing the mitigation and adaptation priorities outlined here within the country’s INDCs. South Sudan has begun the process of unlocking access to climate finance through the initiation of the NAPA process that is due to conclude in November 2015. South Sudan also aims to access finance through international carbon markets, and will pursue CDM and REDD+ activities, including the establishment of a Designated National Authority. Subsequent to this, it will require concerted and coordinated effort between the Government of South Sudan and their international development partners to accelerate the process of designing and implementing climate change projects to address both immediate and urgent priorities as well as medium- and long-term climate change risks.
43. It is estimated that investment of over USD 50 billion is required for mitigation and adaptation actions across sectors up to 2030. These are approximate estimates and further analysis is planned to identify support requirements for implementing the policies and actions listed above.

## **Implementation arrangements, including monitoring and reporting progress**

44. Planning Processes: The INDC was developed through a consultative process. Stakeholders from various institutions, including line ministries, NGOs, academia and civil society, attended a series of national workshops in Juba to discuss and develop the INDC. The process was led by the Ministry of Environment.
45. Institutional Arrangements: The INDC was endorsed by the Minister of Environment and various stakeholders at a validation workshop in Juba. The Ministry of Environment will lead the implementation of the INDC. Cross-sectoral contributions will be discussed and implemented through the National Council of Ministers.
46. Monitoring and reporting: South Sudan, through the Ministry of Environment, has the full responsibility to monitor and evaluate the implementation of INDCs through regular stakeholder consultative engagement. This will ensure the effective updating and implementation of both mitigation and adaption plans.