REPUBLIC OF SOUTH SUDAN

MINISTRY OF LIVESTOCK AND FISHERIES






NATIONAL RANGELAND MANAGEMENT STRATEGY AND ACTION PLAN (2022-2031)

REPUBLIC OF SOUTH SUDAN
JUSTICE • LIBERTY • PROSPERITY

INTERGOVERNMENTAL AUTHORITY ON DEVELOPMENT
IGAD
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PEACE, PROSPERITY AND REGIONAL INTEGRATION

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Foreword

The Republic of South Sudan (hereafter referred to as South Sudan) is a landlocked resource-rich country in Eastern Africa, and the youngest nation in Africa. It remains the third most fragile state in the world, after Yemen and Somalia, resulting from a long-drawn conflict driven by historical, political, social and economic marginalization. Since independence in 2011, South Sudan has relapsed into conflict on three occasions. Internal fighting led to massive cross-border displacements of about 4.3 million people, out of which 1.6 million are displaced in neighboring countries, mainly Uganda and the Democratic Republic of Congo (DRC). Oil has been a major factor in the economics and politics of South Sudan and its relations with Sudan. Conflict led to a breakdown of governance structures, law and order, and disruption of community natural resources and institutions that supported livelihoods.

A new peace deal was signed in September 2018 and a Unity Government formed in February 2020, which represented an important transition phase, from conflict towards peace, stability and the initiation of economic recovery. The Peace Agreement and the subsequent formation of the Government of National Unity have ushered in a reform agenda geared towards establishing the building blocks for economic growth, peace and stability and strengthening livelihoods of the rural communities.

South Sudan is endowed with vast and rich natural resources, however, other than oil; other natural resources are barely exploited. For instance, only 4.5 percent of its arable land is currently cultivated, though its population density is one of the lowest in Africa. With the attainment of independence in July 2011, South Sudan is expected to leap frog, and become the bread basket and the economic power house in the East-Central African region.

South Sudan has a broad diversity of ecosystems and habitats that include lowland forests in Eastern and Western Equatoria, Afromontane forests, high altitude plateaus, wooded savannah, savannah grasslands and wetlands and floods plains. The diverse habitats are occupied by a wide range of plant, avian, and mammalian species. Overall, South Sudan has about 30% (191,667 km2) of its total land area covered by diverse natural forest and woodlands. Key highlights of the ecosystems and biodiversity in the country include: The ungulate migration of the tiang, Mangalla gazelle, and white eared Kob as they move through the Boma Jonglei landscape; The Sudd wetland considered the largest tropical wetland in Africa, and possibly the world; and, the largest intact savannahs in Africa.

The country's rangelands biodiversity resources and ecosystems are affected by myriad threats, leading to significant loss or degradation of ecosystems. The most significant threats identified in recent studies include: harvesting for wood-fuel and charcoal, bush meat hunting, poaching and wildlife trafficking, unsustainable grazing practices, agricultural expansion and intermittent inter-community conflicts. There are many factors driving these threats, but weak

governance, lack of effective public service accountability and transparency, regional and domestic instability due to armed conflicts, lack of viable and affordable non-wood fuels, lack of economic alternatives and the inability to invest in new ventures, and lack of non-bush meat protein sources have all been identified as the most significant and influential drivers of biodiversity threats in the rangelands. On the other hand, protected areas (PAs) within rangelands, have suffered notably from armed occupation and exploitation of their natural resources.

Based on the aforementioned state-of-affairs, one of the top priorities of The Government of the Republic of South Sudan (GRSS) is to develop and implement Sustainable Management and Action Plans (SMAPs) in the sub-sectors of the environment sector, so that the exploitation of natural resources does not adversely impact the environment. Until that is achieved, there is enormous pressure on natural resources, especially on the forests, as over 99 percent of the population of South Sudan depends on forests as their source of energy – fuel wood and charcoal, and timber for construction and furniture.

In order to enable the government address the above challenges affecting utilization and management of our biological diversity and ecosystems, The GRSS has formulated various policies and legislations to facilitate the proper management of biodiversity resources and ecosystems in the rangelands; key among these are: Wildlife Conservation and Protected Areas Policy 2012, The Land Policy 2011; Forest Policy 2015; Fisheries Policy 2012; Water Policy 2007; The Tourism Policy 2012; The Transitional Constitution; Land Act 2009; The Wildlife Conservation and Protected Areas Act 2003; The Wildlife Service Act 2011 and The Wildlife Bill 2015 and Tourism Bill 2015 that are still under legal review in the Ministry Of Justice And Constitutional Affairs. The GRSS is committed in continuously seeking best-in-class ways of utilizing and managing our natural resource, and indeed, at this juncture, I do sincerely appreciate the support by The African Union Inter-African Bureau for Animal Resources – AU-IBAR, in assisting South Sudan to adopt the rangeland management strategies and interventions outlined in the IGAD/ICPALD Regional Rangeland Management Strategic Framework (RRMSF) for Arid and Semi-Arid Lands in The IGAD Region, into South Sudan Rangeland Management Strategy and Action Plan (RMSAP).

The Government of the Republic of South Sudan understands and appreciates that at the heart of South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 is a respect for traditional livelihoods, traditional governance systems and the coexistence of livestock, people and wildlife. Indeed, RMSAP 2021-2031 approach to rangelands development and management builds on traditional institutions combined with modern governance institutions, practices, technologies and governance concepts.

The Government of the Republic of South Sudan is committed to implementing the South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031, and will continue

implementing various interventions aimed at eradicating or alleviating various ecosystems and biodiversity threats and related drivers in the rangelands; such interventions shall include: continued efforts aimed at restoration of peace and security in South Sudan, especially at the community-level; supporting community-level integrated activities that improve local community livelihoods, food security, natural resources conservation, and resilience; ensuring rangeland development programs implementation integrate sustainable development principles; integrating climate change adaptation and mitigation into all rangeland programs; strengthening the capacity of rangeland communities to manage their own resources sustainably, improving their livelihoods, and building resilience and strengthening the capacity of government institutions in Natural Resource Management (NRM) to implement their mandates effectively in the rangelands.

Having a formulated and robust South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 in place, I do believe that South Sudan is now poised to starting implementing the outline rangeland management strategies and interventions, and hence realizing sustainable rangelands development and management, that truly ensure sustainable use and stewardship of rangeland resources in order to meet the goals and desires of the communities, such as abundant forage, maintained and improved wildlife habitat, increased livestock production and productivity, adequate water, conducive recreation areas and availability of native plant and animal species, among others.

Hon. Onyoti Adigo Nyikuac
Minister of Livestock and Fisheries
REPUBLIC OF SOUTH SUDAN

Acknowledgement

The Ministry of Livestock and Fisheries, Republic of South Sudan would like to thank all contributors who participated in the production of South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031. Special appreciation goes to our esteemed partner, The African Union Inter-African Bureau for Animal Resources – AU-IBAR, for the provision of technical support, financial facilitation and guidance in the production of this RMSAP 2022-2031. Special recognition and appreciation to Prof. Ahmed Elbeltagy, AU-IBAR - Animal Production, Natural Resource Management and Resilience Expert for his able leadership and guidance on the whole process of formulating the rangeland strategy and action plan.

The Ministry of Livestock and Fisheries would like to register a special gratitude for the excellent engagement of the various contributors and stakeholders who provided comments, suggestions, data and reports, in addition to taking part in interviews and active involvement in both inception and validation workshops. These included, but not limited to the representatives of line ministries, departments, agencies and independent commissions, members of Council of States as well as representative of UN agencies, development partners, NGOs, CBOs, civil societies, pastoralists, agro-pastoralists, community groups and their leaders, academic institutions and private sector.

Special acknowledgement goes to the following key people and institutions who offered elaborate contribution to this rangeland strategy and action plan. They include: Augustino Atillio, Director General of planning, Ministry of Livestock and Fisheries; Kenyi Bullen Baggu, Director for Agroforestry and Extension, Ministry of Environment and Forestry; Noel Bagnaza Cleopas, Deputy Director of Afforestation and Natural Forests, Ministry of Environment and Forestry; Angelo Okeny Langalanga, Director for Research and Training, Ministry of Environment and Forestry; Maj. Gen. Khamis Adieng Ding, Ministry of Wildlife Conservation and Tourism; Simon Dralley, Directorate of Forestry, Ministry of Environment and Forestry; John Kang, Director General of Animal Production and Range Management, Central Equotoria State; Adet Kiir Chol, Secretary General for South Sudan Pastoralist General Union; Girima Elika , Assistant Director for Research, Ministry of Livestock and Fisheries; Director General of Animal Resources, Fisheries and Tourism, Lakes State; Director of wildlife, Lake State; Director of Animal Production, Warrap State; Director General of Animal Resources and Fisheries, Warrap State; Anatolio Wani Jada, Former 1st Director General, Central Equitoria State Ministry of Animal Resources and Fisheries; Mango County Commissioner, Upper Nile State; Rizig Elisama Loma- Principal Marial Lou Livestock Training Centre, Juba; AVSI Foundation Representatives, Eastern Equitoria State; Lukluk Community Association for Development (LCAD), Warrap State; Food Security and Livelihoods Manager, CARE International; Livestock Development Specialist FAO South Sudan.

Finally, the Ministry would like to thank the Lead and Assistant Consultants who assisted in offering high-level technical assistance and support, which culminated in the formulation of this very noble National Rangeland Strategy and Action Plan.

Dr. Makuei Malual Kaang
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REPUBLIC OF SOUTH SUDAN

Preface

Rangelands in IGAD region are the backbone of livestock industry and contribute significantly to the member countries' national GDP by providing various economic and livelihood opportunities. They comprise about 60 -70% of the total land area and are home to pastoralist and agro-pastoralist communities whose livelihoods mainly depend on extensive livestock production and rain-fed agriculture. With over 60% of livestock population found in the rangelands, livestock sector contributes 10% – 50 % of the region's individual countries' agricultural GDP. Besides livestock production, these areas support rich diversity of flora and fauna of socio-cultural, economic and ecological importance. They area also sources of mineral, oil and gas, and provide a host of ecosystem services including acting as watersheds, as well as supporting important biogeochemical cycles. However, rangelands in the IGAD region are facing a number of challenges, among them: Inadequate policy, legal, institutional and organizational framework; declining range condition and productivity due to injudicious use and land fragmentation; poor regulation of access to rangeland resources due to weak governance institutions; insecure land rights and tenure; restricted cross-border and inter-community herd movement; inadequate research, extension and human resource capacity to support implementation of rangeland management programmes; poor knowledge management system; low investment in sustainable rangeland management; and frequent droughts and climate change. The droughts and erratic floods episodes normally result in depletion of water and pasture resources, often leading to conflict over the scarce resources, as well as livestock losses.

Sustainable management of the vast rangelands in view of the aforementioned challenges therefore remains one of the major concerns for researchers, policy makers and development practitioners in the IGAD region. It is against this background and recognizing the interconnectedness of issues, shared responsibilities amongst countries that IGAD undertook the development of the Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands (ASALS) in the region. In preparing the RRMSF, IGAD Centre for Pastoral Areas and Livestock Development (ICPALD employed the principles of ownership, participation and partnership with the IGAD Member States and various stakeholders. The RRMSF is therefore a product of mixed approaches that included comprehensive literature review, consultative meetings and key informant interviews, as well as field observations conducted among selected member states of IGAD namely; Uganda, Sudan, Ethiopia and Kenya between January and July, 2019. The reviewed literature included policies documents, scientific publications and reports, while the consulted stakeholders were mainly rangeland management experts, decision makers, development agencies and pastoral and agro-pastoral community representatives. The situation analysis focused on the challenges facing rangelands in the region, existing interventions and opportunities, and priority interventions to achieve sustainable rangeland management. In addition, the draft RRMSF was subjected to a validation exercise in a workshop attended by participants from the Members States (MS), among them Somalia, Ethiopia, Sudan, Uganda, South Sudan, and Kenya.

The broad objective of the RRMSF is to achieve sustainable rangeland management in IGAD region by addressing challenges facing rangelands through harmonization of policies and

practices among the member states, as a way of complementing the efforts of the IGAD member states in sustainable rangeland management.

In order to assist South Sudan domesticate the IGAD-RRMSF in the country, The African Union Inter-African Bureau for Animal Resources – AU-IBAR engaged an International Lead Consultant (ILC) and an Assistant National Consultant (ANC) to facilitate a consultative and participatory process that involved consultation with South Sudan National and State government officials and representatives from UN Agencies, Development Partners, NGOs, Civil Societies, Community-based Originations, Private Sector, Pastoralists and Agro-pastoralist who assisted in the formulation of a framework to domesticate the IGAD/ICPALD Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands.

The framework to domesticate IGAD-RRMSF is a South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 which is aligned to the IGAD Regional Rangeland Management Strategy (IGAD-RRMS).

This South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031, comprises proposed interventions based on five (5) Strategic Priority Areas (SPAs) and related 17 Strategic Goals (SGS) drawn from the literature review and consultations with researchers, rangeland analysts and experts, policy makers, development and programming decision makers in South Sudan and IGAD region. In addition, the South Sudan RMSAP 2022-2031 presents targets to be met, prevailing rangeland development and management baseline situations, specific activities, key performance indicators, responsibilities, timeframes for specific activities execution and financial resources as prerequisites for achieving sustainable and equitable access to rangeland resources in the South Sudan.

This South Sudan RMSAP 2022-2031, is expected to galvanize the South Sudan's efforts in creating positive changes in the livelihoods of pastoralists and agro-pastoralists in the country through sustainable management of rangelands resources, capacity building, promoting commercialization and entrepreneurship, research and technology transfer, networking and partnership, good governance and climate change adaptation and mitigation. All these efforts and initiatives within the framework of South Sudan RMSAP 2022-2031, are expected to truly enable the country achieve sustainable development and management of rangeland resources for the enhanced biodiversity, optimum productivity and improved livelihoods of the present and future generations in South Sudan.

Prof. Ahmed Elbeltagy
Animal Production, Natural Resource Management and Resilience Expert
AFRICAN UNION'S INTER-AFRICAN BUREAU FOR ANIMAL RESOURCES (AU-IBAR)

South Sudan Rangeland Management Strategic Planning Task Force

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Acronyms and Abbreviations

ABTs	Aichi Biodiversity Targets
ASALs	Arid and Semi-Arid Lands
CBD	United Nations - Convention on Biological Diversity
CBO	Community Based Organization
CDC	Cluster Development Committee
CFRs	Central Forest Reserves
CHM	Clearing House Mechanism
CIDA	Canadian International Development Agency
CNA	Capacity Needs Assessment
CLA	Community Land Act
CPA	Comprehensive Peace Agreement
CRPCs	Community Resilience Planning Committees
DANIDA	Danish International Development Agency
DKMS	Digital Knowledge Management System
ECEs	Extreme Climatic Events
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIWA	Global International Waters Assessment
GLMPs	Grazing Land Management Plans
GoSS	Government of Southern Sudan
GRSS	Government of the Republic of South Sudan
IAS	Invasive Alien Species
IBLI	Index-Based Livestock Insurance
ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
IDPS	Internally Displaced Persons
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development
IKMS	Indigenous Knowledge Management Systems
INDC	Intended Nationally Determined Contribution
LEDS	Low Emissions Development Strategy
LIPs	Livelihood Investment Plan
LDN	Land Degradation Neutrality
LULUCF	Land Use, Land-Use Change, and Forestry
LUPs	Land Use Plans
MFP	Ministry of Finance and Planning
MWCT	Ministry of Wildlife Conservation Tourism
NBG	Northern Bahr El Ghazal
NBSAP	National Biodiversity Strategy & Action Plan
NRLGs	Natural Resources and Livelihood Groups
NRLMPs	Natural Resources and Land-use Management Plans
NRRD	Natural Resource and Rural Development
NTFPS	Non-Timber Forest Products
PES	Payment of Ecosystem Services

PFS	Pastoral Field Schools
PDU	Project Development Unit
PPS	Pastoral Production System
PRM	Participatory Rangeland Management
PRP	Participatory Rangeland Planning
RMPs	Resource Management Plans
RVAs	Rangeland Vulnerability Assessments
SAPIAS)	Strategy and Action Plans on Invasive Alien Species
SFRs	State Forest Reserves
SLM	Sustainable Land Management
SoE	State of Environment
SSA	Sub-Saharan Africa
SSP	South Sudanese pound
SS-RMSAP	South Sudan Rangeland Management Strategy and Action Plan
TLMSs	Traditional Livestock Management Systems
ToC	Theory of Change
TVET	Technical and Vocational Education and Training
USAID	United States Agency for International Development
VDC	Village Development Committee
VSCGs	Village Savings and Credit Groups
VWGs	Vulnerable Women's Groups
WBG	Western Bahr El Ghazal
WCS	Wildlife Conservation Society
WES	Western Equatoria State

Glossary

- **Adaptation** means adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities.
- **Adaptive capacity** refers to the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (*IPCC, 2014, Fifth Assessment Report (AR5) Glossary).*
- The **carbon market** is a market that is created from the trading of units of GHG emissions. A carbon credit or offset is a financial unit of measurement that represents the removal of one tonne of carbon dioxide equivalent from the atmosphere. Carbon credits are generated by projects that deliver measurable reductions in GHG emissions.
- **Climate change** means a change in the climate system which is caused by significant changes in the concentration of greenhouse gases as a consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period.
- **Rangelands** are grasslands, shrublands, woodlands, wetlands, and deserts that are grazed by domestic livestock or wild animals. Types of rangelands include tallgrass and shortgrass prairies, desert grasslands and shrublands, woodlands, savannas, chaparrals, steppes, and tundras. Rangelands do not include forests lacking grazable understory vegetation, barren desert, farmland, or land covered by solid rock, concrete and/or glaciers.
- **Sustainable land management (SLM)** refers to practices and technologies that aim to integrate the management of land, water, and other environmental resources to meet human needs while ensuring long-term sustainability, ecosystem services, biodiversity, and livelihoods.
- **sustainable rangeland management (SRM**) involves the kinds of management that consider all aspects of rangelands, including their environmental, economic, and social values and the attempts to integrate them to achieve a sustainable future.
- **Participatory rangeland management (PRM)** is a process of planning and management of rangelands. The process is led by communities, and can be supported by government, development actors and/or rangeland experts.
- The **Sudd** is a vast swamp in South Sudan, formed by the White Nile's Baḥr al-Jabal section. The Arabic word sudd is derived from sadd (سد), meaning "barrier".
- **Haffirs** are manmade ground reservoirs in the earth at suitable locations to store water for drinking purposes for both human and livestock uses. The concept is that water running in natural streams during the rainy season is diverted at certain suitable locations into these haffirs.
- The **Sustainable Development Goals (SDGs),** also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.
- **A Strategy** can also be defined as "A general direction set for the government and its various agencies on a particular development issue in order to achieve a desired state in the future. Strategy results from a detailed strategic planning process".
- **An action plan** is a detailed plan outlining actions needed to reach one or more goals. Alternatively, it can be defined as a "sequence of steps that must be taken, or activities that must be performed well, for a strategy to succeed".
- **An ecosystem** is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles and energy flows.
- **Biodiversity** is the biological variety and variability of life on Earth. Biodiversity is a measure of variation at the genetic, species, and ecosystem level. Terrestrial biodiversity is usually greater near the equator, which is the result of the warm climate and high primary productivity.

Executive Summary

Rangelands in IGAD region are the backbone of livestock industry and contribute significantly to the member countries' national GDP by providing various economic and livelihood opportunities. They comprise about 60 -70% of the total land area and are home to pastoralist and agro-pastoralist communities whose livelihoods mainly depend on extensive livestock production and rain-fed agriculture. With over 60% of livestock population found in the rangelands, livestock sector contributes 10% – 50 % of the region's individual countries' agricultural GDP. Besides livestock production, these areas support rich diversity of flora and fauna of socio-cultural, economic and ecological importance.

South Sudan is also using her expansive rangelands to rear livestock under extensive livestock production systems. Due to availability of large tracts of rangelands and the traditional value placed on livestock, South Sudan has realized the seventh largest livestock herd in Africa, with an estimated 11.7 million head of cattle, 12.4 million goats and 12 million sheep. In relation to the comparably low human population of 12.2 million, this gives the country the highest livestock per capita holding in Africa. The country's livestock wealth is largely vested in the hands of pastoralists and agro-pastoralists that dominate the rangelands and hold 43% and 47% of South Sudan's livestock wealth, respectively. The remaining 10% is being in the hands of urban/peri-urban livestock keepers.

South Sudan livestock resources have an asset value estimated at SSP 7 billion[1] and account for **15% of GDP**[2]. The most recent official estimate of livestock GDP for South Sudan is US$1.7 billion, but this estimate includes forestry and fisheries. However, using the production method used by the IGAD country studies, livestock GDP was later calculated by an IGAD study at US$3.0 billion, hence it can be said the GDP contribution of livestock as per IGAD estimates is about **26.5% of GDP**.

In addition to livestock production, rangelands in South Sudan are habitats for a diversity of flora and fauna of socio-cultural, environmental and economic significance. They are a source of various goods such as timber, and non-timber products such as fiber, gum and resins, honey, medicinal and food plants, minerals, oil, gas, among others. In addition, the rangelands provide various ecosystem services that include water catchment, scenic beauty, as well as habitat for wildlife that form the basis of ecotourism in the country. Rangelands also host sacred sites that are valued for spiritual and religious purposes.

[1] Musinga, M., J. Gathuma, O. Engorok and T. Dargie. 2010. The Livestock Sector in Southern Sudan: Results of a Value Chain Study of the Livestock Sector in Five States of Southern Sudan Covered by MDTF with a Focus on Red Meat. Draft. Juba: GOSS. p. iv.

[2] FAO South Sudan. 2012. Common Programming Framework (CPF) to End Drought Emergencies in the Horn of Africa Country Programme Paper for South Sudan. Draft 23 March 2012. p. 2.

Despite enormous social, cultural, ecological and economic importance of South Sudan rangelands and in extension country's pastoral and agro-pastoral sub-sectors, they face a myriad of challenges, chief of them degradation of the natural resource base partly linked to land use and land tenure changes, breakdown of traditional institutions of natural resource management, low institutional, organizational and human resource capacity. These challenges are exacerbated by the advent of climate change and weak policy and legal framework for rangeland management.

The key challenges facing rangelands in IGAD region and in particular South Sudan are highlighted below.

1. **Inadequate policy and legal framework**: Lack of requisite national policies, and ineffective implementation of existing ones, and failure to domesticate continental and regional policies.
2. **Low institutional and organizational capacity**: Poor organizational structure, infrastructure and staffing of Government Ministries, Departments and agencies charged with the responsibility of rangeland management, coupled with low budgetary allocation.
3. **Rangeland degradation**: Deterioration of soil and vegetation, and spread of invasive plant species leading to pasture and water scarcity. The trend is linked to, among others, fragmentation of rangelands and conflicts leading to confinement of livestock in smaller and drier areas thereby putting pressure on pasture and water resources.
4. **Poor governance of rangeland resources**: Weak statutory and customary institutions partly due to failure to recognize and mainstream traditional institutions and practices owing to lack of legislation.
5. **Insecure land rights and tenure in the rangelands**: Unclear land rights and tenure changes; dual application of communal and statutory land rights due to lack of relevant land laws.
6. **Rangeland encroachment and fragmentation**: Increased privatization and conversion of communal rangelands due to land tenure and land use change driven by demand for agriculture, conservation, settlement, infrastructure development, and extractive industries.
7. **Restricted transboundary and inter-community resource sharing**: Curtailed livestock mobility due non-operationalization of transboundary agreements and the regional transhumance protocol, as well as little recognition of inter-community negotiated resource sharing agreements and conflict resolution mechanisms.
8. **Inadequate research, extension, technical training and poor knowledge management**: Limited and unrealizable research and training funding, partly due to lack of appreciation of the value of rangeland ecosystems; and inadequate rangeland extension due lack of skilled staff, and limited knowledge sharing and technology transfer.

9. **Inadequate investment in sustainable rangeland management**: Low budgetary allocation and lack of incentive partly due to misconceptions about arid and semi-arid lands and the pastoral production system, as well as systemic undervaluation of rangelands due to lack of reliable data on economic value of rangeland ecosystems.
10. **Frequent droughts and climate change**: Recurrent extreme climatic events, especially drought, and increasingly scarce, variable and unpredictable rainfall. This is exacerbated by low adaptation capacity, poor meteorological infrastructure, inadequate access and use of climate information and services.

Based on the above highlighted key challenges facing rangelands in South Sudan and IGAD region in general, and recognizing the interconnectedness of issues in the region, shared responsibilities amongst IGAD Member Countries, IGAD undertook the development of the Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands (ASALS) in the region.

In order to assist South Sudan domesticate the IGAD-RRMSF in the country, The African Union Inter-African Bureau for Animal Resources – AU-IBAR engaged an International Lead Consultant (ILC) and an Assistant National Consultant (ANC) to facilitate a consultative and participatory process that involved consultation with South Sudan National and State government officials and representatives from UN Agencies, Development Partners, NGOs, Civil Societies, Community-based Originations (CBOs), Private Sector, Pastoralists and Agro-pastoralist who assisted in the formulation of a framework to domesticate the IGAD/ICPALD Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands.

The framework to domesticate IGAD-RRMSF is a South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 which is aligned to the IGAD Regional Rangeland Management Strategic Framework (IGAD-RRMSF).

South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 details the rangeland management strategy and action plan based on five (5) Strategic Priority Areas (SPAs) and seventeen Strategic Goals (SGs) as outlined below.

Strategic Priority Areas (SPAs):

- Strategic Priority Area I: Policy and Legal Frameworks
- Strategic Priority Area II: Governance and Management of Rangeland Resources.
- Strategic Priority Area III: Institutional and Individual Capacity Building.
- Strategic Priority Area IV: Biodiversity Conservation and Climate Change Mitigation and Adaptation

- Strategic Priority Area V: Investment in Sustainable Rangeland Development and Management.

Strategic Goals (SGs):

- Strategic Goal 1: To Lay the Groundwork for Change, Capitalize on Conductive Environment for Change and Create a Growing Demand for Change of Rangeland Development and Management Policies and Legal Framework.
- Strategic Goal 2: To Enhance, Harmonize, Formulate and Negotiate on Rangeland Development and Management Policies and Legal Framework Changes and Ensure their Effective Implementation and Impact.
- Strategic Goal 3: To Prepare and Utilize Land Use Plans for Rangeland Development.
- Strategic Goal 4: To Improve Rangeland Health and Productivity.
- Strategic Goal 5: To Strengthen Governance of Rangeland Resources.
- Strategic Goal 6: To Establish and Operationalize Trans-Border and Within the Country Transhumance Agreements, and Inter-Community Resource Sharing Mechanisms for Free, Safe and Peaceful Sharing of Rangeland Resources.
- Strategic Goal 7: To Develop Relevant Rangeland Development and Management Institutions in Terms of their Identities, Functions, Governance and Organization.
- Strategic Goal 8: To Mobilize Financial, Material and Technological Resources for Rangeland Resources Development and Management.
- Strategic Goal 9: To Raise the Level of Knowledge and Skills for the Individual and Teams Involved in Rangeland Development and Management.
- Strategic Goal 10: To Effectively Establish and Manage Protected Areas in Rangelands.
- Strategic Goal 11: To Promote Habitat Restoration in Degraded Rangelands.
- Strategic Goal 12: To Prepare for and Adjust to Both the Current Effects or Benefits of Climate Change and the Predicted Impacts or Opportunities in the Rangeland.
- Strategic Goal 13: To Tackle the Causes and Minimize the Possible Impacts of Climate Change in the Rangeland.
- Strategic Goal 14: To Invest in Labor and Social Capital in order to Produce a Wide Array of Environmental and Economic Benefits.
- Strategic Goal 15: To Invest in Infrastructure, Production Facilities, Machines and Equipment.
- Strategic Goal 16: To Invest in Natural Resource and Land Development.
- Strategic Goal 17: To Invest in Entrepreneurship Development in Rangelands

The South Sudan RMSAP 2022-2031, is expected to galvanize the South Sudan's efforts in creating positive changes in the livelihoods of pastoralists and agro-pastoralists in the country through sustainable management of rangelands resources, capacity building, promoting commercialization and entrepreneurship, research and technology transfer, networking and

partnership, good governance and climate change adaptation and mitigation. All these efforts and initiatives within South Sudan RMSAP 2022-2031, are expected to empower the country achieve sustainable development and management of rangeland resources for the enhanced biodiversity, optimum productivity and improved livelihoods of the present and future generations in South Sudan. The total estimated budget for the implementation of the South Sudan RMSAP 2022-2031 is 6.083 Billion US Dollars as shown below including breakdown into the 5 strategic priority areas (SPAs).

Budgeting per each of the strategic priority area (SPA) after weighting		
Strategic Priority Area (SPA)	**Weighting in %**	**Allocation for the 10 Years' RMSAP Implementation Period (USD) in billion.**
Policies and Legal Framework	8.2%	0.5
Governance and Management	9.6%	0.582
Institution and Individual Capacity Building	6.5%	0.395
Biodiversity Conservation and Climate Change Adaptation and Mitigation	21.1%	1.286
Investment in Sustainable Rangeland Development	54.6%	3.32
Total	100%	6.083

In order to formulate the South Sudan RMSAP 2022-2031, a combination of methods was employed in collecting pertinent information, including literature review and consultations with a wide range of stakeholders on rangeland management and pastoral issues in South Sudan. The stakeholders consulted included pastoralist and agro-pastoralist communities, representative from national, state and county governments, researchers, academia, development agencies, NGOs, civil societies and community-based organizations. Key informant interviews, direct observations and consultative meetings were used to gather relevant information on key challenges, existing interventions, opportunities and priority rangeland management actions for South Sudan.

CHAPTER ONE: INTRODUCTION

1.1 Background Information

About 60-70% of the terrestrial land surface in IGAD region is arid and semi-arid, and is classified as rangelands[3]. The rangelands are home to pastoralist and agro-pastoralist communities whose livelihoods mainly depend on extensive livestock production. In IGAD region, rangelands are the backbone of livestock industry that provides various economic opportunities along the value chain, therefore contributing significantly to the member countries' national GDPs. About 53% of the region's cattle (51 million), 71% of the goats (58 million), 68% of the region's sheep (58 million)[4], and 51% of the global camel population (17.5 million) are found in the rangelands. The livestock sector in the region contributes 10% – 50 % of the individual countries' agricultural GDP[5].

South Sudan officially known as the Republic of South Sudan is a landlocked country in east/central Africa. It is bordered to the east by Ethiopia, to the north by Sudan, to the west by the Central African Republic, to the southwest by Democratic Republic of the Congo, to the south by Uganda and to the southeast by Kenya.

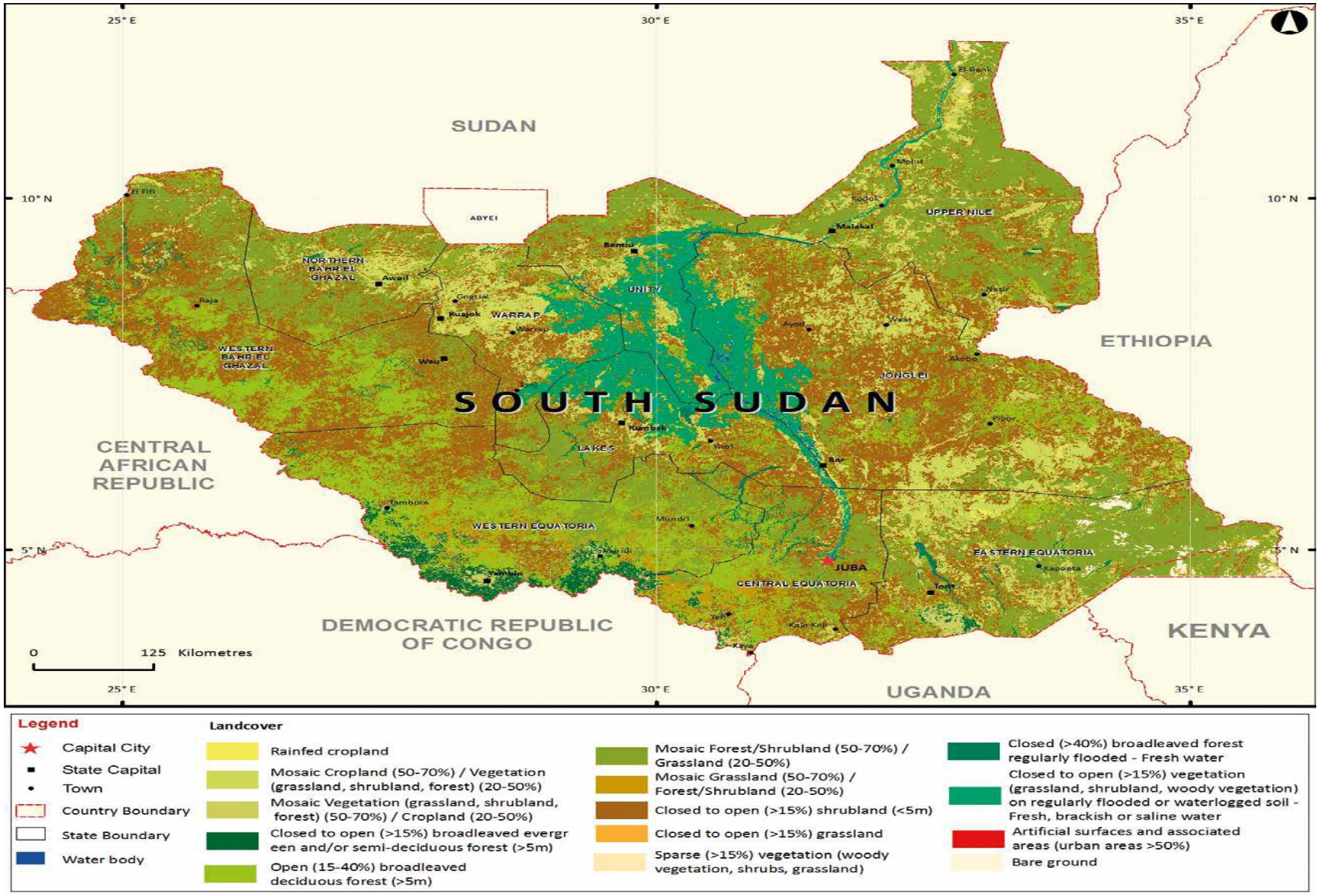
Located in both Eastern Africa and North Africa, South Sudan has a land area of 644,329 km2, a population currently estimated at about 12 million and average number of people estimated at 13 people/km2 making South Sudan one of the least densely populated countries in sub-Saharan Africa. South Sudan is divided into 10 historical states, which are Northern Bahr el Ghazal, Western Bahr el Ghazal, Western Equatoria, Central Equatoria, Eastern Equatoria, Lakes, Warrap, Unity, Upper Nile and Jonglei. At the subnational level, states are further subdivided into counties, counties into Payams and Payams into Bomas (AfDB 2013). Many development programmes are aligned to the 10 states agreed under the Comprehensive Peace Agreement.

Most of South Sudan is covered with natural and semi-natural vegetation with variable tree density. Vegetation cover is mostly high in the southwest, with thick tropical forests in the Greater Equatoria region, and low in the southeast and north, where semi-arid savannah dominates. Grasslands, aquatic vegetation and open water occupy the wetter regions. A large part of South Sudan is covered by the Sudd swamp, a conglomeration of smaller wetlands (Fernando & Garvey, 2013); (RSS, 2016b).

[3] IGAD. (2015). IGAD Centre for Pastoralist Areas and Livestock Development (ICPALD) Strategic Plan, 2016-2020.
[4] FAO. (2008). Managing East African for Better Response to Feed Crisis. Proceedings of Sub-Regional Workshop held on 9-12 November 2008, Addis Ababa, Ethiopia, FAO Sub Regional Office for East Africa (SFE).
[5] Behnke R. and Muthami D. (2011). The Contribution of Livestock to the Kenyan Economy (IGAD LPI Working Paper No. 03 –11) 2011. An ICPALD working paper, IGAD

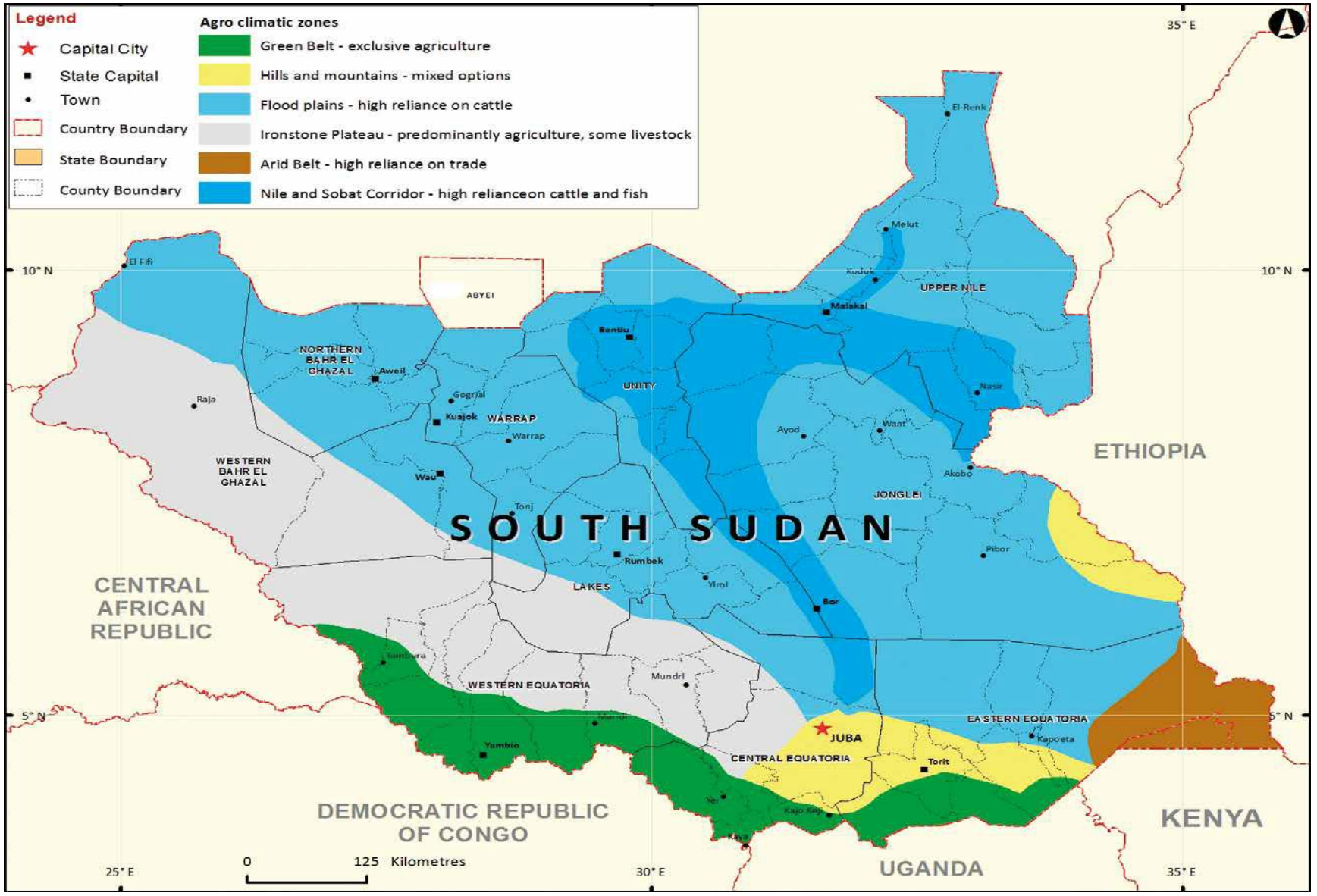
Figure 1 below shows the distribution of the basic land-cover types (cropland, scrubland, grassland, forests, wetlands and lakes).

Figure 1: Land Cover of South Sudan. *Source, (European Space Agency [ESA], 2009)*



In regard to **Agro-climatic zones,** South Sudan's climate and soils are primary determinants of the type of agricultural occupations that can be undertaken, and how, where and when they occur. Generally, mixed cultivation takes place in the Green Belt, and livestock rearing and extensive cultivation are practiced in the Ironstone Plateau (few livestock in this agro-climate zone), Nile and Sobat corridor, flood plains and semi-arid zones (EU, 2016). **Figure 2**, shows a map of the country's six main agro-climatic zones. Semi-arid region occupies the extreme southeastern parts of Eastern Equatoria state and is characterized by patches of open short grasslands and Acacia bushland. An extension of the northeastern Kenyan semi-arid zone, so it shares the same fauna and flora. The most abundant large mammal species is Grant's gazelle (Gazella granti), followed by Beisa Oryx (Oryx beisa), and lesser kudu (Tragelaphus imberbis). Elephant (Loxodonta africana) and common eland (Taurotragus oryx) are also present in Loelle (Ilemi triangle area).

Figure 2: Agro-Climatic Zones of South Sudan- *Source: (EU, 2016)*



South Sudan has the seventh largest livestock herd in Africa, with an estimated 11.7 million head of cattle, 12.4 million goats and 12 million sheep. In relation to the comparably low human population of 12.2 million, this gives the country the highest livestock per capita holding in Africa. The country's livestock wealth is largely vested in the hands of pastoralists and agro-pastoralists that dominate the rangelands and hold 43% and 47% of South Sudan's livestock wealth, respectively. The remaining 10% is being in the hands of urban/peri-urban livestock keepers.

In addition to livestock production, rangelands in the region are habitats for a diversity of flora and fauna of socio-cultural, environmental and economic significance. They are a source of various goods such as timber, and non-timber products such as fiber, gum and resins, honey, medicinal and food plants, minerals, oil, gas, among others. In addition, the rangelands provide various ecosystem services that include water catchment, scenic beauty, as well as habitat for wildlife that form the basis of ecotourism in respective countries. Rangelands also host sacred sites that are valued for spiritual and religious purposes.

Despite enormous social, cultural, ecological and economic importance of rangelands and in extension pastoral and agro-pastoral sub-sectors, they face a myriad of challenges, chief of them degradation of the natural resource base partly linked to land use and land tenure changes, breakdown of traditional institutions of natural resource management, low institutional, organizational and human resource capacity. These challenges are exacerbated by the advent of climate change and weak policy and legal framework for rangeland management. The key challenges facing rangelands in IGAD region and in particular South Sudan are highlighted below.

1. Inadequate policy and legal framework: Lack of requisite national policies, and ineffective implementation of existing ones, and failure to domesticate continental and regional policies.
2. Low institutional and organizational capacity: Poor organizational structure, infrastructure and staffing of Government Ministries, Departments and agencies charged with the responsibility of rangeland management, coupled with low budgetary allocation.
3. Rangeland degradation: Deterioration of soil and vegetation, and spread of invasive plant species leading to pasture and water scarcity. The trend is linked to, among others, fragmentation of rangelands and conflicts leading to confinement of livestock in smaller and drier areas thereby putting pressure on pasture and water resources.
4. Poor governance of rangeland resources: Weak statutory and customary institutions partly due to failure to recognize and mainstream traditional institutions and practices owing to lack of legislation.
5. Insecure land rights and tenure in the rangelands: Unclear land rights and tenure changes; dual application of communal and statutory land rights due to lack of relevant land laws.

6. Rangeland encroachment and fragmentation: Increased privatization and conversion of communal rangelands due to land tenure and land use change driven by demand for agriculture, conservation, settlement, infrastructure development, and extractive industries.
7. Restricted transboundary and inter-community resource sharing: Curtailed livestock mobility due non-operationalization of transboundary agreements and the regional transhumance protocol, as well as little recognition of inter-community negotiated resource sharing agreements and conflict resolution mechanisms.
8. Inadequate research, extension, technical training and poor knowledge management: Limited and unrealizable research and training funding, partly due to lack of appreciation of the value of rangeland ecosystems; and inadequate rangeland extension due lack of skilled staff, and limited knowledge sharing and technology transfer.
9. Inadequate investment in sustainable rangeland management: Low budgetary allocation and lack of incentive partly due to misconceptions about arid and semi-arid lands and the pastoral production system, as well as systemic undervaluation of rangelands due to lack of reliable data on economic value of rangeland ecosystems.
10. Frequent droughts and climate change: Recurrent extreme climatic events, especially drought, and increasingly scarce, variable and unpredictable rainfall. This is exacerbated by low adaptation capacity, poor meteorological infrastructure, inadequate access and use of climate information and services.

Based on the above highlighted key challenges facing rangelands in South Sudan and IGAD region in general, and recognizing the interconnectedness of issues in the region, shared responsibilities amongst IGAD Member Countries, IGAD undertook the development of the Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands (ASALS) in the region.

In order to assist South Sudan domesticate the IGAD-RRMSF in the country, The African Union Inter-African Bureau for Animal Resources – AU-IBAR engaged an International Lead Consultant (ILC) and an Assistant National Consultant (ANC) to facilitate a consultative and participatory process that involved consultation with South Sudan National and State government officials and representatives from UN Agencies, Development Partners, NGOs, Civil Societies, Community-based Originations (CBOs), Private Sector, Pastoralists and Agro-pastoralist who assisted in the formulation of a framework to domesticate the IGAD/ICPALD Regional Rangeland Management Strategic Framework (RRMSF) for the Arid and Semi-Arid Lands.

The framework to domesticate IGAD-RRMSF is a South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 which is aligned to the IGAD Regional Rangeland Management Strategic Framework (IGAD-RRMSF).

The South Sudan RMSAP 2022-2031, is expected to galvanize the South Sudan's efforts in creating positive changes in the livelihoods of pastoralists and agro-pastoralists in the country through sustainable management of rangelands resources, capacity building, promoting commercialization and entrepreneurship, research and technology transfer, networking and partnership, good governance and climate change adaptation and mitigation. All these efforts and initiatives within South Sudan RMSAP 2022-2031, are expected to empower the country achieve sustainable development and management of rangeland resources for the enhanced biodiversity, optimum productivity and improved livelihoods of the present and future generations in South Sudan

1.2 Economic Importance of Rangelands in South Sudan

South Sudan is geographically divided into three regions (the former historic provinces): Greater Bahr el Ghazal in the northwest, Greater Equatoria in the south and Greater Upper Nile in the northeast. The inherited ten states, upon independence in 2011, have been, politically, divided into thirty-two states in addition to Abyei Administrative Area. In September 2018, the warring parties struck a deal, leading to, hopefully, a peaceful settlement to the problem and sustainable development.

South Sudan gained independence from the Republic of the Sudan in 2011, making it the most recent sovereign state or country with widespread recognition as of 2021. South Sudan has an estimated population of 12.2 million. Nearly 87% of the South Sudanese population depends on agriculture as well as livestock, fisheries and forestry, yet these sectors contribute very little to the national economy. The economy of South Sudan is characterized by a high dependency on oil, limited domestic production and a high reliance on imports. The non-oil economy is dominated by subsistence farming and livestock.

As already stated, South Sudan is highly dependent on oil, which provides 98% of public expenditure, almost all foreign exchange earnings, and 60% of the total GDP[6]. In the non-oil sector, subsistence agriculture (livestock included), forestry and fisheries account for 14.5 %; government services, 9.1 %; trade, hotels and restaurants, 5.9 %; manufacturing and mining, 3.6 %; transport and communication, 3 %; construction, 2.2 % and other services, 2 %.

Approximately 78 % of all households earn their livelihood from farming, fishing, pastoralism or a mix of the three. Farming is predominantly rain-fed, and farmers cultivate their small plots with handheld tools. Some common agricultural products include pineapple, cotton, groundnuts, sorghum, millet, wheat, cotton, sweet potatoes, mangoes, pawpaw, sugarcane, cassava and sesame.

[6] Republic of South Sudan, 2011(b). South Sudan Development Plan 2011 -2013

Pastoralists hold approximately 8 million cattle in aggregate, and, in addition, there are millions of poultry, goats, pigs, horses, donkeys and sheep. Sedentary farming is on the rise, which has reduced the amount of grazing land available for pastoralists (Ghougassian 2012).

It is projected that over the next decade, oil will be the primary source of revenue that will be used to spur economic growth. The Government of the Republic of South Sudan (GRSS) realizes the vulnerability of over reliance on oil as the primary source of Gross Domestic Product (GDP) due to variability in oil prices, and the likely decline in the oil reserves after years of exploitation. According to the South Sudan Development Plan (SSDP) 2011- 2013, agriculture and livestock provide the highest non-oil GDP. The abundance of arable land, aquatic and forest resources, and a youthful and unskilled workforce makes agriculture a priority sector for investment[7]. Agricultural development is a key priority for the government to improve the food security situation in the country and to reduce the reliance on food imports from neighboring countries (Uganda, Kenya, Sudan, and Ethiopia), which currently is about 70%[8].

The natural grazing land constitutes approximately 60% of the total area of the country (approximately 1 million square miles). The desert in the north occupies about 8.6 percent, Low Rainfall Savannah (LRS) and High Rainfall Savannah (HRS) occupy about 52% of the total land cover and livestock is grazed in the rangelands as well as flood plains which all constitute about 50 % rangeland production system in the country's total land cover – this clearly indicates the high economic importance of rangelands in the country.

1.2.1 The Importance of Livestock to Livelihoods

In South Sudan agro-pastoralism is the main livelihood system in rural areas. Although agro-pastoralism involves both livestock rearing and crop production, a household's financial capital is held in the form of livestock. Livestock also supply milk and other foods, and are sold to purchase cereals for food and meet other domestic needs. Poorer households aim to build their herds; this is the key and economically logical strategy for building their financial capital. Due to the seasonality of food production, milk is a critical food at specific times of year, when other foods e.g. cereals, are not readily available. Milk is an especially important food for young children, and pregnant and lactating mothers. Livestock is also important in South Sudan's pastoralist and agrarian areas.

In addition to the role of livestock as financial capital and food, traditional social support systems in South Sudan are based on livestock transactions. In particular, the use of livestock as bride-wealth creates social networks, with reciprocal assistance in times of hardship. An individual's vulnerability depends heavily on their social connectedness, and social connections

[7] IBID

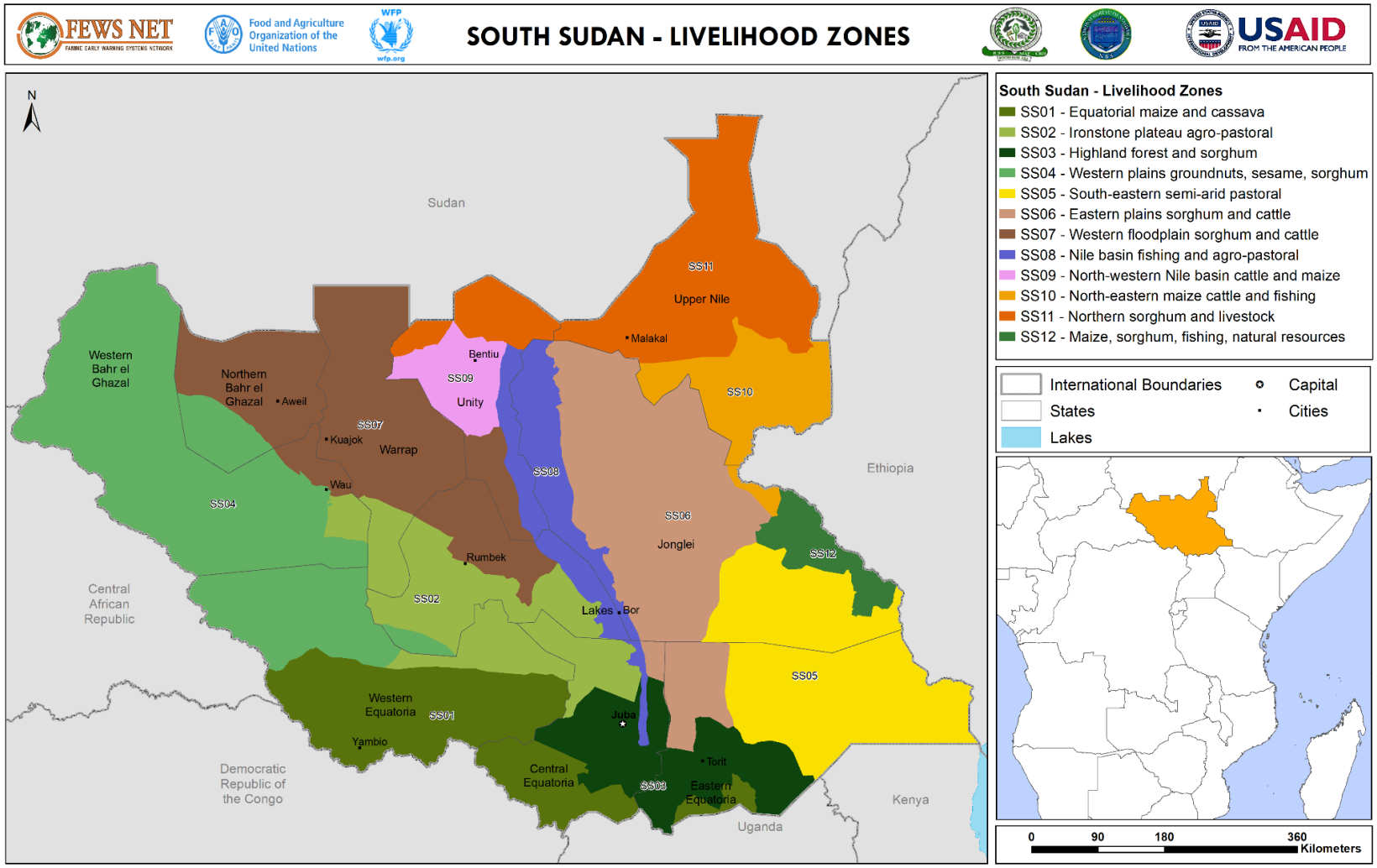
[8] Republic of South Sudan, 2015(b). Fifth National Report to the Convention on Biological Diversity (CBD)

are created and maintained through livestock exchanges. This critical role of livestock in South Sudan is difficult to quantify, but has huge significance in communities facing crises such as protracted conflict and market failures.

As recently as August 2018, livelihood profiles for South Sudan are comparable to those in the pre-CPA period and show the importance of livestock in all 12 livelihoods zones, but with levels of importance depending on whether the zone is primarily agro-pastoralist, pastoralist or agrarian (FEWSNET, 2018).

In essence, South Sudan's environment and climate means that agro-pastoralism is the main livelihood system in the vast western and eastern flood plains, stretching from Northern Bahr el Ghazal across Warrap, Unity, Lakes and Jonglei States. Agro-pastoralism also dominates Upper Nile (**Figure 3**; illustrates the 12 livelihoods zones of South Sudan).

Figure 3: Map of the 12 Livelihoods Zones of South Sudan- *Source: Famine Early Warning Systems Network (FEWS NET), August 2018*



The section below will briefly describe the resource endowment and economic importance of the key agro-pastoralism areas (which are mainly rangelands and coded as SS02, SS05, SS06, SS07, SS08, SS09, SS10 and SS011), which are particularly arid and semi-arid-lands (ASALs) or simply rangelands.

IRONSTONE PLATEAU AGROPASTORAL (SS02)

Vegetation includes forests, bush and savannah. The zone is predominantly covered by acacia forests and scrub and deciduous broad-leaved woodlands. The Southern National Park and Chuol Akol forest fall within the zone and provide opportunities for hunting (antelopes, bush rats, warthogs, porcupines, gazelles and buffalo) normally done during the dry season and natural products including timber, firewood for fuel, and a broad variety of naturally occurring uncultivated foods (e.g., honey, wild tubers, shea butter (lulu), tamarind, mushroom, African fan palm, Jackal berry, black plum, and rubber vine fruit) gathered for consumption and sale in April and July.

The main economic activity in the zone is rain-fed agriculture supported by the rearing of livestock and exploitation of natural products from the forest. Maize, cassava, and other crops including pumpkins are grown on a small scale in certain areas. Cattle, goats, and a few sheep are the main livestock reared in this zone. Some poultry is kept by very small numbers of households for consumption. Cultivation occurs on the plateau in the wet season with the transhumant movement of livestock in the dry season to the wetter areas of the Greater Bahr el Ghazal region, particularly the Bahr el-Jebel areas of Lake Nyubor and the Toch River. In this agro-pastoral zone, wealth is determined by the land size cultivated and the number of animals owned. Livestock is driven to auctions in the major markets in the zone.

SOUTH-EASTERN SEMI-ARID PASTORAL (SS05)

Vegetation is characterized by dense thickets, bush shrubs, and savanna grasslands, which is more suitable to rearing livestock than growing crops. The zone is also home to Boma National Park, a source of natural products. Wild animals mostly inhabit the bush scrub landscape, which doubles as livestock migratory routes for agro-pastoral people and pastoral keepers. There are a few permanent rivers or water points found in the zone along the highlands on the Ethiopian border, which offer good grazing and livestock watering points. The zone's mineral deposits include gold, diamonds and marble, but mining remains artisanal and small-scale.

Livestock rearing drives the zone's economy. The zone is inhabited by almost pure pastoralists who survive in a very harsh, drought-prone environment. Livestock kept include cattle, camels, goats, and sheep and, to lesser extent, poultry (mainly for household consumption). Livelihoods are also reliant on wild foods such as balanite (Lalop), tamarind, nabak, and gum africana, as well as wild game meat, which is hunted in the dry season from December to May.

EASTERN PLAIN SORGHUM AND CATTLE (SS06)

The vegetation cover is characterized by dense acacia tree thickets, bush shrubs and savanna grasslands, marshland and semi-deserts. The two main rivers, the Sobat, originating in Ethiopia, and the Nile, are central to the seasonal livestock migration that is the hallmark of this zone. The main cattle grazing areas are located along the two main rivers and are generally shared among the different Nuer groups. The rivers are a source of fish throughout the year. During the dry season, from December to May, wild game meat is available in the forests found in and around the zone, including the Boma, Bandingilo and Zefa National parks.

NORTHWESTERN FLOOD PLAIN SORGHUM AND CATTLE (SS07)

The zone is a classic mixed, agro-pastoral production system. Almost all households, from poorer to better-off, are involved in cropping (exclusively rain fed) and rearing of livestock, and both components play a fundamental role in meeting food and cash income requirements. These two components are supplemented to a significant degree by fishing, hunting, and the collection of uncultivated native products and plants.

The main crop is sorghum, which, in addition to groundnuts and sesame, is the key cash crop grown. Maize, pearl millet, legumes, and vegetables are also grown (in order of importance). Livestock are very important assets in the zone and the main types are cattle, goats, sheep, and poultry (in order of importance).

Fishing is practiced by all households during the rainy season when the flood plain is inundated. A large array of wild foods[9] that are available at different times throughout the year and which, like fishing, constitute a normal component of the diet. While livestock sales and crop sales, complemented by petty trade, are the main sources of income for better off households, poorer households rely on the sale of labor for cropping and livestock rearing, natural materials (grass, charcoal, etc.), fish and wild foods, sheep and goats, locally-brewed alcohol, and water to better off households. The poorest households with no cattle are often supported by better-off relatives, for example, in the form of gifts of sorghum, shared rearing of livestock, or access to a milking cow.

[9] including honey, wild shea butter, game meat (e.g., antelope, gazelle, wild pig, warthog, impala, rabbit, and peer), grains and seeds (e.g., akuadha, goor, kuel), tubers and other roots (e.g., kei, acuech, leeth, athon), tamarind, mushrooms, leafy greens (e.g., nguit, annet, abyei, akuar, yinthou, apoor-monydit, abuthguk, alongkoi) and coconut and other fruits (e.g., apam, lang, milat, thou, apor, gumeel, coom, kurnyuk, kuec, ngap, lulu and akondok).

NILE BASIN FISHING AND AGRO-PASTORAL (SS08)

The zone is a narrow band of swampy flood plain on either side of the river. Tall reeds and grasses such as papyrus, as well as bush scrub dominate the landscape. The soils immediately adjacent to the river tend to be high in clay, becoming more sandy loam further away from the river.

Naturally-occurring resources are diverse: papyrus grasses (for making mats), fish, crustaceans, wild animals and birds, water lilies, foods including fruits, tubers, leaves, and honey, and gum Arabic, wood, etc. Reserves of crude oil are present in the zone. A diverse range of fish species exist, and fishing is an important component of livelihoods, especially for poorer households. Fishing remains artisanal for the most part involves the use of canoes, spears, and nets. The introduction of refrigerated carriers indicates a potential for increased exploitation. In addition to fishing, other common naturally-occurring foods fundamental to the food security of households include water lily and lalop (desert dates), as well as roots and tubers, vines, berries and fruits, leafy greens, honey, and game meat (e.g., dik-dik, antelope). Many of these can be processed for sale or later consumption and are considered an intrinsic part of normal livelihoods.

Rain-fed farming is practiced by most households. Sorghum is the primary staple grown. Other crops include maize, cowpeas, groundnuts, and vegetables such as okra and pumpkins. Most cultivation is done manually, although some better-off household use ploughs and machines. Cattle, goats, and sheep are commonly held by poor and better-off households. Livestock from other zones are brought in towards the end of the dry season for water from the Nile.

NORTH-WESTERN NILE BASIN CATTLE AND MAIZE (SS09)

Like in zone SS07, flat flood plains are the typical landscape of the zone, with extensive savannah, bush and patches of forest, and a network of permanent swamps, seasonally flooded grasslands, rivers, and lakes. Significant reserves of natural resources include oil, zinc sulfate, timber, gum Arabic and grasses.

The sale of cattle and small livestock, hides, milk and other products are the most important sources of cash for the zone's economy. All households' rear livestock, and hence cattle are the most populous, followed by goats and sheep. Livestock are free-grazed throughout the year, following availability of pastures at varying distances from the village of origin. Maize is the main crop cultivated, rather than sorghum in nearby zones. This relates to the uniquely high population of birds in the zone. Sorghum is cultivated as a secondary cereal, in addition to beans, groundnuts, and various types of vegetables.

Naturally-occurring uncultivated foods include many varieties of fish, leafy greens, grains, seeds and nuts (e.g., leau, lalop and dolieb), tubers and other roots (e.g., water lily), honey, game meat, and fruits. Fishing is done in a traditional manner, using canoes, nets, spears and traps, normally in the dry season.

NORTHEASTERN MAIZE, CATTLE & FISHING (SS10)

The zone is dominated by flood plains due to the Sobat River and its tributaries that flow down from Ethiopia and westward towards Malakal, where it converges with the Nile River. The annual inundation results in an extensive network of swamps in lower lying areas of the flood plains once the rainy season has concluded, between August and September.

Maize is the most important crop in the zone. It is produced in two growing seasons on different types of land. Sorghum, a minor cereal, and cowpeas are also cultivated in the zone. Vegetables include pumpkins, okra, cucumber, Jew's mallow, watermelon, egg plants, and beans. Cattle are grazed freely on extensive pastures and grasslands. Goats are the second most common livestock with sheep and poultry also raised.

NORTHERN SORGHUM AND LIVESTOCK (SS11)

The zone is characterized by vast, low lying, flat plains, an extensive international border with the Republic of Sudan, and a discrete riverine area surrounding the Nile River. It is climatically semi-arid and has a classic agro-pastoral system of production, with both cropping and livestock rearing being crucial components to livelihoods. These are supplemented by fishing and other livelihood activities such as labor migration and petty trade. Cereal surpluses are produced in specific areas of the zone, where mechanized commercial farming is near the Nile River. Most of the zone has a subsistence-level of production, however, with an overall cereal deficit. Vegetation is mostly open savannah and grasslands. Hardy trees and shrubs, such as *Balanites aegyptiaca*, are typical.

Cropping and livestock rearing are the basis of the economy of the zone. The most important crop is sorghum, followed by maize, cowpeas, sesame, and vegetables (including pumpkin, okra, eggplant, cucumber, tomato and watermelon), and sweet potatoes. Livestock of all types are reared for sale and consumption, including cattle, goats, sheep, pigs, and chickens. The most common commodities produced and sold in the zone are milk, fish, firewood, game meat, and honey.

1.2.2 The Contribution of Livestock to Gross Domestic Product

There are no available, recent and reliable data on the animal population or the amount of land covered by rangeland in South Sudan (MOE, 2015). Information from the 1990s suggest that the civil war and years of cattle raiding had reduced herd sizes in South Sudan; for example, about 40 per cent of families lost livestock in Northern Bahr el Ghazal during that decade (BRACED, 2016a).

South Sudan has the sixth largest livestock herd and the highest livestock per capita holding in Africa with an estimated livestock population of 11.7 million cattle, 12.4 million goats and 12.1 million sheep.[10] These vital resources have an asset value estimated at SSP 7 billion[11] and account for **15% of GDP**[12].

The most recent official estimate of livestock GDP for South Sudan is US$1.7 billion, but this estimate includes forestry and fisheries. However, using the production method used by the IGAD country studies mentioned above, livestock GDP was later calculated by an IGAD study at US$3.0 billion, hence it can be said the GDP contribution of livestock as per IGAD estimates is about **26.5% of GDP**.

Considering the vast land suitable for livestock rearing, the country has a great potential to meet the domestic demand for livestock products, export surpluses and improve the livelihoods of the population that depend on the sector, particularly pastoralists and agro-pastoralists predominating in the dry lands of the country.

Livestock populations for South Sudan have been based on estimates from MLFI and adopted as the official livestock figures since 2009. There were plans by FAO and MLFI to carry out a detailed livestock census in 2014, but these have been hindered by the 2013 conflict that was experienced in several parts of the country. The distribution of livestock in the different states is as shown in the **Table 1** below.

[10] FAO. 2009. Livestock Population Estimates. (As cited in AO/WFP. 2013. Crop and Food Security Assessment Mission to South Sudan Special Report. 22 February. Rome: FAO/WFP. p. 29.)
[11] Musinga, M., J. Gathuma, O. Engorok and T. Dargie. 2010. The Livestock Sector in Southern Sudan: Results of a Value Chain Study of the Livestock Sector in Five States of Southern Sudan Covered by MDTF with a Focus on Red Meat. Draft. Juba: GOSS. p. iv.
[12] FAO South Sudan. 2012. Common Programming Framework (CPF) to End Drought Emergencies in the Horn of Africa Country Programme Paper for South Sudan. Draft 23 March 2012. p. 2.

Table 1: Livestock Distribution in South Sudan States as Per MARF and FAO, 2009

State	Cattle	Sheep	Goats	Total
Central Equatoria	878,434	1,153,283	1,265,977	3,297,694
Eastern Equatoria	888,278	1,132,541	1,025,297	3,046,116
Western Equatoria	675,091	1,153,283	1,169,705	2,998,079
Jonglei	1,464,671	1,207,214	1,400,758	4,072,643
Unity	1,180,422	1,754,816	1,487,402	4,422,640
Upper Nile	983,027	439,741	640,209	2,062,977
Lakes	1,310,703	1,464,421	1,232,282	4,007,406
Warrap	1,527,837	1,369,005	1,290,045	4,186,887
Western Bahr-el-Ghazhal	1,247,536	1,120,095	1,265,977	3,633,608
Northern Bahr-el-Ghazhal	1,579,160	1,630,361	1,285,231	4,494,752
Total	**11,735,159**	**12,424,760**	**12,062,883**	**36,222,802**

The above official estimates however differ from those in the 2014 Comprehensive Agricultural Development Master Plan (CAMP) Livelihood Zone Data Book developed by the Ministry of Agriculture, Forestry, Cooperatives and Rural Development and the Ministry of Livestock and Fisheries Industries. The CAMP report is based on data collected by various offices and organizations namely South Sudan Digital Atlas, FAO, the National Baseline Households Survey (2009), the NBS and WFP. This report gives the livestock population in the country as 41,979,705 in total including cattle, sheep, goats, camels, pigs and donkeys and summarized in **Table 2** below. The discrepancy in livestock population figures between the official numbers which have been estimated over the years, and the CAMP figures already is an indication of a shortfall in accuracy of data used for the GDP estimation. This study however adopted the official MARF population estimates in calculating the livestock contribution to agricultural GDP.

Table 2: Livestock Population Figures as Per the CAMP 2015 Report

Livestock type	Population 2014
Cattle	17,729,188
Goats	12,307,686
Sheep	11,682,172
Camel	23,582
Pig	14,406
Donkeys	222,671
Totals	**41,979,705**

1.3 Approach and Methodology

A combination of methods was employed in collecting pertinent information, including literature review and consultations with a wide range of stakeholders on rangeland management and pastoral issues in South Sudan. The stakeholders consulted included pastoralist and agro-pastoralist communities, representative from national, state and county governments, researchers, academia, development agencies, NGOs, civil societies and community-based organizations. Key informant interviews, direct observations and consultative meetings were used to gather relevant information on key challenges, existing interventions, opportunities and priority rangeland management actions for South Sudan. Among the reviewed literature included continental, regional and national policies and proclamations related to rangeland, and their limitations and implications for sustainable rangeland management. The review also included various reports and scientific publications on challenges facing South Sudan rangelands, rangeland condition and trends, existing rangeland management interventions and recommended actions to achieve sustainable rangeland management in the country. The priority interventions comprising strategic goals and corresponding activities were developed based on the situation analysis drawn from both literature and consultations with various stakeholders in the country. Finally, the draft South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 was subjected to a validation exercise in a workshop attended virtually by various participants from South Sudan public and private sectors, development partners, pastoralists and agro-pastoralist communities' representative groups, researchers, academia, NGOs, civil societies and community-based organizations.

CHAPTER TWO: SITUATION ANALYSIS

2.1 Overview

The country boasts diverse agro-ecological zones of which 50% are prime land, but a full 80% is arable suitable for growing a wide range of food and cash crops. There is significant potential for high value fruit and vegetable crops and for the harvesting of dryland crops such as gum Africa. River Nile, and the Sudd, "the world's" most extensive wetlands, confer a huge irrigation potential that would increase the arable area and extend growing seasons. The water resources also have substantive freshwater catch and aquaculture fisheries potential. South Sudan has a potential sustainable freshwater capture fish production capacity that exceeds 200,000 metric tonnes (MT) annually, worth an approximate US 800 million, of which currently 140,000 MT are being caught (Republic of South Sudan 2013).

South Sudan has the seventh largest livestock herd in Africa, with an estimated 11.7 million head of cattle, 12.4 million goats and 12 million sheep according FAO. In relation to the comparably low human population of 12.2 million, this gives the country the highest livestock per capita holding in Africa. The country's livestock wealth is largely vested in the hands of pastoralists and agro-pastoralists that dominate the dry lands and hold 43% and 47% of South Sudan's livestock wealth, respectively. The remaining 10% is being in the hands of urban/peri-urban livestock keepers.

While droughts and floods have a national character, being the most common natural hazard experienced in all the six (6) agro-ecological zones other than the Greenbelt, some zones are more droughts prone. The six broad agro-ecological zones (AEZs) are usually recognized from northwest to southeast; and are characterized by the following areas (i) the Ironstone Plateau (most of Bahr el Ghazal, west of the River Nile) with lateritic soils; (ii) The Central Hills, along the Nile to the north of the Green Belt; (iii) The Green Belt, (southern parts of Eastern Equatoria, Central Equatoria and the western parts of Western Equatoria), which has two rainy seasons and the most fertile arable land in South Sudan; (iv) The Imatong Mountains along the Uganda border; (v) The Flood Plains including the Sudd a vast area of swamp; (vi) The Nile–Sobat Corridor along the banks of the River Sobat which flows from Ethiopia and receives numerous tributaries before draining into the Nile; (vii) A semi desert area in the extreme southeast.

Approximately 15-20% of South Sudan is drylands and ASALs and these are more affected by the vagaries of climate. To the north of the country is a Sudano-Sahelian sub-humid, semi-arid belt that runs through the Western and Eastern Flood Plain livelihood zones that receive on average 400 mm rainfall annually, with dry seasons characterized by pronounced unavailability of water. These agro-climatic zones (ACZs) that largely form the rangelands are further described below.

The Arid/Pastoral Zone which covers parts of Jonglei and Eastern Equatoria States is the driest zone in South Sudan, receiving less than 200 mm of rain annually: Here drought is the norm for a zone with both low and highly variable rainfall (Muchomba and Sharp 2007; Technical Consortium 2012a). This zone is dominated by nomadic pastoralists for whom livestock is the principal physical capital, sold or bartered for grain and other essentials. There is still a dependency on wild foods and livestock products, with minimal crop production restricted to low land catchment areas. Migration, within South Sudan and trans-boundary areas in search of water and pasture is a necessity. Conflict and cattle raiding are common in this area. Social networks are strong and utilized to spread risk. Recent growing settlement, partly due to relief interventions, has led to overgrazing and degradation of fragile environments. Due to erratic weather and more frequent (and more severe) floods and droughts there is an upsurge in the prevalence of vector borne diseases such as East Coast Fever. Community-based animal health services exist, but are inadequate. Both formal and informal markets exist, and include cross-border markets in Kenya, and Ethiopia. Conflicts and livestock diseases constitute major shocks in this zone.

The Western Flood Plains where both drought and floods are common is the most densely populated livelihood zone, with 40% of the population. It includes parts of Northern Bahr el Ghazal, Warrap (Tonji County), and Lakes. Agro-pastoralism, dependent on seasonal migration dominates the traditional economy, with land and cattle the main physical and capital assets. But due to disruption of markets during the conflicts, diversification into crop production is evident but is affected by drought and flooding. This area was greatly affected by the war, and kinship structures that were the main form of social capital where largely eroded weakening capacity for resilience.

Infrastructure including roads and markets are in poor condition and there is lack of financial institutions. Inter-clan and inter-ethnic clashes are common risks: poor households especially in the northern parts of this zone are more vulnerable to droughts and floods due to the shrinkage of their survival options as a result of conflict. Many households are fragmented, and headed by women as a result of extended conflict and war.

The Ironstone Plateau Zone where droughts and floods are frequent hazards that manifest as acute hazards when experienced in successive years. Despite the zone's agricultural potential, crop production is affected by drought due to the low water retention capacity of soils rich in ironstone. Exchanges and trade with the neighboring Greenbelt Zone are important. If there are no constraints to traditional coping mechanisms, the impact of drought is usually manageable (Muchomba and Sharp 2007).

In the Eastern Flood Plains, which covers parts of Jonglei and Upper Nile drought, is a periodic hazard. While the zone is similar to the Western Flood Plains, it is less densely populated and

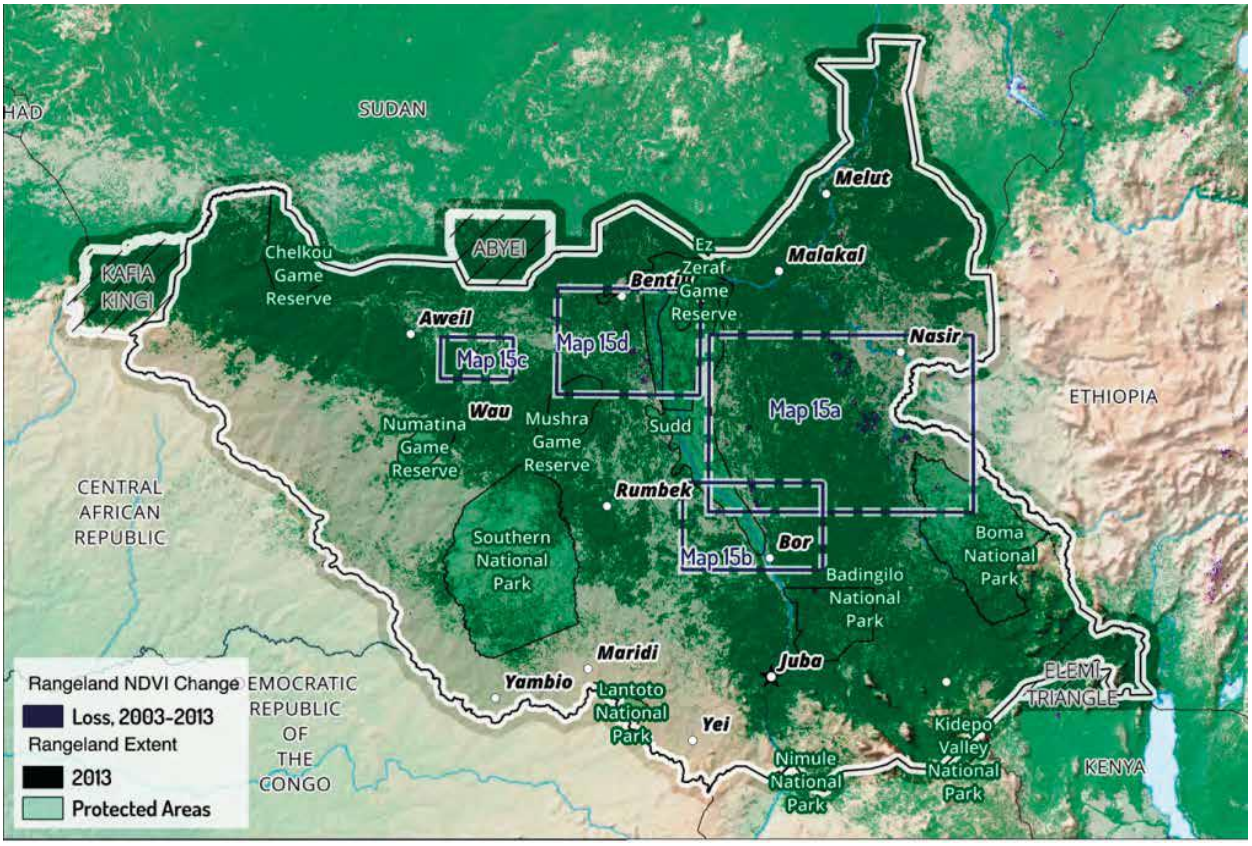
there is greater spectrum of pastoral livelihoods with even poor households investing in livestock. Seasonal fluctuations in water and pasture availability are often pronounced with longer seasonal migrations a necessity to access water and grazing resources and for fishing and trade to diversify livelihoods. The predominant physical capital is livestock and arable land, although there is less reliance on crop production than in the Western Flood Plains. Community-based animal health services exist but are inadequate and hindered by conflict (both inter and intra-tribal) triggered by competition for resources during the dry season, and cattle raiding that is endemic to the region. Social and kinship networks are strong means of risk management and extend cross-border into Ethiopia. Cross-border trade into Ethiopia is not uncommon, but is constrained by poor roads and other infrastructure and inadequate transport means.

In regard to the situation of South Sudan rangelands, it is widely thought that rangeland areas are being depleted due to overgrazing and recurring drought (MOE, 2015). In the early 2000s, there was evidence of land degradation in many places in South Sudan. In the dry season and around watering points, especially along cattle routes to the toich, large herds were responsible for visible overgrazing in some areas (Dima, 2006). It was estimated that between 1973 and 2006, there had been an annual loss of rangeland of 18.5 per cent due to degradation and land conversion (UNEP, 2007); (RSS, 2012). Between 2000 and 2012, it is thought that South Sudan lost approximately 175,000 ha of rangeland cover.

Although the land area lost is currently relatively small, growth in human and livestock populations will increase the likelihood of land degradation and rangeland loss. **Figure 4 to 8** below show rangeland loss in several places throughout the country between 2003 and 2013. There is evidence that in Northern Bahr el Ghazal and the floodplains, grasslands are heavily degraded and low-quality grasses are replacing the perennial grasses, such *Andropogon gayanus* (USAID, 2014).

It is likely that the cultural value placed on cattle contributed to an increase in livestock numbers since the 1960s and that this rise in herd sizes was responsible in large part to overgrazing of rangelands. Between 2000 and 2012, it is thought that South Sudan lost approximately 175,000 ha of rangeland cover. More recently, renewed conflict is probably depleting livestock numbers, since cattle raiding are used as weapons to destroy enemy assets.

Figure 4: Rangeland Loss and Degradation, 2003-2013



Note: An analysis of change in rangeland cover was conducted with two sets of sequential-year MODIS reflectance data: 2001-2003 and 2011-2013. Mean Normalized Difference Vegetation Index (NDVI), a commonly used measure of vegetation health, was calculated per pixel for each 3-year set, and then the newer dataset was subtracted from the older. Source: (USAID, 2014)

Figure 5: Rangeland Loss and Degradation in Eastern South Sudan, 2003-2013; Source: (USAID, 2014)

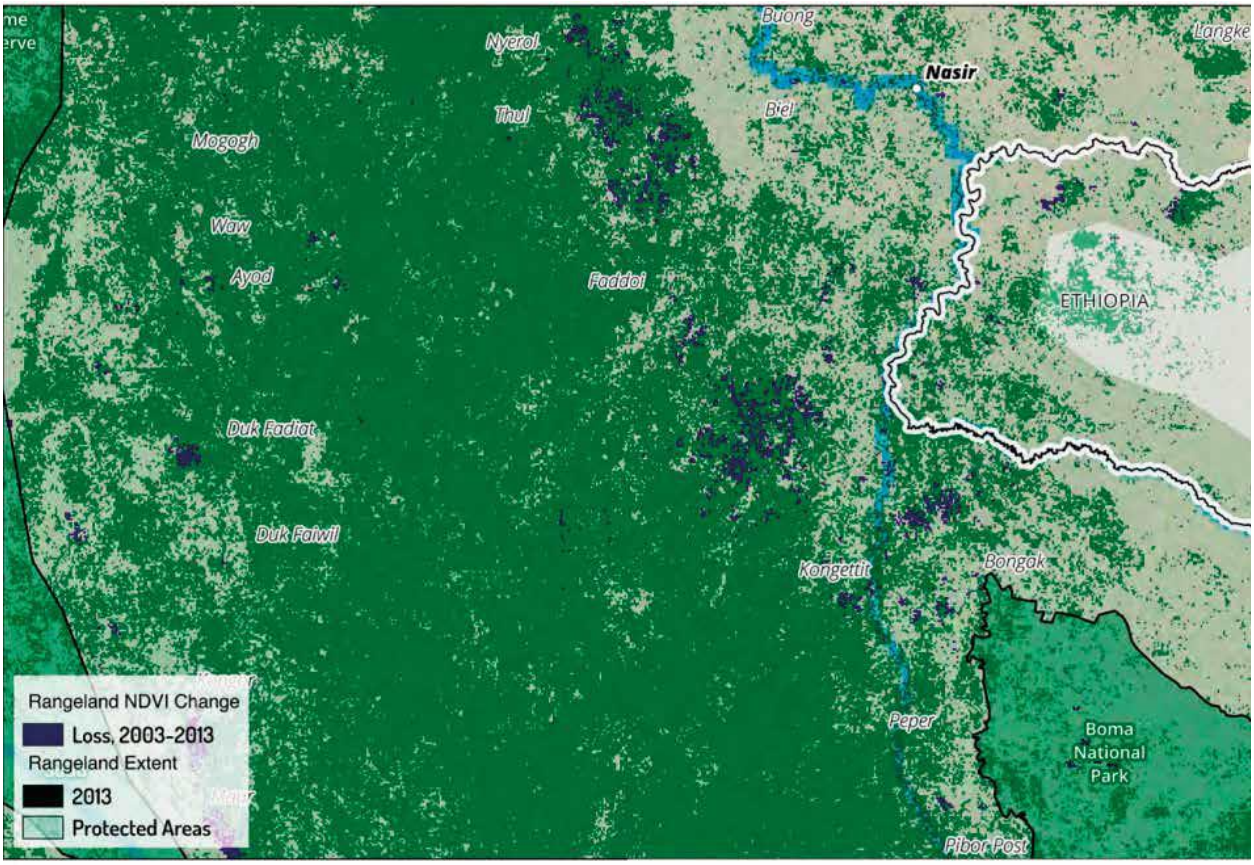


Figure 6: Rangeland Loss and Degradation near Bor, South Sudan, 2003-2013; Source: (USAID, 2014)

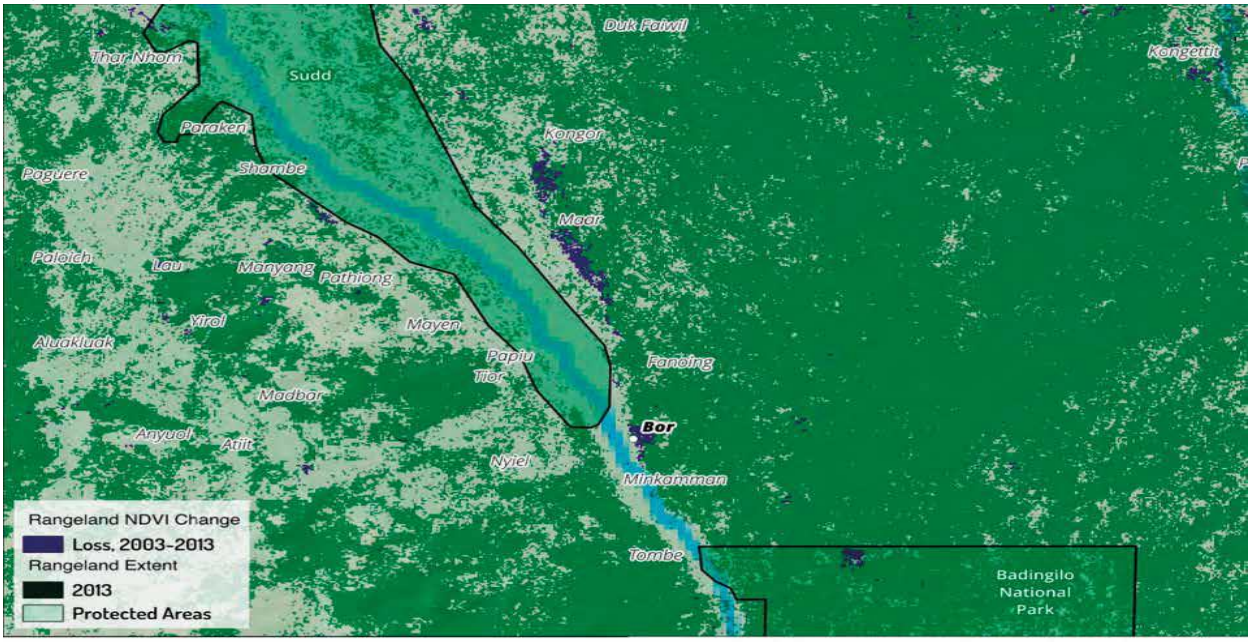


Figure 7: Rangeland Loss and Degradation near Gogrial, South Sudan, 2003 – 2013; Source: (USAID, 2014)

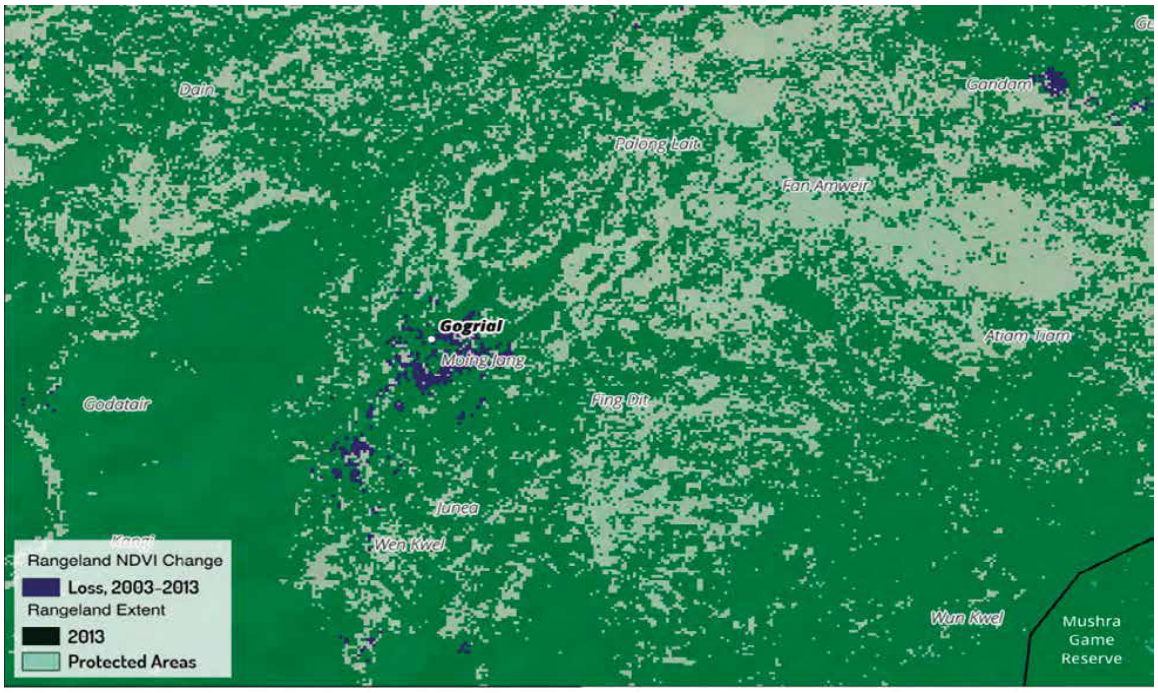
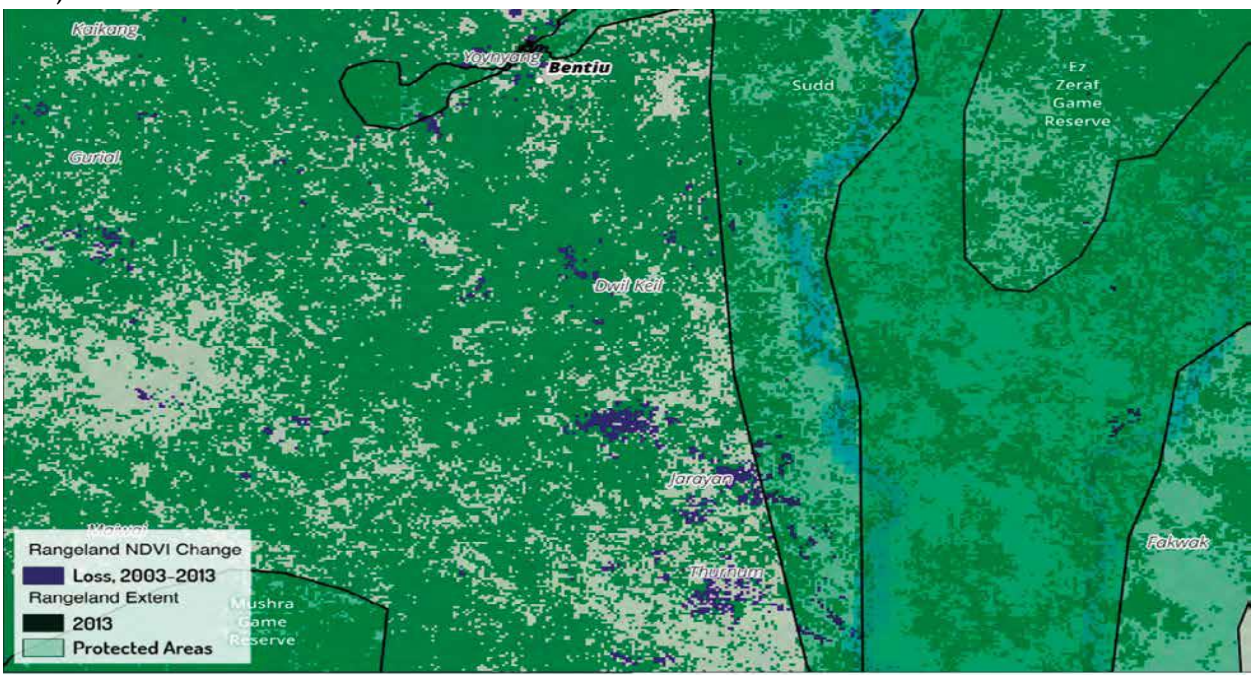


Figure 8: Rangeland Loss and Degradation near Bentiu, South Sudan, 2003-2013; Source: (USAID, 2014)

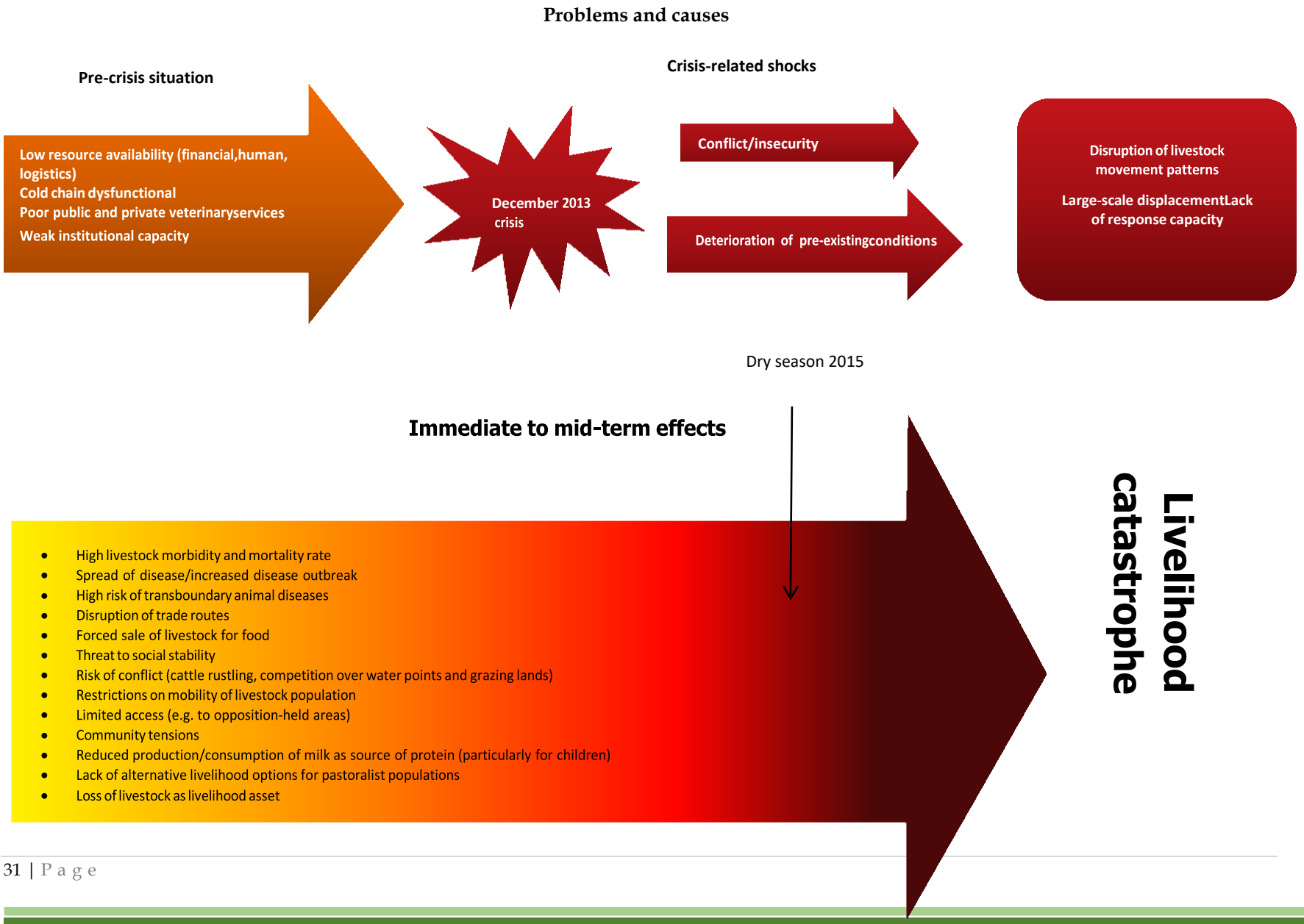


2.1.1 Conflict, Social Tensions and Access to Rangeland Resources

Apart from constraints presented by droughts and floods, livestock sector in rangelands face serious conflicts, social tensions and restriction from normal transhumance movement of livestock. The capacity of formal and informal institutions to promote peaceful interaction and dialogue between host communities, internally displaced persons and migrating herders is limited.

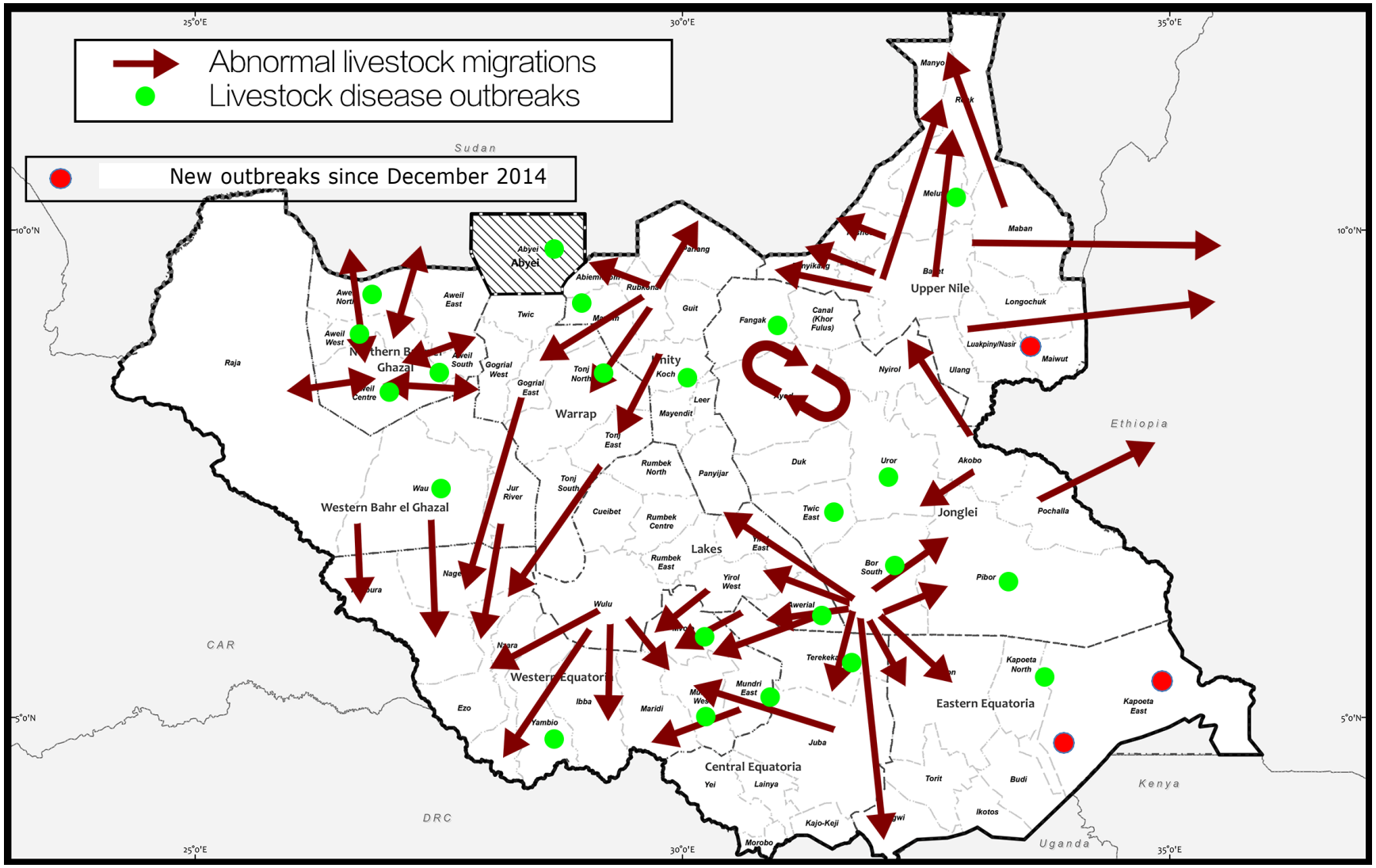
In addition, the population displacement and livestock movement into new areas affect social dynamics. Encroachment of migrating livestock on crop farms combined with the spread of arms to fuel local conflicts can already be seen in Lakes, Western Equatoria and Warrap States as well as in Nimule, Eastern Equatoria State. Access to land is structurally linked to tribal affiliation and local power. While non-tribe members can be granted temporary right of utilization of lands and are in due time incorporated into the tribal system, inflow of large tribal groups generates problems. These problems are not limited to the availability of arable land, but also relate to power relations in the area and to concerns about the future alienation of land. For this reason, the escalation of local-level conflicts over access to natural resources can be fueled by tribal/political allegiances of the land users and wider tribal politics at the national level. **Figure 9** shows the rangeland crisis cause effect relationship in rangelands in year 2015.

Figure 9: Rangelands Crisis Cause Effect Relationship in Rangelands in Year 2015.



The current movement of livestock into different states and the concentration and intermingling of large numbers of livestock in confined areas is already having devastating effects on rangeland resources and animal health. During the period from September to December 2014, there were 22 reports of livestock disease outbreak from the ten states that constitute the Republic of South Sudan and the disputed Administrative Area of Abyei (see **Figure 10** below).

Figure 10: Livestock Movements and Disease Outbreaks in South Sudan in 2014 and Early 2015 – *Source: FAO, 2015*



From **Figure 10** above, it is evident that large-scale livestock migration has already taken place in the country from the conflict-affected states into different states of Greater Equatoria, where rain-fed cultivation is the year-round livelihood activity. In Eastern Equatoria, movement of livestock has been concentrated in the Madi corridor of Magwi where more than 250 000 head of cattle moved into the eastern part of the county in April 2014. In Western Equatoria, a conservative estimate of cattle camps in the different parts of the state in April 2014 was about 95 camps.

In Awerial county, FAO and partners estimated, during an investigation of a disease outbreak in October 2014, the local and migrating herds from other states to reach some 750 000 cattle and more than 1 000 000 sheep/goats. In Kuernyang payam of Fangak county, a FAO assessment mission November 2014 estimated around 4 000 head of cattle.

In regard to rangelands ownership, The Transitional Constitution of the Republic of South Sudan 2011 prescribes a three-category land tenure system divided in to public land, community land, and private land. Public land means all land owned, held or otherwise acquired by any level of government. This classification includes land owned by Bomas, Counties, States and federal government or administration and all land that is not otherwise designated as community or private. Hence there is no such thing as no-mans' land in South Sudan because land unclaimed by an individual or community belongs to the government by default. Community land includes all lands traditionally and historically held or used by local communities or their members. This category could include communal grazing lands for animals, hunting grounds, or locations of traditional sacrifices and worship.

On the other hand, private land includes registered land held by any person under leasehold tenure, investment land acquired under lease from the government, and any other land designated as private land in accordance with the law. The assumption implicit in this framework is that all investment land (Land for businesses) is acquired from the government through the leasehold tenure.

2.2 Current Policies and Laws Governing Natural Resources

Since the signing of the Comprehensive Peace Agreement (CPA 2005) and the subsequent independence on 9 July 2011, the Government of the Republic of South Sudan has developed laws and policies governing Natural Resources (land, water, forestry, etc.) along with establishment of institutions aimed at restoring peace and stability. Institutions such as the Statutory and Customary Courts and the Lands Commissions were established at the three levels of governments to respond to legal matters including disputes over water point, grazing land, wildlife, fishing points and forestry which are common in Central Equitoria State (CES).

Below are some of the reviewed existing laws, policies and acts on Natural Resource Management.

2.2.1 The Transitional Constitution of the Republic of South Sudan, 2011

Independent in 2011, the National Legislative Assembly of the Re1public of South Sudan amended the Interim Constitution of Southern Sudan from 2005. It was adopted and thereafter referred to as the "Transitional Constitution of the Republic of South Sudan, 2011," and shall be the supreme law by which the independent and sovereign South Sudan shall be governed during the Transitional Period, and shall undertake to abide by, respect and defend it. Under Article 14 "The Environment" the Transitional Constitution states in part (1) that every person or community shall have the right to a clean and healthy environment. While in part (2) it states that every person shall have the obligation to protect the environment for the benefit of present and future generations. And, in part (3) every person shall have the right to have the environment protected for the benefit of present and future generations, through appropriate legislative action and other measures that: (a) prevent pollution and ecological degradation; (b) promote conservation; and (c) secure ecologically sustainable development and use of natural resources while promoting rational economic and social development so as to protect genetic stability and bio-diversity. Also, in Part (4) it states that all levels of government shall develop energy policies that will ensure that the basic needs of the people are met while protecting and preserving the environment. Therefore, this RMSAP 2022-2031 is in sync with the expectations of the current constitution of the Republic of South Sudan.

2.2.2 National Biodiversity Policies and Legislation

2.2.2.1 Pending Legislation and Policies

Many of the key national legislations for biodiversity management in South Sudan are still in the form of Bills before the National Legislative Assembly. The Bills include: ***The National Environmental Protection Bill 2013***; ***The Draft Wildlife Bill 2013*** and the ***Wildlife Conservation and Protected Areas Bill 2015***; ***The Water Bill 2013***; and the ***Forests Bill 2009***. The Draft Policies include: ***The Draft National Environment Policy 2013***; and the ***South Sudan Wildlife Conservation and Protected Area Policy (Draft of June 2012).***

The Environmental Protection Bill 2013 is a key pending legislation that aims to protect the Environment in South Sudan and to promote ecologically sustainable development that improves the quality of life. It grants the right to a decent environment to every person and the concomitant right to bring an action to enforce that right if it is threatened as a result of an activity or an omission. The Bill if enacted into law will empower the Ministry of Environment and Forestry to supervise and co-ordinate all matters relating to the environment and to be the

principal Instrument of Government in the implementation of all policies relating to the environment including biodiversity. This will include stock taking of the natural resources in the country and their utilization and conservation; examining land use patterns to determine their impact on the quality and quantity of natural resources, and; carrying out surveys which will assist in the proper management and conservation of the environment. This means establishing an Environmental Information Centre (EIC) that will undertake an inventory of South Sudan's biological diversity and ecosystems as a priority for the Ministry. The Wildlife Conservation and Protected Areas Bill 2015: The Bill covers all matters concerned with Wildlife Conservation, the establishment and management of protected areas and the sustainable management and conservation of South Sudan's natural heritage and wildlife for the benefit of its citizens.

The Draft Wildlife Bill 2013 establishes an autonomous South Sudan Wildlife Service (SSWS) as proposed by the Constitution with a board of trustees and headed by a Director-General both appointed by the President. One of its key functions will be coordination with other relevant authorities of all issues affecting wildlife management including issues of security, infrastructure, private investment and land use planning. This will be done by ensuring the enforcement and implementation of the law with respect to the use of wildlife, the management of protected areas and other uses of natural resources.

The Forests Bill 2009 is meant to operationalize the Forestry Policy covering all matters concerned with all forests and woodlands and all forest reserves in the country. The Forests Bill provides for a governance structure for all the forests in the country, national sustainable forest management standards, certification systems and schemes, and private and voluntary standards; procedures and decision-making processes, and; complaint and appeal mechanisms.

The Water Bill 2013: provides for the protection of water sources from pollution, erosion or any other adverse effects by creating Protected Zones within a catchment draining to, or above any water facility forming part of a water supply or any catchment, lake, reservoir, aquifer, wetland, spring, or any other source of water (section 34). The Bill aims to develop procedures for prioritizing allocation of water resources for different social, economic and environmental uses, efficiency, system reliability and environmental sustainability principles. It also aims to conserve available water resources, to manage water quality and to prevent pollution of ground and surface waters; manage floods and droughts and mitigate water-related disasters, and; establish appropriate management structures including mechanisms for inter-sectoral coordination and stakeholder participation.

The goal of the Draft National Environment Policy 2013 is to ensure the protection, conservation and sustainable use of the natural resources of South Sudan without compromising the tenets of inter-generational equity. This includes maintaining the balance between the environment and development needs through sustainable use of the natural

resource base; creating public awareness for the importance of protecting the environment; and providing the basis for formulation of biodiversity and ecosystem protection, and management policies, laws and guidelines.

The South Sudan Wildlife Conservation and Protected Area Policy (Draft of June 2012) envisions an effective and professional Wildlife Service that will guide the sustainable management and utilization of natural resources, including land, water, fauna and flora for the benefit and enjoyment of the people of South Sudan. It provides for the formulation of legal frameworks to rationalize the protected area system, wildlife utilization and benefit sharing.

2.2.2.2 Assented Legislation and Policies

The Land Policy: According to the CPA peace process, Sudan and South Sudan recognized the need to develop land policy, legislation, functioning institutions and supporting services related to land resources. The CPA mandated the establishment of the National Land Commission (NLC) and the South Sudan Land Commission (SSLC) to develop land policies and draft legislation in order to clarify and strengthen land administrative systems and the rights of landholders. The Transitional Constitution of 2011 states that all land in South Sudan is owned by the people of South Sudan and charges the Government with regulating land tenure, land use and exercise of rights to land. The constitution classifies land as public, community or private land, and requires the GRSS to recognize customary land rights when exercising the Government's rights to land and other natural resources. The constitution does not clarify the extent to which customary rights can limit government's rights but does require that all levels of government incorporate customary rights and practices into their policies and strategies.

Based on the above, ***the Land Act (2009), the Local Government Act (2009)*** and ***the Investment Promotion Act (2009)*** were developed to establish the institutions and mechanisms of governance that would address pressure points and fill vacuums created by conflict, uneven development and lack of transparency and accountability in resource governance (GRSS 2011).

The three laws mentioned above established the fundamental framework for the fair and transparent administration of land rights in South Sudan. For example, the Land Act regulates land tenure and equally recognizes rights to customary, public and private tenure; the Local Government Act defines primary responsibilities of local government and traditional government authorities in the regulation and management of land, which includes charging customary institutions with particular responsibilities for administering community land rights. On the other hand; the Investment Promotion Act establishes procedures for facilitating access to land for private investment, including by foreign investors, in ways that balance the interests of both current right holders and investors. Although a framework has been developed, government officials have a poor understanding of the laws and lack the capacity to interpret

and carry them out. There is also a lack of awareness by the population, which further impedes progress (GRSS 2011).

The SSLC also developed a draft Land Policy that strengthens the rights of land holders, communities and citizens within the new framework and guidelines established by the Land Act (2009). It emphasizes the importance of access to land as a "social right," a feature of many customary land tenure systems that allows community members to access land irrespective of wealth or economic status (Deng and Mittal 2011).

The Customary laws have governed the use of land in South Sudan for centuries, with each ethnic group applying its own laws relating to land and land rights within its own territory. Land laws enacted by governments in Khartoum throughout the colonial and post-colonial periods do not appear to have seriously affected customary tenure systems in the south. Thus, overall, customary laws and practices remain largely intact. Although they vary from community to community, customary institutions and traditional mechanisms continue to govern the access, use and allocation of land (USAID 2010).

In line with the above, some of the highlights of the Land Act, 2009 of South Sudan are as follows: Section 58 states that community Land may be registered in the name of: (i) A Community, or a family, in accordance with the customary practice applicable; (ii) A clan or a family in accordance with the customary practices applicable; and (iii) A community association and a traditional leader in trust for the community and with the consent of the members of the community'. Section 63 provides that: Activities to be carried out by the investors on communal land shall reflect an important interest of the community or people living in the locality; the project shall contribute economically and socially to the development of the local community; the concerned national and state government institutions including investment authorities will consult with the communities concerned on any decision related to the land that the project intends to acquire and the view of the community will be duly taken into consideration.

Section 69 provides that: 'Individuals, communities and organizations will protect land in order to keep it in a productive condition in which problems such as land degradation are adequately managed in accordance with the provisions of Article 44 of the Interim Constitution of South Sudan (ICSS). Consultation with the local authorities, traditional leaders and other levels of the Government in South Sudan is thus very important. During this process all the stakeholders have a role to play.

The Water Policy: In December 2007, the GRSS adopted the South Sudan Water Policy, which states that access to sufficient water of an acceptable quality and quantity to meet basic human needs is a human right. The policy provides that: the right to water shall be given the highest priority in the development of water resources; rural communities shall participate in the development and management of water schemes; and the involvement of NGOs and the private

sector in water projects shall be encouraged. Apart from customary laws governing access to grazing and fishing grounds for communal use at a local level, currently there is no formal system for allocating water resources for different social and economic purposes in the country.

Forestry Law and Policy: The current legal framework for forest management in South Sudan consists of: the Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS), 2018, Transitional Constitution of the Republic of South Sudan, 2011; a number of laws at the national level enacted prior to the signing of the CPA (including the Forestry Commission Act) (2004), the Forestry Training Centre Act (2004) and the Timber Utilization and Management Act (2003); ministerial decrees and orders; and customary law. In Forestry Act 1986 (Laws of the Sudan): 'All gazetted National Forestry Reserve and those that are in the pipeline shall be directly owned and managed by the National Forestry Corporation of the Government of Sudan. This act proved to be weak and no longer reflect the current reality in South Sudan because the law is outdated and geared toward a "command and control" approach, with little reliance on civil society as a partner in forest resource management and biodiversity conservation. Authorities with jurisdiction to manage and protect biological resources (including forest resources) require an up-to-date legal framework to enforce and prosecute illegal activities (GRSS 2011c; GRSS 2010; TerrAfrica 2010; USAID 2007).

In October 2007, the Ministry of Agriculture and Forestry (MAF) produced a policy statement document that reads:

- Under Section 5.3.2 Number 3, the MAF will undertake and build-up databases on plantation and natural forestry by conducting forestry surveys, inventories, and gazette new forest lands; and
- Under Section 5.3.2 Number 4, GRSS will assume responsibility of all National Reserve Forests in South Sudan and will ensure that they are protected and managed sustainably.

However, some progress has been made so far. In August 2010, the GRSS approved a new Forest Policy that provides guiding principles and strategies to address sector constraints and challenges to ensure the optimal contribution of forestry resources towards sustainable growth and development of the country. Community land is defined by the Land Act (2009) to include forestland that has been held, managed or used by a specific community. Other related acts to forestry management include: ***South Sudan Financial Management and Accountability Act***, which was passed in December 2011, with the aim of strengthening the process of accountability and ensuring transparency in resource management.

The Environment Protection Act 2001: The current legislation for Environment Protection is the pre-independence Environment Protection Act 2001. This is the principal legislative policy

framework of former Sudan that provides uniform rules of substance and procedures on protection of the environment and use of natural resources. The Act also provides definitions and clarifications regarding natural resource management, pollutants and sources of pollution, and endorses the 'Polluter Pays' principle. Section 4 sets forth the environmental objectives of the Sudan as follows:

- Protection and preservation of the natural environment, or the basic elements and the social and cultural systems thereof, in achievement of safety and sustainable development for the benefit of future generations;
- Promoting the environment and sustainable use of the natural resources, for the purpose of sustainable development;
- Linking the issues of environment and development, ascertaining the responsibility of the competent authority for protection of the environment, and promoting the need for achieving such protection; and
- Establishing the role of the competent authority and the organs belonging thereto and enforcing their roles.

Recently the Ministry of Environment, GRSS has developed a draft Environmental Policy and Environmental Bill (2010) that, if enacted, will provide guidance on sustainable management of environmental resources.

Wildlife Conservation and National Parks Act, 2003: The current legislation for Wildlife Conservation and Tourism is the pre-independence Wildlife Conservation and National Parks Act 2003. GRSS has maintained pre-CPA Acts that provided for the protection of wildlife and associated habitat in designated National Park Areas. The following are some of the extracts from the acts:

Section 14 states that 'except with the written authorization of the Director General, of which authorization shall be given only in the interest of the proper management and development of the national park: it is unlawful to;

- Obstruct, divert or pollute any river, pool, lake or other points of water; and
- Perform any act or engage in any other activity likely to destroy, endanger or disturb wildlife in the national park or to destroy shelter or alter its natural habitat and environment.

Section 15 states that: "except with the written authorization of the Director General or officer in charge of the national park concerned, and subject to the conditions of any such authorization, no person shall bring into the national park any weapon, ammunitions, explosives, traps, snare or poison, or be in possession of any such articles within the National Park".

Local Government Act 2009: This Act stipulates the following:

- Section 19 (2) States that 'the traditional leaders shall represent their people in developing regulations on natural resource management.
- Section 19 (3) states that 'The Boma shall be the main domain of the traditional authority where traditional leaders perform their administration and customary function.
- Section 19 (4) states that 'in the Town Council, the traditional authority shall perform its administrative and customary functions within the quarter council, and the local government act 2009 also defines the traditional authority, customary law and the authority of traditional chiefs in South Sudan.
- Article 174 (1) (ICSS) sates that 'the institution status and role of traditional authority, according to customary law, are recognized under this Constitution' and 'The Legislation of the states shall provide for the role of traditional authority as an institution at local government level on matters affecting local communities'.
- Article 174 (3) (ICSS): states that 'The courts shall apply customary laws to the Constitution and the law'.
- Article 175 (2) (ICSS) states that 'Legislation at the South Sudan and States level shall provide for the establishment, composition, function and duties of the Councils of Traditional Authority Leaders'.
- Article 180 (4) (ICSS) states that 'All lands traditionally and historically held or used by local communities or their members shall be defined, managed and protected by law in South Sudan'.

Fisheries Policy: The Fisheries Policy (2006 – 2011) was developed after the signing of the CPA by the MARF to provide guidelines, support the fishing structures to better coordinate and harmonize the sector mandate and to implement the plan of action to achieve sustainable development. However, due to inadequate institutional capacity and limited financial resources the policy has not been fully implemented.

Minerals Law and Policy: The Interim constitution of South Sudan states that all levels of government will protect and ensure the sustainable management and utilization of minerals, including oil. GRSS recently signed the Petroleum Act (2012). The Act states that ownership of petroleum is vested in the people and to be managed by the Government for their benefit. The Act also emphasizes maximum petroleum recovery within a framework that seeks to ensure the safety, security and protection of the environment, and requires transparency, accountability and ethical behavior on the part of both licensees and the Government (SSIS 2012).

The Mining Act of 2012 provides a framework for the management of the mining sector consistent with international standards, including licensing, environmental protection

guidelines and the use of technology to ensure as much mineral resources as possible are recovered from the ground. It also provides for Community Development Agreements for mining licenses and environment and social provisions.

The Petroleum Act 2012: The Petroleum Act is relevant because of the increasing adverse environmental impacts associated with petroleum development in the country on the one hand, and the potential to use funds generated from petroleum sales and taxes for biodiversity management on the other hand: Oil exploration is carried out mainly in the central flood plains of Jonglei, Lakes and Upper Nile States which are also endowed with vast natural resources including forests, livestock, wildlife and aquatic resources. The Petroleum Act provides that Social and Environmental Impact Assessments (SEIAs) to be undertaken by that the oil contractor or licensee in compliance with international standards to determine any present environmental and social damage, establish the costs of repair and compensation and determine any other areas of concern.

While the petroleum industry in the country has expressed a desire for environmental compliance, the Ministry of Petroleum and Mining is still developing policies and measures to safeguard the environment and govern the oil and mining sector to include Environmental Impact Assessments (EIAs), environmental sensitivity atlas, multi-institutional monitoring, hazardous waste management, restoration of drilling and campsites, and oil spill contingency plans.

2.3 Institutional Framework

2.3.1 Government Structure

The Government of South Sudan is a three-tier structure composed of the Executive, the Judiciary and the Legislature. The Transitional Constitution outlines the composition of the Executive and the powers and competencies of the Executive. Article 97 to Article 107 of the Transitional Constitution describes the President of South Sudan in all pertinent aspects ranging from eligibility for the office, nomination, tenure of office, functions, immunity, to the appointment of the Vice President, as well as the Presidential Advisors.

Article 108 to Article 121 of the Transitional Constitution describes the South Sudan Council of Ministers. The National Legislature is composed of the National Legislative Assembly and the Council of States. The National Legislative Assembly has a total of 322 members. The Council of States has a total of 50 members. The establishment, composition, powers and functions of the South Sudan legislature are described from Articles 54 to 94 of the Transitional Constitution of South Sudan.

Article 122 to Article 134 of the Transitional Constitution of South Sudan describes the judiciary of South Sudan. The Chief Justice, as the head of the Judiciary, shall be responsible for the administration of the Judiciary. The Judiciary shall be structured as follows: (a) the Supreme Court; (b) Courts of Appeal; (c) High Courts; (d) County Courts; and (e) other courts or tribunals as deemed necessary to be established in accordance with the provisions of this Constitution and the law. The Judiciary shall be independent of the executive and the legislature.

According to the Transitional Constitution, Article 47 and 166; Article 47 South Sudan shall have a decentralized government system with the following levels: (i) the National level which shall exercise authority in respect of the people and states in South Sudan; (ii) the State level which shall exercise authority within a state and render public service through the level closest to the people; and the Local Government level within the state, which shall be the closest level to the people.

The Local Government shall comprise of three tiers of government; the County, City, Municipal and Town Councils; the Payam and Block Councils as coordinative administrative units; and the Boma and Quarter Councils as the basic administrative units. Rural Councils, which are councils established in rural settlements, or in areas whose economies are predominantly agricultural, pastoral or mixed with a strong base of traditional administration and cultural practices, which constitutes a council. The County Council, a corporate body, is subdivided into Payam and Boma Councils. Urban Councils which are established in urban or cosmopolitan areas where more than 60 percent of economic activities are non-agricultural with considerable levels of urban infrastructure and public utilities. Urban Councils are classified as: City Councils, Municipal Councils, and Town Councils. Industrial Councils are councils established in industrial areas which may have either or both characteristics of an Urban or Rural Council.

2.3.2 Traditional Authorities

Traditional leadership which is rooted in the culture, customs and history of the people, is a major aspect of Governance in South Sudan. Article 174 of the Constitution provides for the institution of Traditional Authority. Section 113 of the Local Government Act 2009 states the types of Traditional Authority in South Sudan which are kingdoms and chiefdoms. Section 115 outlines the composition of decentralized chiefdoms inclusive of Paramount Chief, Head Chief and Executive Chief. Traditional authorities still play an important role in South Sudanese society and should not be overlooked. The traditional system often has three levels: local chiefs, paramount chiefs and king/sultan. Traditional authorities play a role in various fields such as social-related legal issues. They also enforce traditional regulations on resource use. Examples include the obligation to return any small fish caught to the water, regulations for the use of forest fires, and the protection of certain wildlife and tree species such as the ostrich and the

Balanites tree. Traditional authorities collect fines from trespassers and taxes from resource users, such as pastoralists using their territory for livestock grazing.

2.3.3 Private Sector

International and national private investors and entrepreneurs form an essential developmental pillar in South Sudan's economy and future prospects. The wealth of natural resources in the country has attracted the attention of an array of sectors, such as oil, agriculture, construction, hydropower and tourism. More will certainly follow, considering the growing global demand for resources. Generally, investors and entrepreneurs focus on the break-even of their investments and the generation of profits in relation to financial risks, rather than on sustainability. Investors and entrepreneurs usually target maximum profit and expansion of their own activity. Often, they are not concerned about the costs of their business borne by other sectors or individuals. This is considered to be the responsibility of the Government. Mechanisms to promote responsible entrepreneurship such as certification and codes of conduct, which urge companies to comply with social and environmental norms, have not yet been developed for the private sector of South Sudan.

2.3.4 Local NGOs and CBOs

A few non-governmental organizations operating in South Sudan participated in the South Sudan RMSAP 2022-2031 development process. They included South Sudan Agro-pastoral Union, Community Animal Health Workers Agency for Development (CAHWAD), Community-based Animal Health Workers (CAHWs) CBOs, LCAD South Sudan, Plan international, AVSI foundation; CARE International and FAO South Sudan among others. In general, national/local NGOs in South Sudan have limited capacity to set conservation action, conduct research in biological conservation, and develop and implement awareness on biodiversity conservation messages. In many cases, the NGOs rely on messages developed by international NGOs and funding partners. A survey conducted by Birdlife International with support from the Critical Ecosystem Partnership Fund (CEPF) for Eritrea and South Sudan found that there were considerable capacity needs to enable NGOs to support biodiversity conservation and natural resource management. These gaps were in the areas of; conservation project design and management, human resource development, sustainability strategy and diversification of financial resources, monitoring and evaluation, and networking and communication (Birdlife International 2015).

2.3.5 International NGOs and Donors

A large spectrum of international organizations (both inter-governmental and non-governmental) are present in South Sudan, many of whom started their operations following

the signing of the CPA or even more recently. Presently, many service gaps are filled by these organizations. These organizations focus very much on meeting primary needs such as food, health and shelter of IDPs, as well as on capacity building to enable the different government agencies to fulfil their tasks. The risk of emphasizing capacity building without assuring a clear link with policy implementation and service delivery is that all government staff's capacity is absorbed by learning rather than doing. Moreover, coordination is required to avoid conflicting approaches and duplication of work.

2.3.6 Livestock Keepers

Livestock-rearing may be categorized according to three systems: (a) nomadic, based largely on herding of cattle, camels, sheep and goats in the semi-arid north (e.g. Misseriya); (b) seminomadic agro-pastoralism, combining the herding of cattle and some sheep with cultivation (Dinka, Nuer); and (c) a sedentary system, where cattle and small livestock are reared in close proximity to villages (UNEP 2007). The number of cattle is high, and rangelands are considered to be overstocked. The production of livestock products (milk, butter, meat and hides), however, is low. Livestock is mainly perceived as a store of value by many livestock keepers, particularly the nomadic and seminomadic.

2.3.7 Crop Farmers or Cultivators

Most of the rural population practice cultivation. In the northern part of the country, sorghum, sesame and groundnuts are the principal crops. Many farmers have little access to inputs such as improved seeds, fertilizer and pesticides. Micro credit systems have not yet been developed. Farmers have reported they are suffering from a changing climate. In the last decade, the rainy season has started late and for several years the planting of crops has begun one to two months later than in the past. In addition, rainy seasons also tend to be shorter and sometimes interrupted, which results in an early harvest before crops are fully grown. Adapting to climate change could be achieved by establishing small dams to improve irrigation and by promoting animal traction to prepare land for cultivation, which would enable a quicker response to rainfall than if it is done by manual labor.

2.3.8 Fishers and Fishing Communities

Fishing is not very developed in South Sudan and it is not associated to specific tribes. Generally, it is believed that fish as a resource is underutilized in South Sudan. Simple fishing techniques are used, such as gillnets, throw nets and hooks. Women in the north are using baskets to catch fish in stagnating pools. Fish traps and related fish dams which are being used in neighboring countries are not being used in South Sudan. On the Nile and in the Sudd wetlands fishers from Sudan operate with fast boats. Fishers are not licensed and nor taxed, but

fish retailers are taxed when selling fish on the market. In Nyamlel, there is a fishers' association which has established a social security system based on the regular contributions of members[13].

2.4 SWOT Analysis

This section provides a clear and well synthesized summary of Strengths, Weaknesses, Opportunities and Threats (SWOT) to Sustainable Rangeland Management (SRM) in South Sudan. The SWOT Assessment was part of the wider Situation Analysis (SA) which in general focused on the challenges facing rangelands in the region, existing interventions and opportunities, and priority interventions to achieve Sustainable Rangeland Management in South Sudan. Lastly, conclusions drawn from the identified challenges, existing interventions and opportunities did assist the team to identify strategic issues (strategic priority areas of interventions) and specific priority actions for South Sudan and hence developed a detailed Rangeland Strategy and Action Plan (RMSAP) for the country. The RMSAP is expected to enable researchers, policy makers, development practitioners, pastoralist and agro-pastoralist in South Sudan to address identified challenges and leverage on identified opportunities and strengths.

Table 3 below is a summarized presentation and population of the information on SWOT. This information, as explained earlier, was from a participatory process and detailed synthesis of literature and information from stakeholders summarized in tabular format.

[13] Republic of South Sudan National Biodiversity Strategy and Action Plan (2018-2027)

Table 3: Synthesized Summary of Strengths, Weaknesses, Opportunities and Threats (SWOT) to Sustainable Rangeland Management (SRM) in South Sudan.

	INTERNAL	EXTERNAL
POSITIVE	•Existing interdisciplinary approaches and working arrangements in the country. •Improving accounting for nature in the country. •SRM being practiced as a holistic approach to rangeland management in the country. •Availability of existing advocacy and communication tools and channels in the country on SRM. •Increasing societal engagement in SRM. •SRM is promoting equity in natural resources allocation. •SRM is promoting reconnection of people to nature. •Existing of robust and applicable indigenous knowledge and practices on rangeland resources development and management. •Work being done currently on SRM various components which are at different scale of execution. **STRENGTHS**	•Possibility of Sustainable Rangeland Management (SRM) alignment with existing and new policies, laws and strategies. •Possibility of SRM alignment with existing and new tools and methods. •Increased environmental and climate change awareness in the country. •Increased operationalization of sustainability in the country. •Increased demand for ecosystems and biodiversity management in the country. •Positive interests of societal and economic actors. •Increased policy and human right awareness. •Increased global, regional and country climate finance flow. •Technological and innovation advancements. •Increased institutionalization of nature's values. **OPPORTUNITIES**
NEGATIVE	**WEAKNESSES** •Declining range condition and productivity due to injudicious use and land fragmentation. •Poor regulation of access to rangeland resources due to weak governance institutions. •Insecure land rights and tenure. •Poor knowledge management system on SRM. •Incomplete rangeland management and scientific knowledge in the country. •Inconsistent application of SRM concepts in various parts of the country's rangelands. •Continued disregarding of the intrinsic value of nature. •Ambiguous language on rangeland management. •Overemphasis on monetary value of rangelands. •Large resources needed to implement SRM. •SRM is mainly understood by specialists and majority of pastoralist and agro-pastoralists do not understand the new rangeland management models. •SRM poorly understood in the country. •SRM is large scale-dependence of outcomes. •There is need for better tools to implement SRM.	**THREATS** •Inadequate policy, legal, institutional and organizational framework. •Restricted cross-border and inter-community herd movement. •Inadequate research, extension and human resource capacity to support implementation of sustainable rangeland management (SRM) programmes. •Low investment in sustainable rangeland management (SRM). •Frequent droughts, floods and climate change •Resistance to change environmental and biodiversity management practices. •Difficulty in interdisciplinary working for SRM. •Insufficient funding for implementation of SRM. •Loss of political interest in SRM. •Lack of institutional and organization capabilities. •Competing approaches to SRM. •Lack of interest from researchers, trainers and extension personnel. •Misuse of environmental tools. •Lack of awareness across general public on SRM. •Weak environmental and biodiversity ethics view point.

2.5 Justification for the Rangeland Strategy and Action Plan for South Sudan

South Sudan has immense natural resources within its rangelands that remain virtually untapped. This provides potential for the Government to address pressing developmental challenges if well and sustainably managed. Given the fact that the country has experienced more conflict than peace since Sudan attained independence in 1956, the country's rangeland natural resources are under threat from a number of sources, man-made and natural. A well formulated National Rangelands Management Strategy and Action Plan (RMSAP) would effectively mitigate and prevent the following threats to rangeland ecosystems and biodiversity.

2.5.1 Traditional Barriers to Effective Rangeland Resources Management

1. **Poor forest governance and lack of agreement regarding ownership of forest resources**: Forest resources were plundered by armies from the north and, later, they were then exploited to support war efforts. Through the war periods, there was total disregard for good forest governance. Although the new government has made commendable efforts to restore order in exploitation of forest resources throughout the country, illegal exploitation is still common. In some cases, forests are still being destroyed by militia groups. Under the decentralization system of governance, overlaps exist among central government institutions in the states. Illegal forest cutting is still on-going despite the end of the war. It is usually done by individuals and some groups under the eyes of the Government agencies are responsible.
2. **Weak and inadequate coordination mechanisms between the central government and state governments:** Weak and inadequate coordination mechanisms between South Sudan Government and the State Governments of programme implementation, resource allocation, and accountability are significant challenges to institutional capacity and forest governance. The State Director General of Agriculture who is responsible for forestry services, reports only to the State Minister of Agriculture without a copy to the South Sudan Director General of Forestry. Under the decentralized system of governance, overlaps exist among responsible officers at the centre and in the States. Communication and accountability between South Sudan institution and the State institutions also constitute another challenge. For example, the Minister of Agriculture at the State level is answerable to the state Governor who reports directly to the President. Some forestry programmes are implemented by NGOs and local communities with the financial support of development partners, but the linkage and coordination between the Ministry of Agriculture and Forestry and the former, are not well integrated. In addition, the private sector also participates in forestry industry activities through establishment of plantations, timber processing and sales. However, poor communication and inadequate consultations on levies and taxes among stakeholders have a negative impact on forest management and investment.

Prior to the CPA, ownership and management of plantation forest resources were clearly defined. The gazetted natural forests were owned by both the Central Government and Provincial Governments. By 2007, the Forest Policy Framework for South Sudan provided that Central Forest Reserves (CFRs) were to be owned by the Central Government (GRSS), while Provincial Forest Reserves (PFRs) were to be owned by the State Governments. Currently, RSS has taken ownership of CFRs on behalf of all the people of South Sudan and manage them in partnership with State Governments and other stakeholders. The State Governments will take ownership of PFRs on behalf of all people of the State.

3. **Forest Fires:** Traditional use of bush fires is a major threat to forests and tree growing throughout South Sudan. The fires are used for land preparation under shifting cultivation, for hunting, and for rejuvenation of grazing areas. Forest fires also originate from lightning, smokers, and honey collectors. Sometimes, communities deliberately set forest fires out of discontent with policies and regulations. Prevention and control of bush fires therefore requires full engagement of local communities.
4. **Charcoal and fuel wood**: Fuel wood and charcoal make up approximately 80 percent of the country's energy supply due to a lack of alternative sources of energy such as electricity, wind and solar power, and gas. As a result, charcoal making is an attractive economic activity as more people become involved in charcoal production, accelerating the depletion of trees. There is also growing demand for fuel wood for brick making.
5. **Limited investment and technology**: Forest-based industries (saw milling, wood-based panels, furniture, and joinery manufacture) are significant sources of off-farm employment. Consequently, South Sudan's forestry sector can support a significant and sustainable wealth creating export industry if well managed. Currently, investment in the forestry and timber trade is limited. Major constraints limiting investment in the forestry industry include lack of access to capital and high taxation rates, fees, and transport charges. It is estimated that timber-related taxes, fees, and transport costs constitute 71 percent of the total costs of production and processing of timber, and teak.
6. **Linkages with Land**: Administration and management of the forestry sector require coordination with the policies, laws, and institutions governing land. The 2009 Land Act provides for community lands to be designated for, among other reasons, such as forestry purposes. Land ownership in the new country of South Sudan is still to be resolved, and it calls for fresh common understanding between RSS, State Governments, local governments, and communities, particularly as it relates to CFRs and SFRs.
7. **Gender inequality**: While degradation of the forest ecosystem has had an impact on communities in general, women have suffered more than their male counterparts. In traditional African households, women are usually the primary food providers for their families. Women fetch forest products such as firewood, leafy vegetables, fruits, roots, and tubers. Despite their critical role in the management of natural resources, women have limited property rights that ensure their access to land and forests.
8. **Extended periods of war promoted illegal activities**: South Sudan has experienced more than 40 years of war between 1972-1955 and 2005-1983, periods of great struggle during

which significant shifts in sources of livelihoods occurred. Civilian communities and combatants alike fed on wildlife and other natural resources for survival, which in several areas resulted in uncontrolled hunting and over-exploitation during the extended periods of war. Many of the wildlife personnel fought alongside the army while others sought refuge. During this period, there was lack of conservation law enforcement in government-controlled areas while in areas controlled by SPLA there was some law enforcement.

9. **Deterioration of management capacity:** The Government body charged with the responsibility for wildlife management deteriorated during the war, which in effect meant that there was no protected area management. Furthermore, the little existing infrastructure that was there before the war in wildlife protected areas was left in ruins. Conservation personnel were not trained and there was a total lack of conservation education programmes. Management capacity has slowly started to recover in the six years since the CPA but remains in its early stages of recovery. There is need for strong support to improve this management capacity and development of management plans for the protected areas.
10. **Habitat destruction and fragmentation:** Habitat destruction and fragmentation from farming and deforestation is the root cause of most biodiversity loss in South Sudan. The intensification of shifting agriculture is causing large-scale land use changes across the region particularly in the savanna. An additional issue is the impact of ongoing and planned development like creation or rehabilitation of rural trunk roads. This is of particular concern for the Jonglei state, where the new road cuts directly across the migration route of the white-eared kob.
11. **Park encroachment and degradation:** Livestock is present in most of the legally protected areas irrespective of their legal status. Keeping livestock in the parks creates competition for water and fodder, leading to land degradation through burning and overgrazing and facilitating poaching. Another risk is the confrontation between the pastoralists and poachers with the wildlife forces that may be heavily armed. In addition, the presence of livestock in the protected areas may facilitate the spread of diseases and disease vectors.
12. **Viability and rehabilitation of PAs**: The viability and condition of South Sudan's wildlife PAs needs to be assessed and where necessary, changes in the status of these areas need to be undertaken. While the current PA network is very expansive, certain PA designations and extents do not adequately protect some key wildlife areas. Some examples include the Sudd wetlands and the Boma-Badingilo-Sudd antelope migration corridors. Other areas have been entirely settled or altered by people during the intervening years of war and no longer provide significant conservation value. Yet other important areas are unprotected and should be proposed as new PAs, such as the Loelle Zone in Eastern Equatoria. Therefore, in general, MWCT needs to rationalize its wildlife PA system based on adequate assessments of the current status of different areas and management and conservation priorities.
13. **Poaching (illegal hunting) and wildlife law enforcement**: Poaching is currently widespread in the parks. Some poachers cross into the Republic of South Sudan (RSS) from the neighboring countries. The target animals range from large to medium sized mammals. The prime species are elephants targeted for bush meat and ivory while, hippos, Uganda kob,

oribi and bushbuck are targeted mainly for bush meat. Poaching is rampant due to limited wildlife law enforcement capacity, a lack of awareness of wildlife law among the public and enforcement bodies, continuing insecurity in some areas, an abundance of firearms, a history of open access wildlife use, and generally limited application of the rule of law at this point in time. In addition, a growing commercial bush meat trade represents an escalating threat to wildlife. Bringing wildlife use under control through collaboration with different enforcement bodies, including police, judiciary, and military, in coordination with neighbouring countries, which will be critical to laying the basis for sustainable management measures in South Sudan.

14. **Human-wildlife conflict:** Human-wildlife conflict is widespread in National Parks in South Sudan. The common animals in conflict with local people are mostly elephants, hippos and crocodiles. There are incidences of crocodiles killing people cattle and goats, as well as incidences of hippos and elephants raiding people's food crops, especially maize.
15. **Community participation**: Wildlife in South Sudan is found both inside and outside of PAs, especially for migratory species. During the war, communities and soldiers alike used wildlife as a source of subsistence. Communities still consider wildlife as an 'open access' or 'free for- all' resource, which inevitably results in over-exploitation. There is a need for management to account for local communities' livelihoods, cultural and economic interests and create incentives that enable conservation to take place outside of protected areas. Management strategies that address the issue of wildlife outside PAs such as community-based conservation and collaboration with state and local governments need to be developed and implemented.
16. **Land use planning**: Previously, integration of land use plans has never been carried out for South Sudan. Following independence, it is now important to consider wildlife resources in the overall land use planning process in order to maintain biodiversity of wildlife resources for the establishment of a tourism industry and the broader economic growth of the country. At present there is a range of existing and planned land allocations and natural resource concessions for activities such as petroleum development, mining, and agriculture. As wildlife resources also occur outside of PAs there is an urgent need to work together with other Government authorities, including those in extractive resource sectors as well as authorities governing land, environment, forestry and agriculture, and animal resources, to develop harmonized approaches to natural resource management that mitigate negative impacts of other sectors, particularly extractive industries. Concession arrangements will need to be harmonized with wildlife conservation requirements if sustainable wildlife management measures are to be effectively planned and implemented.
17. **Government planning and budgeting**: Policy and decision-makers need to recognize the importance of wildlife to the people and the economy of South Sudan and its financial implications. While expenditures for sectors such as health, education and defense require more attention and higher priority in budget allocation, there is a need to include the wildlife sector as one of the key sectors justifying adequate budget allocations in order for

conservation activities to be undertaken. A well-protected wildlife resource is essential for developing the eco-tourism sector.

18. **Conservation financing**: Funding based on annual budgets presented to the Ministry of Finance is inadequate and not sustainable. Alternative financing strategies that provide sustainable sources of funding for the Wildlife Authority are required to assist towards the path of sustainable conservation financing.
19. **Human resource capacity**: Management of National Parks is inadequate due to several factors: the most important being adequately trained staff. Most of the current staff has a strong military background as most of them were transferred from SPLA with limited skills in Park management. The MWCT/ SSWS face shortage of trained personnel in the field of wildlife science/management, ecotourism and environmental management. Some of the trained South Sudanese are still in the Diaspora. Other trained personnel have sought engagements with sectors other than wildlife and many wildlife and forestry graduates are without work. Therefore, it is necessary to train the existing personnel and encourage other qualified people to return and join the MWCT. The MWCT has made some progress in recruiting a few graduates. The wildlife training centers (e.g. Boma Wildlife Training Centre and Nimule Training Centre) and South Sudan universities, especially the University of Juba, which has a Department of Wildlife Science, should be actively involved in the training of wildlife personnel in all relevant fields. The capacity development effort should also be extended to communities (pastoralists, farmers and anglers) living in or around protected areas to improve their skills in the protection of wildlife and poverty alleviation.
20. **Integrating livestock and wildlife**: Because of the preponderance of pastoralist land use in parts of South Sudan, integrating livestock and wildlife is an important issue for the wildlife sector. Activities in the livestock industry can have adverse effects on wildlife, particularly where intensive livestock development involves landscape modifications such as construction of fences or modification of water sources. Over-grazing has already occurred in certain locales of South Sudan, resulting in habitat degradation, impairment of water quality and destruction of aquatic habitats. Aggregation of livestock and wildlife in areas with shared resources greatly enhances the chance of disease transmission between them.
21. **International cooperation**: The Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD), the UN Framework Convention on Climate Change (UNFCCC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Migratory Species (CMS) and others including regional and bilateral agreements, are relevant to the national wildlife policy. Following independence, there is a need for South Sudan to seek membership of the relevant treaties and protocols and integrate their provisions into both policy and implementation strategies. International cooperation also provides opportunities for South Sudan to obtain various forms of support from other countries in its efforts to develop its wildlife management capacity.
22. **Cultural heritage and traditional knowledge**: Cultural beliefs among the Zande of Western Equatoria and the Shilluk of Upper Nile have helped in the preservation of the Bongo and

Nile lechwe, the Shilluk and Zande respectively. Among certain communities in South Sudan, it is considered taboo to kill certain animal species and this of course helps in their conservation and sustainable use. Therefore, it is valuable to retain the cultural value of wildlife and create an awareness of past and traditional knowledge in the general public.

23. **Participation of women:** Women in South Sudanese societies take a very active role in activities such as fishing, collection of wild fruits and vegetables and ensuring food security at the household level. Consequently, the involvement of women in development is very important and therefore women should be encouraged to take a more active role in conservation activities at all levels.
24. **Post conflict infrastructure development**: Developments such as roads are being constructed as peace returns to South Sudan; some of which pass through National Parks while others cross important wildlife corridors. If not controlled e.g. by undertaking environmental and social impact assessments these could negatively affect wildlife conservation in the country in the future.
25. **Poverty**: Large proportions of South Sudanese live below the poverty line and are ignorant to the importance of conserving biodiversity. With such communities, it is usually the best animals that are sold off for slaughter or sacrificed during difficult times thus leaving inferior ones to form the economic base. The ability of the owners to cope with the socioeconomic demands continues to dwindle as they dispose of more animals without replenishment capacity.
26. **Introduction of new breeds/varieties**: The long-term viability of animal agriculture in South Sudan will depend on the genetic variability of the indigenous animals being reared. If this genetic base is eroded as breeds developed for intensive management regimes replace the indigenous breeds, then viability of the livestock sector will be negatively affected.

2.5.2 Emerging Barriers and Issues to Effective Rangeland Resources Management

1. **Cumulative impact of delays to complete the policy, legislative and institutional reforms initiated at independence in 2011:** Delays in completing the legislative reforms initiated after independence in 2011 means that the country is not prepared to manage its biodiversity. The management of protected areas, forests, and environmental management exist on laws adopted under the Comprehensive Peace Agreement (CPA). There is clear inadequacy in the legislative, regulatory and institutional structures to adequately manage environmental compliance, deforestation and poaching, among others. Optimal biodiversity outcomes will only be obtained when a clear legislative, regulatory and institutional structure has been established and actions at both national and state level are coordinated.
2. **Transboundary wildlife management**: Several of South Sudan's wildlife PAs lie at the borders with neighboring countries. Wildlife also migrates across those borders. South Sudan has signed a memorandum of understanding with Uganda for transboundary or 'peace park' management in four protected areas. There are plans to undertake measures to reach similar

agreements with Ethiopia, Kenya, CAR, the DRC and Sudan. Transboundary wildlife management efforts are an important mechanism to build trust and cooperation between South Sudan and its neighbors, for preventing conflicts over natural resources, sharing skills and resources, learning from different countries' experiences, and managing wildlife at the landscape-scale where it crosses international boundaries.

3. **Agricultural Biodiversity in South Sudan - threats from biotechnology:** South Sudan farming communities grow a wide range of crops. The main crops cultivated are sorghum, maize, cassava, groundnuts, sesame, pearl and finger millet, beans, peas, sweet potato and rice. Sorghum is the staple food and is widely grown throughout the entire country. Modern agriculture emphasizes the use of improved cultivars but some farmers have retained their varieties and this form of in-situ on-farm conservation needs to be strengthened. The local communities are custodians of a lot of indigenous knowledge on plant genetic resources (PGR) but documentation of this knowledge as well as inventories of the under exploited plants and location maps for further exploration are poorly developed in the country.
4. **Oil exploration, development and mining, and the fall in oil prices**: Much of South Sudan's immediate future and prospects as an independent nation will be determined by the policies and management practices put in place in its petroleum sector. Oil has been a key resource underlying the long years of Civil War, and petroleum currently provides 98 percent of GRSS revenue. Petroleum development is therefore positioned to provide much of the financing that the Government requires to invest in infrastructure, social services and development activities in general.
5. **Climate change**: South Sudan lies within semi-arid zones in the north and southeast. These zones experience the highest risk of climate change, characterized by erratic rains, floods and droughts. This results in poor crop production, pests and diseases for crops and livestock, among others. The high climate variability and the low adaptive capacity for the majority of the population will lead to more indirect impacts on biodiversity. Climate change may increase phenomena such as fire, drought and flood severity and/or aggravate the already existing threats to the ecosystems or individual species. The poor performance of produced resources of crops and livestock will lead to excessive pressure on the biodiversity of wildlife, forest and wetlands among others.
6. **Alien invasive species**: There is a heavy infestation of invasive alien plant species, of the Sudd wetlands. Water hyacinth (Eichornia crassipes) now forms an almost ubiquitous floating fringe to river channels and lakes in the Sudd swamps. The Ministry of Environment and Forestry, which is responsible for water hyacinth control (and other invasive plant species) is only monitoring infestations and lacks capacity to respond to the spread of the species. There are concerns that invasive species could also infest the grasslands and woodlands as considerable unregulated cross border movement occurs since South Sudan is a corridor to East, Central and North Africa.
7. **Challenges for gender and women in the new nation**: Customary law continues to govern the use of natural resources in South Sudan, with each ethnic group applying its own laws relating to land and land rights within its own territory. However, customary rules are not

equitable and restrict women's access to land and property. The current legislation recognizes the importance of customary institutions as well as their inability to protect women's access, control and ownership of land. While the legal framework provides a solid foundation, efforts need to be made to clarify roles and responsibilities of the Government and customary institutions when rights overlap, and to provide guidance on how to bridge the gap between a customary framework that restricts women's rights, and the new legal framework that puts women on equal footing with men.

8. **Indigenous communities, knowledge and integration into biodiversity management**: Generally, across all the 12 livelihood zones of South Sudan people practiced indigenous knowledge alongside modern knowledge from education and research. Anecdotal discussions held during RMSAP 2022-2031 consultation showed that many communities still rely on herbs and traditional medicines for treatment of malaria and cholera among others. Similarly, plant genetic resources range from little known indigenous wild fruits and vegetables pastures and forages, medicinal plants, indigenous staples like millet and sorghum to introduced crops such as maize. The common factor reported was the withholding of knowledge by elders with the knowledge passed on from one generation to another by word of mouth and mentoring. The RMSAP 2022-2031 has considered potential of traditional knowledge to contribute to improved rangeland communities' livelihoods, while also pursuing establishment of knowledge management systems to preserve this traditional knowledge.
9. **Energy sector demand, supply issues and infrastructure development**: South Sudan is also endowed with potential hydropower sites all situated on the White Nile River estimated at up to 3,000 MW, which if exploited would provide energy needs and security for the country. The poor regulatory structure, particularly implementation of Environmental Impact Assessments, Environmental Audits and Strategic Environment Assessments means that severe impacts of energy infrastructure development could be missed. The consequences for livelihoods that are highly dependent on the water resources in rural areas (i.e. water resources cover less than 1% of land cover) could be severe. With its abundant natural forests, South Sudan aims to declare approximately 20 % of its natural forests as reserve forests to protect it from deforestation. Biomass is the major source of energy for rural populations while charcoal and firewood are the main sources of domestic energy. Moreover, the absence of public administration in many counties means that deforestation policies may be difficult to enforce.

Apart from the justification of urgently developing and implementing a South Sudan National Rangeland Management Strategy and Action Plan (RMSAP) to address the aforementioned challenges, barriers and issues to effective rangeland resource development and management, the formulation and implementation of a national RMSAP can also be justified by the prevailing temporal change of paradigms, theories and models of rangeland ecology management globally and regionally. This state of affair is espoused below.

This section summarizes the current state of scientific and management knowledge regarding global rangelands and the major challenges that confront them. Current knowledge is assessed relative to changes that have occurred within rangeland ecology, management applications, and, more broadly, global events that have influenced rangelands. A widely accepted philosophical interpretation of scientific advancement notes that progress is often gradual and incremental as prevailing theories are explored and refined (Kuhn 1996). These periods of incremental progress, however, are periodically interrupted by major changes in underpinning theories that are termed scientific revolutions. This proved to be the case for **range ecology** and the **discipline of ecology** in the 1970s and 1980s when the prevailing theory of ecological equilibrium was challenged by a more dynamic none-equilibrium interpretation (Briske et al. 2003). Whether or not this represented a scientific revolution remains in dispute, but there is no question that it introduced a period of **rapid conceptual change** for the rangeland profession. The development of this new knowledge broadly paralleled the progression of natural resource management (NRM) models based on human–natural resource interactions.

Natural Resource Management (NRM) models are envisioned to sequentially progress with time following human settlement and societal development from humans as natural resource users to humans as natural resource stewards (Chapin et al. 2009). Consequently, changes in the perception of how humans interact with nature contribute to different knowledge needs and management strategies to maintain the supply of desired natural resources.

Natural resource exploitation is an anticipated outcome following a long period of low-impact preindustrial human use (See **Figure 11** below). A good example is the exploitation of US rangelands, which was prompted by the perception of limitless open-access resources, and there occurred excessive livestock grazing in the late nineteenth and early twentieth centuries. This period of exploitation and subsequent natural resource degradation was termed the "**Range Problem**" in the southwest USA, and it directly contributed to development of the rangeland profession (Sayre et al. 2012; Sayre 2017). ***Exploitation*** was followed by development of ***steady-state management*** that attempts to maximize sustainable yield of specific goods that are most highly valued. This model was implemented through the control of ecosystem variation—fire suppression, predator control, and fencing—**to optimize production of desired goods**, on the basis of broad ecological principles that are administered through **command and control management** by various state or national agencies (See **Table *4 below).***

Recognition that effective management needed to consider entire ecosystems, including their inherent variation, and a societal demand for more diverse ecosystem services promoted development of the ***ecosystem management model***. The ecosystem management model—focused on planning for integrated ecosystems as well as solicitation of more diverse stakeholder feedback—originated in the 1970s and was widely adopted in the 1990s, especially by natural resource management agencies in the USA (Quigley 2005). Subsequently, ecosystem

management has introduced associated concepts that include **adaptive management and ecosystem services** (Nie 2013).

A more recent model—**resilience-based management** (RBM)—is currently being developed and explored to provide a more effective means for managing natural resources (Chapin et al. 2009, 2010). This model recognizes the inevitability of change and seeks to guide change to sustainably provide multiple ecosystem services for society.

Figure 11: Progression of Natural Resource Management Models Following Human Settlement (Redrawn from Chapin Et Al. 2009)

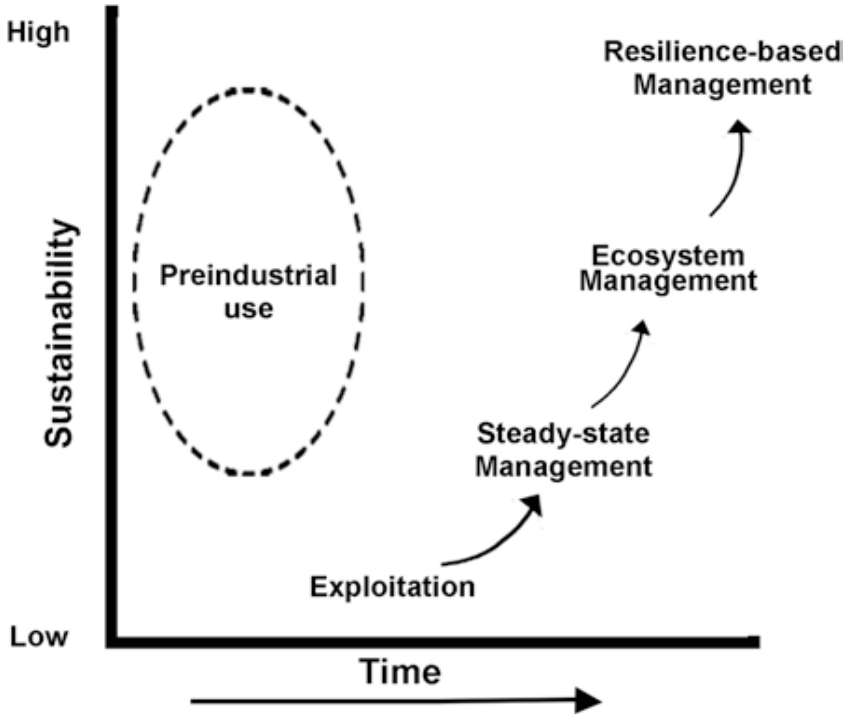


Table 4: Seven Distinguishing Attributes of Steady-State, Ecosystem, and Resilience-Based Natural Resource Management Models[14]

Attribute	Steady-state management	Ecosystem management	Resilience-based management
Ecological models	Succession-retrogression	State-and-transition, rangeland health	Multiple social– ecological systems/ novel ecosystems
Reference condition	Historic climax plant community	Historic climax plant community, including historical range of variation	Landscapes with maximum options for ecosystem services
Role of humans	Use ecosystems	Part of ecosystems	Direct trajectories of ecosystem change
Ecosystem services	Meat and fiber products	Several ecosystem services	Options for diverse ecosystem services
Management goals	Sustain maximum yield of commodities	Sustain multiple uses	Sustain capacity of social–ecological systems to support human well-being
Science- management linkages	Top-down from management agencies	Top-down from management agencies	Multi-scaled social learning institutions
Knowledge systems	Management experience and agricultural experiments	Multidisciplinary science and ecological experiments	Collaborative groups, spatially referenced, updatable databases

Indeed, the Justification of developing and implementing a more robust South Sudan National Rangeland Management Strategy and Action Plan is to overcome the key challenges, emerging policy, institutional and legal trends highlighted in **section 2.5.1** above, as well as the need to move away from disempowering rangeland management models that are in the purview of the following models: ***Exploitation and steady-state management models*** to the more current rangeland management models that include: ***ecosystem management, adaptive management, ecosystem services and resilience-based management (RBM) models.*** The current South Sudan National Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 will adopt the **Sustainable Rangeland Development and Management (SRDM)** implementation model which is many ways the equivalence of ***resilience-based management (RBM) model.***

[14] Bestelmeyer and Briske (2012)

CHAPTER THREE: RANGELAND MANAGEMENT STRATEGY

The Strategy for guiding South Sudan in realizing sustainable rangeland management was defined through a thorough process that involved analysis and determination on data and information gathered from secondary and primary sources. The analysis and evaluation of data and information gathered enabled the strategy task force to define the strategy's vision, mission, principles and values, strategic priority areas (SPAs), strategic goals, theory of change (ToC) and baseline situations, specific actions, indicators and targets (this will be dealt at the action plan section). The framework that was used to define strategic goals was the SMART (Specific, Measurable, Achievable, Realistic, Time-bound) model and these strategic goals, as well as strategic actions (to be covered at action plan section) do reflect the holistic situation analysis and more particularly the SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses for South Sudan Sustainable Rangeland Management. Thorough consideration of SWOT recurring themes suggested five Strategic Priority Areas (SPAs) for developing and implementing South Sudan Rangeland Management Strategy and Action Plan (see table 5 below).

3.1 Vision

"Healthy and prosperous South Sudanese including enhanced biodiversity attributed to sustainable management of rangelands".

3.2 Mission

"Creating positive changes in the livelihoods of pastoralists and agro-pastoralists in the country through sustainable management of rangelands resources, capacity building, promoting commercialization and entrepreneurship, research and technology transfer, networking and partnership, good governance and climate change adaptation and mitigation".

3.3 Principles and Values

3.3.1 Principles

a. Ecologically sustainable development and management of natural resources should be the underlying principle, and the principle against which commercial use of rangeland resources must be tested.
b. All intervention / actions need to be consistent with the range of present national and intergovernmental agreements and strategies and with international obligations.

c. Development of state strategies should rest primarily with local communities and landholders, but in consultation with national government and the broader community.
d. While legislative and compliance responsibility for ensuring ecologically sustainable development and management of rangeland resides with government at all levels, primary responsibility for natural resource management rests with land users, in accordance with states' objectives, planning processes and relevant legislation.
e. Present generations are responsible for the health, protection and care of the rangeland ecosystem.
f. There should be equitable opportunities for sustainable multiple use and enjoyment, for this and future generations.
g. The rights and responsibilities of rangeland titleholders, and others who use or have an interest in the rangelands, should be respected.
h. Security of tenure and security of access to resources is required to enable appropriate resource management, sound business planning and the conservation of biological diversity.
i. The right to security of tenure should be balanced by a responsibility for ecologically sustainable management of the resource and by safeguards for its ultimate protection.
j. While there is a place for both incentives and sanctions in achieving changes in management in the public interest, change is more constructively achieved through encouragement than by coercion.
k. Implementation of the objectives of ecologically sustainable development should be applied across all rangelands in the country, irrespective of how the land is held and used.
l. The aspirations and inherent rights of indigenous peoples, their relationship with the rangelands, and the need for culturally appropriate negotiation processes, must be recognized.

3.3.2 Values

a) A wide range of values (social, cultural, economic, aesthetic and ecological) need to be considered in making balanced decisions about the rangelands; financial analysis alone is an inadequate tool for this purpose.
b) Decisions concerning the rangelands need to take account of inter-dependencies and inter-relationships between components of the ecosystem, both within and between regions, and between the rangelands and the rest of South Sudan.
c) Consideration should be given to the effects of episodic events, the spatial variability of processes and the generally long-term biophysical time frame of the rangelands.
d) Prevention of any resource degradation is more effective than rehabilitation.

e) The precautionary principle should be adopted so that decisions are based on the best data available, lean to the conservative and do not result in irreversible loss of opportunity.
f) All rangeland managers, users, special interest groups and administrators should be committed to and involved in the development, implementation and review of the Rangeland Management Strategy and outline actions.

3.4 Strategic Priority Areas and Goals

Table 5: Identified Strategic Priority Areas and Goals from SWOT and SMART Analysis

Strategic Priority Areas (SPAs)	Strategic Goals
Strategic Priority Area I: Policy and Legal Frameworks	**Strategic Goal 1**: To Lay the Groundwork for Change, Capitalize on Conductive Environment for Change and Create a Growing Demand for Change of Rangeland Development and Management Policies and Legal Framework. **Strategic Goal 2**: To Enhance, Harmonize, Formulate and Negotiate on Rangeland Development and Management Policies and Legal Framework Changes and Ensure their Effective Implementation and Impact.
Strategic Priority Area II: Governance and Management of Rangeland Resources.	**Strategic Goal 3**: To Prepare and Utilize Land Use Plans for Rangeland Development. **Strategic Goal 4**: To Improve Rangeland Health and Productivity. **Strategic Goal 5**: To Strengthen Governance of Rangeland Resources. **Strategic Goal 6**: To Establish and Operationalize Trans-Border and Within the Country Transhumance Agreements, and Inter-Community Resource Sharing Mechanisms in Order to Facilitate Free, Safe and Peaceful Sharing of Rangeland Resources.
Strategic Priority Area III: Institutional and Individual Capacity Building.	**Strategic Goal 7**: To Develop / Strengthen Relevant Rangeland Development and Management Institutions in Terms of their Identities, Functions, Governance and Organization. **Strategic Goal 8**: To Mobilize Financial, Material and Technological Resources for Rangeland Resources Development and Management. **Strategic Goal 9**: To Raise the Level of Knowledge and Skills for the Individual and Teams Involved in Rangeland Development and Management.
Strategic Priority Area IV: Biodiversity Conservation and Climate Change Mitigation and Adaptation	**Strategic Goal 10**: To Effectively Establish and Manage Protected Areas in Rangelands. **Strategic Goal 11**: To Promote Habitat Restoration in Degraded Rangelands. **Strategic Goal 12**: To Prepare for and Adjust to Both the Current Effects or Benefits of Climate Change and the Predicted Impacts or Opportunities in the Rangeland. **Strategic Goal 13**: To Tackle the Causes and Minimize the Possible Impacts of Climate Change in the Rangeland.
Strategic Priority Area V: Investment	**Strategic Goal 14**: To Invest in Labor and Social Capital in order to Produce a Wide Array of Environmental and Economic Benefits.

in Sustainable Rangeland Development and Management.	**Strategic Goal 15**: To Invest in Infrastructure, Production Facilities, Machines and Equipment. **Strategic Goal 16**: To Invest in Natural Resource and Land Development. **Strategic Goal 17**: To Invest in Entrepreneurship Development in Rangelands

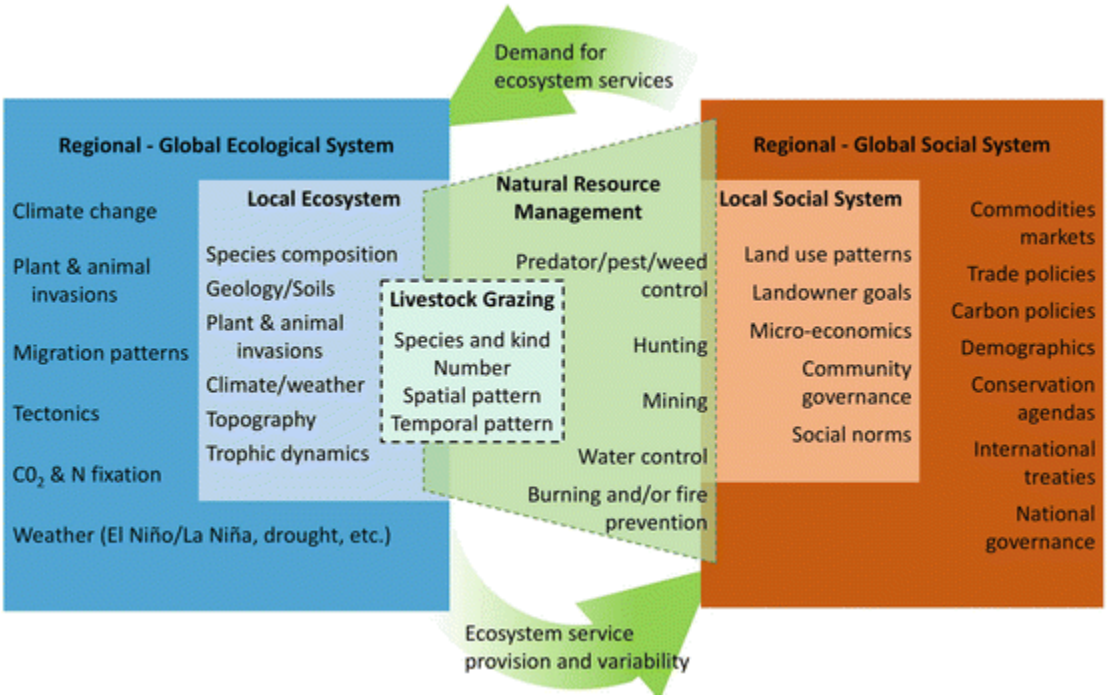
3.5 Theory of Change

3.5.1 Organizing and Implementation Models and Paradigms

Complex challenges like those facing communities and ecosystems in the arid and semi-arid lands of South Sudan need holistic and integrated solutions. South Sudan RMSAP 2022-2031, will mainly apply or bring into operation two main rangelands development and management approaches or paradigms; namely, community-based Rangelands Development and Management (CBRDM) and Ecosystem-Based Rangelands Development and Management (EBRDM). The two approaches or paradigms will be informed or organized around the Socio-Ecological System (SES) model, which in essence operate within the context and processes of physical and economic settings. A Social–Ecological System (SES) is a combination of social and ecological actors and processes that influence each other in profound ways. The SES framework model is not a research methodology or a checklist to identify problems. It is a conceptual framework designed to keep both the social and ecological components of a system in focus so that the interactions between them can be scrutinized for drivers of change and causes of specific outcomes. **Resilience**, **adaptability**, and **transformability** have been identified as the three related attributes of SES model that determine their future trajectories. Identifying feedbacks between social and ecological components of the rangelands systems at multiple scales will be important to SES-based analysis. The two implementation paradigms (CBRDM and EBRDM) shall put local people and ecosystems at the forefront of development and conservation, hence empowering communities to transform their lives, secure peace, and conserve natural resources.

The social processes that sustain or degrade the ecosystem's current state and the ecological processes that both drive ecosystem change and shape human use and benefits occur at multiple scales and are fraught with uncertainties. To improve the sustainability of natural resource use, managers need not only better or more complete ecological data, but also a clear understanding of where, when, and how resources are used and who gets to use them, and how and why use varies over time and across the landscape. The SES model framework allows managers to treat all these interacting dynamics as part of a single integrated system (see **Figure 12** which shows a generalized diagram of a Rangeland Social–Ecological System).

Figure 12: Generalized Diagram of a Rangeland Social–Ecological System – *Source: Reid et al. 2014*



Humans and the environment interact in countless ways outside of natural resource management, but the interactions are most directly planned, manipulated, and monitored in natural resource management activities. Local, regional, and global social processes can all shape natural resource use and management activities. While resource policy may be set at large geographical scales (e.g., national), management activities occur within a single ecosystem. Livestock grazing differs from other types of natural resource use in that it is indirect; rather than directly manipulating a rangeland ecosystem, livestock operators devote their primary attention to managing livestock, and the livestock interact directly with the rangeland (adapted from Reid et al. 2014).

The applications of CBRDM and EBRDM paradigms within the organizing SES model framework is expected to bring into "life" the application and realization of Sustainable Rangeland Management (SRM) – see **Figure 13**, SRM technology and SRM approach to the development and management of South Sudan rangelands.

Sustainable rangeland management (SRM) is the use of rangeland resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term potential of ecosystem services.

An SRM technology is a physical practice on the land that controls land degradation, enhances productivity, and/or other ecosystem services within rangelands. A technology consists of one or more measures, namely agronomic, vegetative, structural, and management measures.

An SRM approach defines the ways and means used to implement one or more SRM technologies in rangelands. It includes technical and material support, involvement and roles of different stakeholders, etc. An approach can refer to a project/ programme or to activities initiated by land users themselves.

Figure 13: Conceptual Framework of Sustainable Rangeland Management

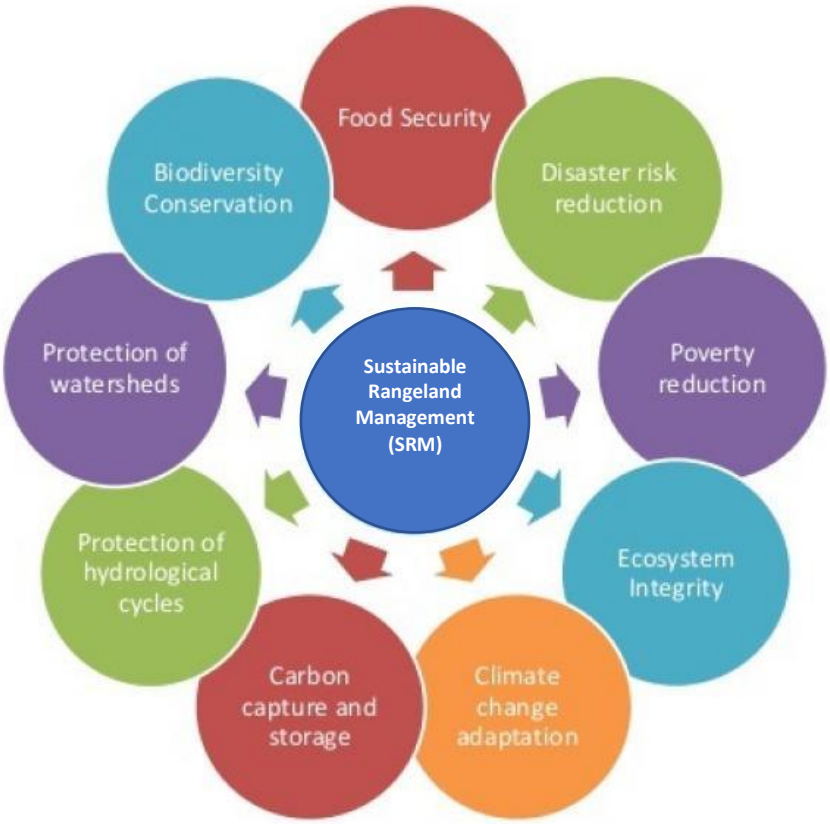


Figure 14 below, exemplifies how the organizing model, the implementation paradigms will dovetail with the implementation model of the RMSAP 2022-2031 to bring changes in terms or realizing sustainable and equitable development and management of South Sudan Rangeland Resources.

Figure 14: Shows How the Organizing Model and Implementation Paradigms will dovetail with the Implementation Model of the RMSAP 2022-2031 in order to bring the Required Change.

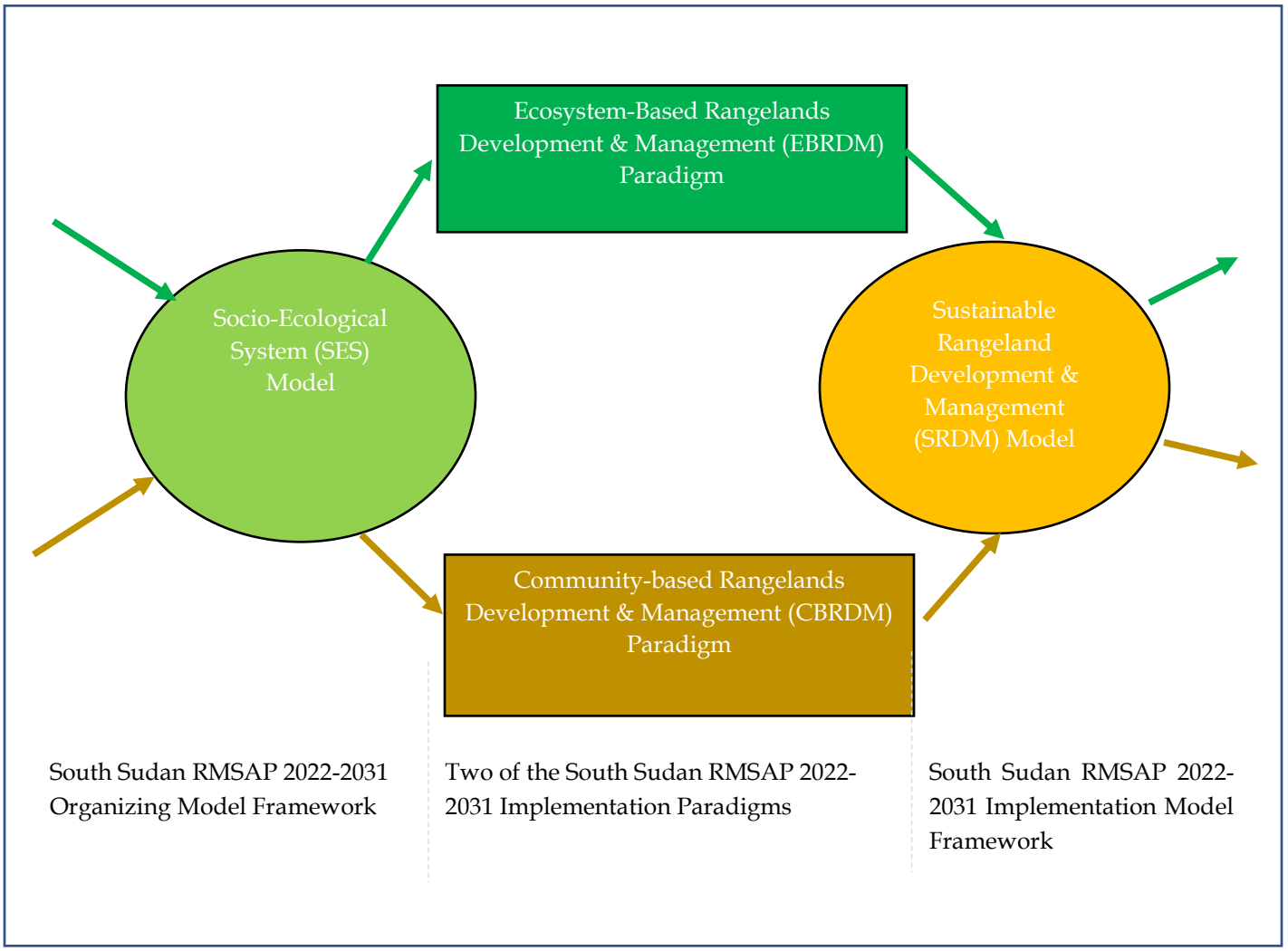


Figure 15 and **Figure 16** below; respectively further illustrate in details and summary theory of change (ToC) which shows how changes will come in South Sudan rangelands due to the implementation of RMSAP 2022-2031.

Figure 15: Detailed Theory of Change for the South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031.

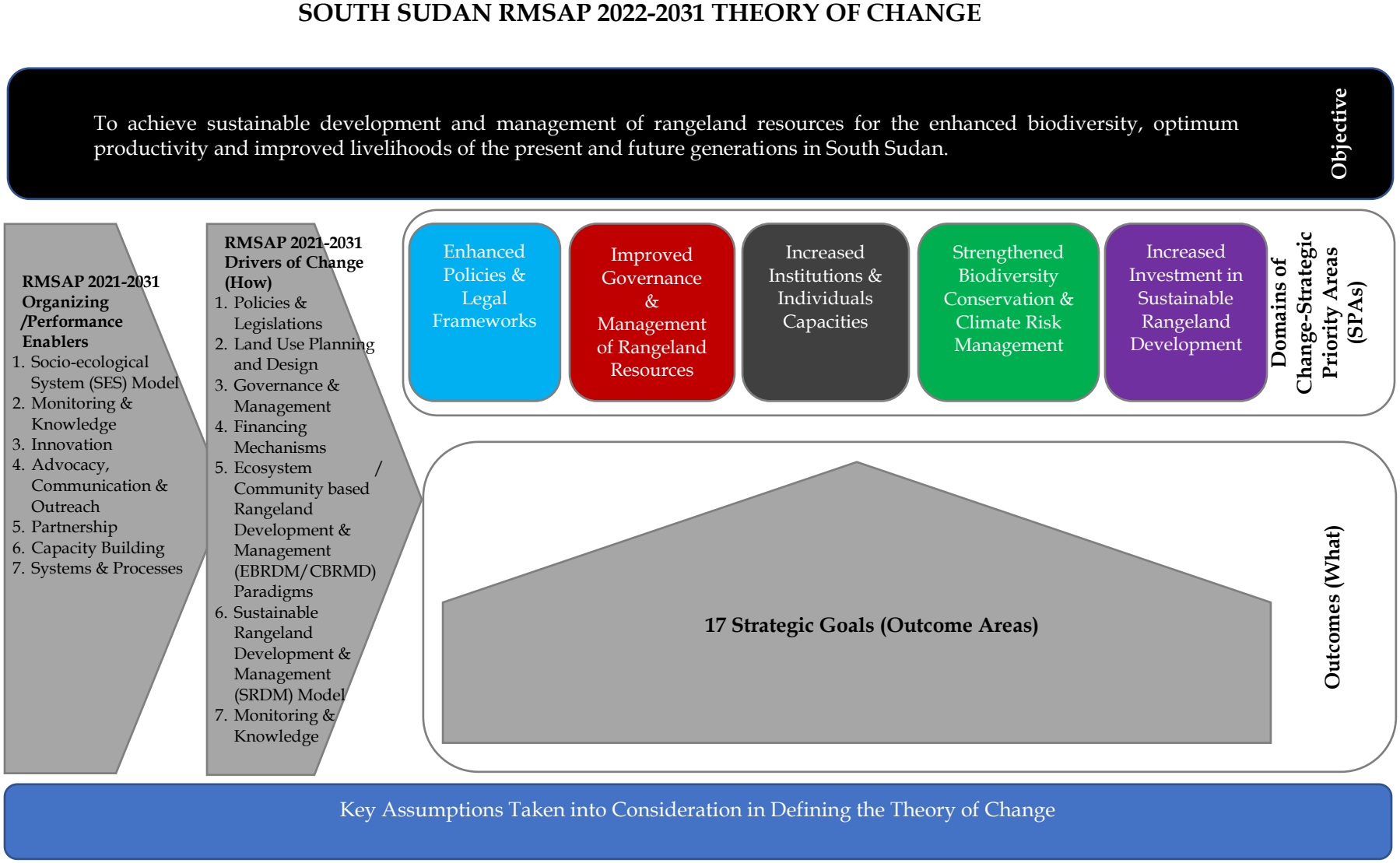
Challenges	Main Activities / Strategic Priority Areas	Input/Resources	Expected Outputs	Expected Outcomes
Inadequate policy and legal framework	• Improving Policy and Legal Frameworks. • Investing in Sustainable Rangeland Management (SRM)	•Funds to facilitate development of policies, advocacy and lobbying of national, state and county governments, and establishment of rangeland management coordination units at the national and State levels. •Policy and advocacy experts to facilitate the activities; •Advocacy toolkit for national and State governments; •Political goodwill.	•New and revised national rangeland management policies, strategies, and action plans; •Regional and continental policies downscaled and implemented at national and sub-national levels; •Active parliamentary pastoralist groups and fora; •Rangeland management coordination unit at IGAD established; •Streamlined and strong government departments and agencies with skilled rangeland management staff. •Increased budgetary allocation and formulation of supportive policies for rangeland management by governments.	•Increased resource allocation and commitments to support sustainable rangeland management and equitable governance; •Effective coordination and implementation, and monitoring of rangeland management activities;
Low institutional and organizational capacity	• Carrying out Institutional and Individual Capacity Building. • Investing in Sustainable Rangeland Management (SRM)	• Funds to support establishment of institutions, infrastructure, train and deploy skilled rangeland management personnel; • Supportive policies, strategies and plans; • Rangeland management experts to support capacity building. • Develop Climate Risk Management (CRM) framework and training module/manual for Climate change and disaster risk management experts;	•Strengthened institutional and organizational capacity in rangeland management; •Well-equipped and staffed government departments and agencies; •Skilled rangeland management staff; •Increased budgetary allocation for rangeland management. •CRM framework and training manual for South Sudan; •Government personnel trained on CRM mainstreaming;	• More attention given to rangeland management issues; • Increased rate of success of rangeland management intervention projects;

Challenges	Main Activities / Strategic Priority Areas	Input/Resources	Expected Outputs	Expected Outcomes
Rangeland degradation	• Improving Biodiversity Conservation and Climate Change Mitigation and Adaptation • Improving Rangeland Resource Governance and Management. • Investing in Sustainable Rangeland Development (SRD)	•Supportive government policies; •Certified seeds for range grass and tree species; •Skilled human resource in rangeland management, hydrology and water resource management; •Funds to facilitate community mobilization and implementation of rehabilitation activities; •Empirical evidence from research to guide rangeland health improvement; •Maps of range condition and trends. •Supportive government policies, strategies and plans on control and management of invasive species; •Financial resources to support implementation of activities (interventions and research); • Skilled human resource in invasive species management; •Invasive species management guidelines/manuals.	•Increased rangeland plant cover, diversity and productivity; •Reduced soil erosion; •Increased SLM practices; •Increased grass seeds and fodder production, increased fodder storage and pasture reserves. •Increased desirable forage cover and diversity; • Increased forage production •Increased budgetary allocation towards climate change adaptation and mitigation; •EBA and PES approaches adopted by South Sudan national and State governments; •Increased budgetary allocation towards climate change adaptation and mitigation;	•Improved range health and condition; •Increased availability and improved quality of pasture; •Improved range health; •Increased availability and quality of pasture; •Increased range and livestock productivity; •Effective mitigation and adaptation to climate change in the rangelands; •Reduced drought related livestock and human deaths.

Challenges	Main Activities / Strategic Priority Areas	Input/Resources	Expected Outputs	Expected Outcomes
Poor governance of rangeland resources	• Improving Rangeland Resource, Governance and Management • Investing in Sustainable Rangeland Management (SRM)	•Supportive government policies; •Funds for participatory rangeland management (PRM) out scaling, capacity building and lobbying activities; •PRM guide and experts for governance; •Maps of spatial expanse of rangelands and livelihood zones (multiple uses); •Expertise in land use planning and land use policies.; and •Conflict resolution and peace building, rangeland management, and policy experts;	•Mainstreamed customary rangeland management institutions and practices; •Conducive legal framework for binding customary rangeland management constitutions and laws; •Improved capacity of land users, to implement traditional rangeland resource management practices; •Developed Participatory Rangeland Management Plans and their implementation, monitoring, evaluation and learning; •Increased recognition and application of PRM practices in South Sudan. •Rangeland use planning integrated into rangeland development plans; •Maps showing physical boundaries of rangelands in Member States; •Gazetted cattle corridors to facilitate seasonal livestock movements. •Formulated and assented to bilateral and multilateral cross-border agreements; •Strengthened cross-border inter-communities herd movement and rangeland resource sharing mechanisms; •Recognized intercommunity negotiated resource sharing agreements and conflict resolution mechanisms; •Established cross-border livestock disease surveillance units/agency; •Transborder Natural Resource Management (TBNRM) projects in the cross-border clusters; •Established cross –border conflict resolution and peace committees.	•Improved rangeland management and health; •Equitable access to rangeland resources and reduced conflicts over resources. •Reduced encroachment and conversion of rangelands to other land uses; • Increased livestock mobility and therefore more even use of rangelands, and reduced incidences of conflicts; •Increased role of rangeland users in decision-making processes; •Improved and sustainable rangeland land use. •Enhanced herd mobility and peaceful and equitable sharing of grazing and water resources; •Enhanced peace and security among pastoral communities; •Reduced livestock diseases incidences across the borders; •Enhanced rangeland ecosystem services. •Increased of investment in rangeland management by governments and private sector; •Diversified livelihoods and healthy rangelands.

Challenges	Main Activities / Strategic Priority Areas	Input/Resources	Expected Outputs	Expected Outcomes
Insecure land rights and tenure in the rangelands	• Improving Rangeland Resource Governance and Management. • Improving Policy and Legal Frameworks. • Investing in Sustainable Rangeland Management (SRM)	• Collaboration and cooperation from the communities living in the rangelands; • Supportive policies and political goodwill.	•New and revised land tenure policies and laws; •Integrated statutory and customary rangeland rights and tenure; •Land tenure and land laws that are appropriate to the local contexts of the rangelands.	•Recognition and formalization of common property tenure regimes in the rangelands; •Secure national and State levels pastoral community land rights and tenure systems.
Inadequate research, extension, technical training and poor knowledge management.	•Carrying out Institutional and Individual Capacity Building. •Investing in Sustainable Rangeland Development and Management (SRDM)	• Funds to support training (scholarships), research and establishment of States rangeland centers of excellence; • Supportive policies, strategies and plans; • Rangeland management experts to support capacity building. • Funds to facilitate sensitization and awareness raising activities, and total economic value (TEV) studies and development of value chains; • Environmental economics and sustainable land management experts;	• Rangeland management incorporated into existing University and TVET training programmes and institutional capacity built to offer training in rangeland management; • Existing research and extension institutions strengthened and coordination among them improved; • National rangeland research fund established; • Research information that reflect the realities and interventions that are responsive to local needs; • States rangeland management centers of excellence established in existing training institutions at the States. • Empirical evidence on the value of rangeland ecosystem services; • Value chain of rangeland products developed; • Increased value addition of rangeland products;	•Critical mass of experts in rangeland management trained; •Substantial and relevant empirical evidence to inform rangeland management; •Proper targeting and site-specific rangeland management interventions.

Figure 16: Summarized Theory of Change for the South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031.



3.5.2. Key Assumptions Taken into Consideration in Defining the Theory of Change

While the application of the two paradigms (CBRDM and EBRDM) from the organizing Social–Ecological System (SES) Model Framework and implementation of rangeland strategies and action plans within the Sustainable Rangeland Development and Management (SRDM) Model Framework has been successful in various African countries including IGAD region countries, the key continuing assumptions underlying the models and paradigms are that rangeland communities leadership will rise to the rangeland challenges, that National, State and County Governments in South Sudan and other partners will see the opportunity presented by South Sudan RMSAP 2022-2031 and work through rangeland communities and within the biodiversity and ecosystems dynamics and that National, State and County Governments in South Sudan, private sector, development partners, NGOs and civil societies will commit enough financial, technical and material sources to facilitate the implementation of the South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031. A large part of RMSAP 2022-2031 role is to work through these assumptions.

There are some risks in the wider environment relating to dominance of oil and gas developments in the country's rangelands to the continuing culture of political and ethnic incitement, to extreme drought /floods and planned grazing systems as populations grow, and to regional political instability e.g. in Sudan or Ethiopia which could spread into South Sudan.

CHAPTER FOUR: STRATEGY IMPLEMENTATION PLAN

This chapter provides a well synthesized summary of the Strategic Priority Areas (SPAs) as identifies in the SWOT analysis in **section 2.5**, the respective Strategic Goals (SGs) for every Strategic Priority Area (SPA), strategic targets to be achieved, the main activities/actions, the key performance indicators, responsibilities, indicative timelines and budget estimates.

4.1 Overall Goal

The overall goal or vision of the South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 is to realize **"Healthy and prosperous South Sudanese including enhanced biodiversity attributed to sustainable management of rangelands".** This will be achieved by addressing challenges facing rangelands in the country. The challenges facing development and management of rangeland resources in the country will hence be tackled through promotion and implementation of the following:

i. Compatible sustainable rangeland management through supportive policies and governance systems;
ii. Provision of adequate resources to support sustainable rangeland management, reliable, timely and readily available data and information;
iii. Capacity building for organizations working on rangeland and natural resources management (extension, research and policy); and
iv. Research on and adoption of new, appropriate and affordable technologies.

Figure 17 presents the shortened 17 Strategic Goals aimed towards the desired Main Goal of achieving sustainable development and management of rangeland resources for the enhanced biodiversity, optimum productivity and improved livelihoods of the present and future generations in South Sudan.

Figure 17: Shortened Strategic Goals Tree for achieving healthy and prosperous South Sudanese including enhanced biodiversity attributed to sustainable management of rangelands

The following section presents the implementation action plan for the priority interventions categorized into five (5) Strategic Priority Areas (SPAs) of focus and seventeen (17) Strategic Goals (SGs) with specific targets, baseline information, clusters of activities/actions, performance indicators, responsible agencies, implementation timeframes and budget estimates drawn from literature review and consultations with experts, policy / decision makers, development agencies and rangeland communities at the national, state and local levels (please find more details in the next section).

Strategic Priority Area I: Policies and Legal Framework.

Strategic Goal 1: To Lay the Groundwork for Change, Capitalize on Conductive Environment for Change and Create a Growing Demand for Change of Rangeland Development and Management Policies and Legal Framework.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
Each state within arid and semi-arid regions to conduct at least one (1) major policies and legal framework research / evaluation study after every two years focusing on trends, gaps and opportunities of improving policies and legal framework for rangeland development and management.	Gathering evidence on trends, gaps and opportunities for improvement of policies and legal framework for rangeland development and management in the country.	Number of studies undertaken at the national and state levels in order to distill evidence on the trends, gaps and opportunities for improvement of policies and legal framework for rangeland development and management in the country**.**	**All National and State Governments' Ministries**. **South Sudan Law Review.** **Academia and Research Institutions** **Council of States (COS)** Other relevant Departments, Commissions and Agencies	**2022-2031**	**60,000,000**
By 2031, National and State level key stakeholders (including national and state governments) to analyze at least 40% of the relevant studies undertaken in rangelands and identify policy and legal challenges and plausible solutions.	Engaging national and state governments' officials involved in rangeland development and management, rangeland communities and development partners, NGO, CBOs and civil societies involved with rangelands in assessment of studies (evidence generated/distilled) undertaken in rangelands in developing clear and shared diagnosis about **problems** and possible **solutions** in rangelands.	Number and type of studies undertaken in rangelands and critically analyzed by key stakeholders in order to identify policy and legal challenges and plausible solutions. Number and type of organizations and individuals involved in assessing rangeland studies and identifying policies and legal problems and possible solutions in rangelands.	**All National and State Governments' Ministries**. **Rangeland Communities and Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions** **Council of States (COS)** Other relevant Departments, Commissions and Agencies	**2023-2031**	**20,000,000**

By 2031, National and State level key stakeholders (including national and state governments) to capitalize and use at least 50% of emerging and existing situations or conductive environment for policies and legal framework changes in the country's rangeland development and management.	Capitalizing on conductive environment for rangeland development and management policies and legal framework change (e.g. a favorable political situation or a crisis that alerts people to the need for change).	Number and type of capitalized or utilized situations or conductive environment for rangeland development and management policies and legal framework change in the country.	**All National and State Governments' Ministries**. **Council of States (COS)** **Rangeland Communities and Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies	**2023-2031**	**2,000,000**
By 2031, increase the budget and personnel (staff) provision by 40% for the key stakeholders (including national and state governments) who are carrying out advocacy, lobbying, awareness creation and training in order to create demand for policies and legal framework change and enhancement in the rangelands.	Creating a growing demand for change of rangeland development and management policies and legal framework by way of converging public and private opinion that change is needed in rangelands. The above intervention will involve processes of informing the public and private sectors about their rangeland responsibilities, right and generally to raise their awareness on rangeland development and management.	Number of staff allocated by national and state governments as well other key stakeholders for carrying out advocacy, lobbying, awareness creation and training in order to create demand for policies and legal framework change and enhancement. Percentage of increase in budgetary allocation for carrying out advocacy, lobbying, awareness creation and training in order to create demand for policies and legal framework change in rangelands. Number and type of awareness and trainings events; e.g. conferences, workshops, seminars / webinars and mass media campaigns held in a participatory process and focused on rangeland development and management, and changes needed thereof.	**All National and State Governments' Ministries**. **Council of States (COS)** **Transitional National Legislative Assembly** **South Sudan Broadcasting Corporation (SSBC) and other Mass Media Entities.** **Private Sector, rangeland communities, Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies	**2022-2031**	**60,000,000**

Strategic Goal 2: To Enhance, Harmonize, Formulate and Negotiate on Rangeland Development and Management Policies and Legal Framework Changes and Ensure their Effective Implementation and Impact.					
National Targets	*Actions*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, attain a 70 % level of operationalization and implementation of existing and newly harmonized and formulated policies and legislations at national and state levels. **By 2031, attain a 40% increase in terms of financial, physical, human and technological resources provided for enhancement, harmonization, formulation, negotiation and implementation of rangeland policies and legal framework reforms.**	Effective implementation and enforcement of existing national and states' policies / legislations and formulation and implementation of new ones where they don't exist, as well as harmonization of sectoral policies / legislations which has significant influence on rangeland development, more especially ones that ensure and promote secure rangeland rights and tenure. Additionally, policies and legal framework development will be based on Pastoralism-Resilience-Social Protection (PRSP) nexus approach that will ensure consideration of aspects of safety nets such as affordability, performance and impact, and making use of technological advancements. Key new policies that should be developed among other shall include: National Sustainable Rangeland Development & Management Policy; Climate Change Policy, Forest Policy; National Land Policy and Bush Fire Control Policy (including guidelines and strategies); For legislations, key among many; shall be land use planning laws and regulations, as well as Bush Fire Control Regulations. There shall also be development and implementation of requisite legislations and policies to regulate extractive industries to ensure they mitigate the environmental, socio-cultural and economic impacts by investing on sustainable land management, and sharing benefits with communities. The above initiatives are expected to harmonize and regulate multiple rangeland resource uses for optimization of benefits from the rangelands.	Level (%) of implementation of existing and newly formulated policies and legislations at national and state levels. Type and number of harmonized and newly formulated and being implemented relevant rangeland development and management policies, legislations and regulations at national and state levels. Percentage of increase in terms of financial, physical, human and technological resources provided for enhancement, harmonization, formulation, negotiation and implementation of rangeland policies and legal framework reforms.	**All National and State Governments' Ministries**. **Council of States (COS)** Other relevant Departments, Commissions and Agencies Private Sector, Rangeland Communities and Development Partners, NGO, CBOs and Civil Societies involved with rangelands**.**	**2022-2031**	**140,000,000**
By 2031, increase by 30% the financial, physical, human and	Creating conducive environment for policy / legislation formulation and implementation at the national and state	Number of formulated strategies and action	**All National and State Governments' Ministries**.	**2022-2031**	**80,000,000**

technological resources provided for policies and legislation formulation and implementation advocacy, lobbying, awareness creation and training interventions undertaken at national and state levels. **By 2031, increase by 30% the number of newly formulated, enhanced, harmonized and operationalized policies and legislations for rangeland development and management.** **By 2025, create in the national and state levels an equivalent of a requisite rangeland development and management coordination units/departments / secretariats.**	levels, through: •Agreeing on proposed policies, legal and institutional reforms. The negotiations will be led by national and state governments as well as key stakeholders, but where necessary NGOs, civil society institutions and community-based organizations shall be involved in order to achieve the best outcome. •Development and implementation of strategies and action plans for the existing, enhanced, new and harmonized policies and legislations. •Advocacy and lobbying for domestication of regional and continental policies, as well as implementation of existing, enhanced, new and harmonized national and state level policies and legislations. •Creation of rangeland management coordination units/departments / secretariats at the national and state levels. •Re-structuring and building institutional and organizational capacity for existing and newly created rangeland management agencies / institutions responsible for rangeland management including providing them with requisite and qualified staff (e.g. policy and advocacy experts) in order to enable them delivery of their mandates. •Development of requisite tools like policies and legislations advocacy toolkit for national and state governments.	plans for the existing, new and harmonized policies and legislations. Number at type of advocacy and lobbying interventions undertaken at national and state levels. Number of newly created rangeland management coordination units/departments / secretariats at the national and state levels. Number and type of existing and newly created rangeland management institutions that have been re-structured and their capacity enhance including providing them with requisite and qualified staff Number and type of developed requisite tools; e.g. advocacy and lobbying toolkit for national and state governments. Percentage increase of the amounts of budgetary allocations to rangeland management projects by national and state governments.	**Council of States (COS)** **Transitional National Legislative Assembly** **South Sudan Broadcasting Corporation (SSBC) and other Mass Media Entities.** **National Bureau of Statistics** Other relevant Departments, Commissions and Agencies Private Sector, Rangeland Communities and Development Partners, NGO, CBOs and Civil Societies involved with rangelands**.**		

By 2031, increase by 30 % the study and legally adopting existing community by-laws and institutional arrangements into Community Land Act (CLA) and associated regulations at the national and state levels.	Improving, consolidating and legally adopting community land laws, regulations and existing customary institutions arrangements and rules in order to ensure secure land rights and tenure regimes in the rangelands.	Percentage of increase, Number and Type of Improved, consolidated and adopted community land by-laws, tenure systems and existing customary institutions arrangements and rules at the national and state levels.	**All National and State Governments' Ministries**. **South Sudan Land Commission** **Council of States (COS)** **Transitional National Legislative Assembly.** **Private Sector and Rangeland Communities.** **Academia and Research Institutions.** Other relevant Departments, Commissions and Agencies Development Partners, NGO, CBOs and Civil Societies involved with rangelands**.**	**2022-2031**	**68,000,000**
By 2031, Increase by 30% the financial, physical, human and technological resources provided for incentivizing and motivating various actors to participate in development and implement of improved policies, legislations and regulations geared towards improved rangelands.	Providing incentives and motivations for development and implementation of improved policies, legislations and regulations geared towards improved rangelands development and management.	Type and number / amount of incentives provided in order to motivate or encourage development and implementation of improved policies, legislations and regulations geared towards improved rangelands.	**All National and State Governments' Ministries**. **Fiscal and Financial Allocation and Monitoring Commission** **Reconstruction and Development Fund** **Land Commission** **South Sudan Revenue Authority** **South Sudan Land Commission**	**2022-2031**	**30,000,000**

			Council of States (COS) **Transitional National Legislative Assembly** **South Sudan Civil Service Commission** **Employees Justice Chamber** Other relevant Departments, Commissions and Agencies Development Partners, NGO, CBOs and Civil Societies involved with rangelands**.**		
By 2026, increase by 40% the level of monitoring and evaluating policies and legal framework implementation in rangelands. **By 2026, increase by 30 % the financial, physical, human and technological resources provided for following-up, monitoring and evaluating policies and legal framework implementation in rangelands.**	Following-up, monitoring and evaluating policies and legal framework implementation. The monitoring, follow-up and evaluation shall be done in a participatory way, or a public-private partnership will be built for this job. The state and local governments will regulate and monitor the implementation, as well as NGOs.	Type and number of relevant rangeland policies and legislation implementations that are effectively being monitored, followed up and evaluated at the national, state and local levels. Percentage of increase in provision of financial, physical, human and technological resources for enabling following-up, monitoring and evaluating policies and legal framework implementation in rangelands.	**All National and State Governments' Ministries**. **Fiscal and Financial Allocation and Monitoring Commission Council of States (COS)** **Local Governments** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies	**2022-2026**	**40,000,000**

Strategic Priority Area II: Governance and Management of Rangeland Resources.

Strategic Goal 3: To Prepare and Utilize Land Use Plans for Rangeland Development.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, each of the states and national government to have undertaken at least 2 comprehensive rangeland resource mapping.	Carrying out five years' intervals comprehensive national/state/local and Participatory Rangeland Resource Mapping (PRRM) including routes to access the resources and inventorying of the baseline environmental and social conditions for national, state and local land use planning. Preparing national, state and local level rangeland resource mapping report (RRMR) including rangeland resource maps and obtaining feedback from communities and other key stakeholders. RRMRs will also include cadastral survey to identify and map the physical boundaries of rangelands, after which there shall be regulation and registration of seasonal movements in order to facilitate protection of grazing areas and livestock corridors, and development of pastoral/grazing zones and water points. In additional to the above, rangeland observatory sites will be established in selected areas in the country in order to enable continuous monitoring and scheduled assessments of rangeland condition and trends.	Number of undertaken and completed five years' intervals comprehensive national/state/local and participatory rangeland resource mapping (RRM). Numbers and categories of rangeland resource mapping reports including rangeland resource maps prepared. Prepared and being used national cadastral survey report (CSR) to identify and map the physical boundaries of rangelands in the country. Number of regulated and registered seasonal grazing movements in the country. Number of newly established rangeland observatory sites in the country. Number of pastoralist and agro-pastoralists communities/states using rangeland/land use plans.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**80,000,000**
By 2031, each of the states and national governments to have undertaken at least 2 comprehensive studies for identifying those resources that is important	Five years' intervals identification of those resources important to current livelihood systems at the national, state and local levels.	Number of undertaken and completed five years' intervals identification of those resources that are important to current livelihood systems at the national, state and local levels.	**All National and State Governments' Ministries**. **Local Governments** Other relevant	**2022-2031**	**25,000,000**

to existing livelihood systems.			Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, each of the states and national governments to have undertaken at least 2 evaluation of how access to rangeland resources has changed and the related causes at the national, state and local levels.	Five years' intervals evaluation of how access to rangeland resources has changed and the related causes at the national, state and local levels.	Number of undertaken and completed five years' intervals evaluation of how access to rangeland resources has changed and the related causes at the national, state and local levels.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**25,000,000**
By 2031, each of the states and national governments to have undertaken at least 2 studies for determination of prevailing practices for accessing and managing rangeland resources at the national, state and local levels.	Five years' intervals determination of prevailing practices for accessing and managing rangeland resources at the national, state and local levels.	Number of undertaken and completed five years' intervals studies for determination of prevailing practices for accessing and managing rangeland resources at the national, state and local levels.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**30,000,000**
By 2031, each of the states and national governments to have undertaken at least 2 assessment and identification of ways /methodologies for maintaining access to resources that are key to current livelihoods systems at the national, state and local levels.	Five years assessment and identification of ways /methodologies for maintaining access to resources that are important to current livelihoods systems, including the option of developing cross-community agreements (CCAs) as part of national, state or local level land use plans (LUPs).	Number of undertaken and completed five years' intervals assessment and identification of ways /methodologies for maintaining access to resources that are important to current livelihoods systems at the national, state and local levels.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies	**2022-2031**	**25,000,000**

			involved with rangelands.		
By 2031, each of the states and national governments to have prepared at least 2 of the following: Biophysical survey reports, socio economic reports, livestock census reports, demographic reports and grazing land management plans (GLMPs).	Five years' interval assessment and preparation of state and local level biophysical survey reports, socio economic reports, demographic reports and eventually grazing land management plans (GLMPs).	Number and quality of state and local level biophysical survey reports, socio economic reports, demographic reports and grazing land management plans (GLMPs) prepared and completed at the national and state levels.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**35,000,000**
By 2031, each of the states and national governments to have prepared 2 Comprehensive Land Use Plans (LUPs)	Preparing five years' interval Comprehensive national and state levels Land Use Plans (LUPs). The studies and assessment reports covered or stated above will form the basis for preparation of national or state level comprehensive LUPs; these studies are: •National and state level biophysical survey reports, socio economic reports, demographic reports and grazing land management plans (GLMPs). •Reports on comprehensive national/state/local and Participatory Rangeland Resource Mapping (PRRM). •Reports identifying ways /methodologies for maintaining access to resources that are key to current livelihoods systems, including the option of developing cross-community agreements (CCAs) as part of national, state or local level land use plans (LUPs). •Reports with the determination of prevailing practices for accessing and managing rangeland resources at the national, state and local levels. •Reports on evaluation of how access to rangeland resources has changed and the related causes at the national, state and local levels. •Reports on identification of those resources that are important to current livelihood systems at the national, state and local levels.	Number and quality level of the Comprehensive Land Use Plans (LUPs) prepared by the national and state governments.	**All National and State Governments' Ministries**. **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**40,000,000**

Strategic Goal 4: To Improve Rangeland Health and Productivity.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, each of the states and national governments to increase or improve by at least 30% the uptake of participatory rangeland planning (PRP) and sustainable land management (SLM) practices; rangeland plant cover and diversity, general range condition as well as availability and quality of pasture. **By 2031, each of the states and national governments to reduce by at least 30% soil erosion and vegetation degradation.**	Promoting participatory rangeland planning (PRP) and sustainable land management (SLM) practices while incorporating considerations of One Health Approach (OHA).	Rate of increase for the uptake of participatory rangeland planning and sustainable land management (SLM) practices at the country and state levels. Rate of increase in rangeland plant cover and diversity; rate of reduction in soil erosion and vegetation degradation; rate of improved range condition, and rate of increased availability and improved quality of pasture both at national and state levels.	**All National and State Governments' Ministries**. **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**20,000,000**
By 2031, Sustainable Rangeland Management (SRM) measures are applied in at least 200,000 ha in the country's rangelands by year 2031.	Increase assessment, identification and adoption of appropriate national, state and/or local sustainable or resilient rangeland resources management practices including grazing management approaches, practices, procedures and processes. Particularly, appropriate and innovative traditional rangeland management strategies inherent in various local areas will be studied, improved and adapted to the arid and semi-arid lands inhabited	Rate of increased assessment, identification and adoption of appropriate national, state and/or local sustainable or resilient rangeland resources management practices including grazing management approaches, practices, procedures and processes.	**All National and State Governments' Ministries**. **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**30,000,000**

	specific communities.				
By 2027, all states to have carried out assessments and gathered of local information on appropriate rangelands reseeding vegetation for economical alternative in reclamation of degraded rangelands.	Assessing and gathering local information on appropriate rangelands reseeding vegetation for economical alternative in reclamation of degraded rangeland. Before reseeding information which increases success in species establishment and persistence will be gathered.	Carried out assessment and gathering of local information on appropriate rangelands reseeding vegetation for economical alternative in reclamation of degraded rangeland.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States** **Environmental Management Authority (EMA)** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2027**	**40,000,000**
By 2031, increase by 25% the adoption and implementation of Land Use Changes that are more appropriate and acceptable for the specific local or state rangeland resources, that is soil and ecological processes conservation and improvements.	When and where appropriate; institute land use change that is more appropriate and acceptable for the specific local or state rangeland resources; this will be coupled with improvement and conservation of soil integrity (through initiatives like soil stabilization and reclamation among others) and ecological	Rate of increase instituting **Land Use Changes** that are more appropriate and acceptable for the specific local or state rangeland resources; this will be coupled with improvement and conservation of soil integrity (through initiatives like soil stabilization and reclamation	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism or their equivalents at the National and State Governments.** **Council of States** **Environmental Management Authority**	**2022-2031**	**45,000,000**

	processes.	among others) and ecological processes.	**(EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, reduce by at least 40% the rangeland invasive species at national and state levels. **By 2031, increase by 25% the type and number including hectares of native species newly planted in the rangelands and of which are more adaptable to the rangeland conditions.**	Managing invasive species and re-introducing native species which are more adaptable to the rangeland conditions.	Percentage of reduction in rangeland invasive species. Type and number including increased hectarage of native species newly planted in the rangelands and of which are more adaptable to the rangeland conditions.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism or their equivalents at the National and State Governments.** **Council of States** **Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**20,000,000**
By 2031, increase by 30% the assessment, identification and adoption of appropriate state and local level Grazing Systems (GSs) which are driven by Agro-ecological Intensification (AEI).	Assessing, identification and adopting appropriate state and local level Grazing Systems (GSs) which are driven by Agro-ecological Intensification (AEI). Grazing systems are not static and they will be aligned with the spatial	Percentage of increase in assessment, identification and adoption of appropriate state and local level Grazing Systems (GSs) which are driven by Agro-ecological Intensification (AEI).	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism or their equivalents at the National and State Governments.** **Council of States**	**2022-2031**	**10,000,000**

	and temporal changes, as well as by the understanding of the annual processes of re-population and seasonal growth patterns of common rangeland grasses.		**Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2027, at least 10 local community groups across national rangeland landscapes including where Rangeland User Associations (RUAs) exist adhere into sustainable rangeland management (SRM) practices. **By 2027, inter-sectoral rangeland resource planning mechanisms in form of voluntary Coordinated Resource Management Frameworks (CRMFs) are in place in each of the country's rangeland landscapes / ecosystems.**	Design, develop and use voluntary Coordinated Resource Management Frameworks (CRMFs) for example application of integrated natural resource management (INRM) practices in wider landscapes at state or local levels where stakeholders achieve consensus in decision-making to help individuals and communities work together to plan the use and management of all rangeland resources in sustainable, productive, environmentally beneficial, and economical manner. The CRMFs would provide platforms in which diverse interests and personalities may resolve or prevent conflicts, exchange ideas, build trust and mutual respect and produce action plans that all parties agree to implement and monitor. Within CRMFs, more ideas for	Number of designed, developed and being used voluntary Coordinated Resource Management Frameworks (CRMFs) at state and local levels	**All Ministries at the National and State Governments.** **Council of States** **Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**2,000,000**

	rangeland management solutions shall be generated by the collective wisdom of diverse interests working together to achieve common goals. More ideas usually will lead to better solutions for the benefit of the entire community and all resources. People working together using the CRMFs will often build strong, long-term relationships and trust for the common good.				
By 2027, ensure that there is continuous monitoring and biennial evaluation of the implementation of the Rangeland Management Strategies and Action Plans at the national and state levels.	Conducting continuous monitoring and biennial evaluations of the implementation of the Rangeland Management Strategies and Action Plans at the national and state levels**.**	• Number of regular rangeland strategy and action plans implementation oversight reports • Number of periodic rangeland strategy and action plans monitoring and reports • Number of biennial review and final evaluation reports for rangeland strategy and action plans implementation at national and state levels.	**All Ministries at the National and State Governments.** **Council of States** **Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2027**	**3,500,000**

Strategic Goal 5: To Strengthen Governance of Rangeland Resources.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, each state to undertake at least 2 major and statewide new assessments on relevant and key customary / traditional institutions in rangeland development and management. **By 2031, increase by 30 % the number and type of newly recognized and integrated relevant and key customary / traditional institutions into mainstream rangeland management institutional frameworks.** **By 2030, increase by 30% the number and type of initiatives aimed at strengthening and enhancement of rangelands statutory institutions that govern access and management of pasture, water, minerals, and wildlife and forest resources.** **By 2031, increase by 25%, the number of pastoralist groups created and being functional at the State and local levels.** **By 2027, increase by 30 % the financial allocation towards facilitation of traditional institutions managing rangeland to discharge their roles.**	Research on and integration of relevant and key customary / traditional institutions into mainstream rangeland management institutional frameworks. This will include proper recognition, adoption as well as financial facilitation of traditional institutions managing rangeland to discharge their roles. In addition to integrating existing customary institutions / groups in rangeland management, where they don't exist, there will be initiatives to organize pastoralists into groups (i.e. creation of social capital) to increase market access and more effectively articulate their goals and needs, opportunities and actions to researchers, policy makers, decision makers and extension services providers. Further, there will be general strengthening and enhancement of rangelands statutory institutions that govern access and management of pasture, water, minerals, and wildlife and forest resources.	Number of new assessments undertaken on relevant and key customary / traditional institutions. Number and type of newly recognized and integrated relevant and key customary / traditional institutions into mainstream rangeland management institutional frameworks. Number of pastoralist groups created and being functional at the state and local levels. Number and type of initiatives aimed at strengthening and enhancement of rangelands statutory institutions that govern access and management of pasture, water, minerals, and wildlife and forest resources. Percentage of increase in the financial allocation towards facilitation of traditional institutions managing rangeland to discharge their roles.	**All Ministries at the National and State Governments.** **Land Commission.** **Council of States** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**2,500,000**

By 2031, increase by 25 % the rate or ratio of prevalence of regulated access and responsible use of rangeland resources at national, state and local levels. **By 2031, increase by 25% the number of newly formulated, harmonized and adopted customary and statutory land policies, laws, regulations and guidelines at national and state levels.**	Review, strengthening and development of new policies, laws, regulations and guidelines that enable enforcement of community rangeland resource management by-laws and practices. This is expected to ensure regulated access and responsible use of rangeland resources. The above will also include harmonization of customary and statutory land laws which among others, will be integrate with appropriate and secure statutory and customary rangeland rights and tenure.	Rate of prevalence of regulated access and responsible use of rangeland resources at national, state and local levels. Number of newly formulated; harmonized and adopted customary and statutory land policies, laws, regulations and guidelines at national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Land Commission.** **Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**3,500,000**
By 2031, increase by 40% the number of newly recognized and formalized common property tenure regimes and rights through registration of customary individual or family or community "collective" landholdings within rangelands in the country. **By 2031, increase by 40% the number of rangelands/ pastoralists or agro-pastoralists communities with secure land tenure and rights**	Recognition and formalization of common property tenure regimes and rights through registration of customary individual or family or community "collective" landholdings within rangelands, that is, if possible at landscape scale.	Number of newly recognized and formalized common property tenure regimes and rights through registration of customary individual or family or community "collective" landholdings within rangelands in the country. Number of rangelands/pastoralists or agro-pastoralists communities with secure land tenure and rights.	**All Ministries at the National and State Governments.** **Council of States.** **Land Commission.** **Local Governments** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**5,000,000**

By 2031, all states and local government to have adopted participatory mapping of the key grazing and water resources as well as migratory routes in the rangelands. **Increase by 40% the new number of trained pastoralists and agro-pastoralist on Participatory Rangeland Management (PRM) through peer to peer learning and pastoral field schools both at national and state levels.** **By 2031, at least 40% of states to have adopted and using the IGAD's Participatory Rangeland Management (PRM) Guidelines**	Participatory mapping of the key grazing and water resources, migratory routes, and capacity building of the communities on Participatory Rangeland Management (PRM) through peer to peer learning and pastoral field schools (PFS). Out scaling PRM using guidelines already piloted in IGAD Member States (MSs) e.g. Ethiopia, and currently in Baringo County of Kenya as a way of ensuring effective consultation and participation of communities in rangeland management interventions.	Number or percentage of states which have adopted participatory mapping of the key grazing and water resources as well as migratory routes. Number of trained pastoralists and agro-pastoralist on Participatory Rangeland Management (PRM) through peer to peer learning and pastoral field schools. Number of new communities practicing PRM at the national and state levels. Number of months of pasture and water availability. Percentage of decrease in incidences of conflict over rangeland resources. Number or percentage of states which have adopted and using IGAD's PRM guidelines.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism or their equivalents at the National and State Governments.** **Council of States.** **Land Commission.** **Environmental Management Authority (EMA)** **Local Governments** **Rangeland users, Private Sector and Investors.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**15,000,000**
By 2031, at least 70% of states to have established units / departments / secretariats to coordinate rangeland management in the country.	Establishing of units / departments/secretariats at national and state levels in South Sudan to coordinate rangeland management in the country hence ensuring that rangeland issues do receive requisite attention, and that there is adequate capacity to respond to challenges as they arise.	Percentage of states which have established units / departments / secretariats to coordinate rangeland management in the country.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism or their equivalents at the National and State Governments.** **Council of States.** **Land Commission.**	**2022-2031**	**20,000,000**

			Environmental Management Authority (EMA) **Local Governments** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		

Strategic Goal 6: To Establish and Operationalize Trans-Border and Within the Country Transhumance Agreements, and Inter-Community Resource Sharing Mechanisms for Free, Safe and Peaceful Sharing of Rangeland Resources.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, carry at 2 national trans-border and country transhumance stocktaking studies. **By 2031, reduce by 50% the rate of prevalence of cross-border and country livestock diseases incidences and livestock related conflicts.**	Undertake five years' interval national, state and local mapping and stocktaking/inventorying within the context of trans-border and in the country rangeland resources, sharing of rangeland resources, intercommunity relations including safe mobility routes and conflict management mechanisms. Key questions among others to be answered during the above inventory and mapping shall include: a) Among the communities that access resources in each other's territories, do the people on both sides recognize some form of reciprocity (e.g. "We accept that they come to graze in our area because we know that sometimes we will need to go there")? b) Are there areas in the larger landscape where livestock from different places often converge during droughts? c) How commonly is intercommunity livestock migration accompanied by violent conflict? d) Do the different livestock owning communities in the larger landscape have similar institutions and management systems that govern access to grazing? e) How accustomed are herders from the wider landscape to having their grazing directed by some kind of	Number and quality of trans-border and country transhumance stocktaking studies undertaken. Rate of reduction of the prevalence of cross-border and country livestock conflicts and disease incidences.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their equivalents at the National and State Governments.** **Ministry of Foreign Affairs & International Cooperation.** **Ministry of Interior.** **South Sudan National Police Service.** **South Sudan Human Rights Commission.** **Commission for Refugee Affairs of South Sudan.** **Bureau for Community Security & Small Arms Control** **Land Commission.** **South Sudan Peace & Reconciliation Commission.** **National Security Service (NSS).** **Council of States**	**2022-2031**	**30,000,000**

	grazing plan or rotational grazing system? Are fines or other kinds of sanctions common? f) Are there conflict resolution mechanisms already in place? How well are they working? g) Do transhumant livestock breeds threaten sustainable animal genetic resource management of endemic livestock breeds? h) Which key trends and changes in transhumance practice impact sustainable management of endemic livestock? i) What are the factors driving such trends and changes? j) Are there local conventions and national policies regulating livestock mobility that affect endemic livestock? k) Which interventions or practices should cross-border or national transhumance agreements promote as regards transhumance to ensure in situ conservation and sustainable use of endemic livestock? l) What are perceptions of transhumance and their impact on natural resources? m) What are perceptions of relations between transhumant pastoralists and their hosts? n) What are the factors influencing individuals' perceptions of impact of transhumant practices on NRM?		**Local Governments.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2023, Develop national laws and/or pastoral transhumance code/charter which guarantee livestock mobility within the country or across national borders.	Developing national laws and/or pastoral transhumance code/charter which guarantee livestock mobility within the country or across national borders.	Formulated and adopted national laws and/or pastoral transhumance code/charter which guarantee livestock	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry;**	**2022-2031**	**45,000,000**

By 2031, Increase by 40% the number of prepared, signed off bilateral and multilateral cross-border including in-country transhumance agreements and inter-community resource sharing and conflict resolution mechanisms / agreements. **By 2031, increase by 25 % the number of newly established and strengthened existing national (national, state and local levels) and regional (bilateral and multilateral) transhumance communication, coordination and conflict management including peace building mechanisms dedicated to country and cross-border transhumance respectively.** **By 2031, reduce by 50% the number of cross-border conflicts and insecurity incidences.** **By 2031, at least 70% of transhumance agreements to be effectively harmonized with national policies, laws, regulations, local agreements and norms as well as charters and codes of transhumance practice.**	Preparing and signing off bilateral and multilateral cross-border transhumance agreements. This will be done though engagement with various actors (regional and national) in preparing and signing off bilateral, multilateral and national transhumance agreements. On the other hand, the bilateral and multilateral trans-border transhumance agreement shall adhere to the IGAD/ICPALD Protocol on Transhumance and integrate provisions of IGAD / ICPALD Regional Rangeland Management Strategic Framework (RRMSF); as well as being harmonized with the following: • National policies • National laws and regulations • Local agreements and norms • Charters and codes Above initiative will also include strengthening and where possible mainstreaming of the traditional transboundary herd movement and resource sharing agreements as well as norms regulating transhumance within communities. Establishment of new and strengthening existing national (both at national, state and local levels) and regional (bilateral and multilateral) transhumance communication, coordination and conflict management mechanisms dedicated to country and cross-border transhumance respectively. Above initiative will also include deliberate efforts of institutionalization and strengthening of traditional inter-community locally negotiated access to	mobility within the country or across national borders. Number / percentage of increase in the number of prepared and signed off bilateral and multilateral cross-border including in-country transhumance agreements and inter-community resource sharing and conflict resolution mechanisms/ agreements. Number of newly established and strengthened existing national (national, state and local levels) and regional (bilateral and multilateral) transhumance communication, coordination and conflict management including peace building mechanisms dedicated to country and cross-border transhumance respectively. Rate of reduction of the number of cross-border conflicts and insecurity incidences.	**Ministries of Peace Building or their equivalents at the National and State Governments.** **Ministry of Foreign Affairs & International Cooperation.** **Ministry of Interior.** **South Sudan National Police Service.** **South Sudan Human Rights Commission.** **Commission for Refugee Affairs of South Sudan.** **Bureau for Community Security & Small Arms Control** **Land Commission.** **South Sudan Peace & Reconciliation Commission.** **National Security Service (NSS).** **Council of States** **Local Governments.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		

	rangeland resources, and cross-border resource sharing, conflict resolution and peace building mechanisms.	Percentage of transhumance agreements harmonized with national policies, laws, regulations, local agreements and norms as well as charters and codes of transhumance practice.			
By 2024, Develop operational guidelines, which set out practical steps and modalities for implementation of bilateral, multilateral and national transhumance agreements including responsibilities of different actors, rights and sanctions.	Development of operational guidelines, which set out practical steps and modalities for implementation of bilateral, multilateral and national transhumance agreements including responsibilities of different actors, rights and sanctions.	A formulated national operational guideline, which set out practical steps and modalities for implementation of bilateral, multilateral and within country transhumance agreements.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their equivalents at the National and State Governments.** **Ministry of Foreign Affairs & International Cooperation.** **Ministry of Interior.** **South Sudan National Police Service.** **South Sudan Human Rights Commission.** **Commission for Refugee Affairs of South Sudan.** **Bureau for Community Security & Small Arms Control** **Land Commission.** **South Sudan Peace & Reconciliation Commission.**	**2022-2031**	**15,000,000**

			National Security Service (NSS). **Council of States** **Local Governments.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 25 % the number of newly established or strengthened existing Transboundary Natural Resource Management (TBNRM) Frameworks, that is within the cross-border clusters, and across territorial boundaries among communities within country.	Establishment of Transboundary Natural Resource Management (TBNRM) within the cross-border clusters, and across territorial boundaries among communities within country to foster interaction among communities and promote landscape approach to sustainable rangeland management.	Number of newly established or strengthened existing Transboundary Natural Resource Management (TBNRM) Frameworks.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their equivalents at the National and State Governments.** **Ministry of Foreign Affairs & International Cooperation.** **Ministry of Interior.** **Land Commission.** **South Sudan Peace & Reconciliation Commission.** **Council of States** **Local Governments.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**10,000,000**

By 2030, increase by 25% the number of rangeland policy and decision makers (indigenous communities and conservation experts -both in government and private sectors), rangeland managers, investors (ranchers) and other key stakeholders who are aware and well informed on transhumance related national policies, laws, regulations, local agreements and norms as well as charters and codes of transhumance practice.	Building local awareness on relevant transhumance: • National policies • National laws and regulations • Local agreements and norms • Charters and codes	Number of participants in the transhumance awareness on related national policies, laws, regulations, local agreements and norms as well as charters and codes of transhumance practice.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their equivalents at the National and State Governments.** **Land Commission.** **Council of States** **Local Governments.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**2,500,000**

Strategic Priority Area III: Institutional and Individual Capacity Building.

Strategic Goal 7: To Develop Relevant Rangeland Development and Management Institutions in Terms of their Identities, Functions, Governance and Organization.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, at least 30% of existing and new agencies / institutions dealing with rangeland development and management having their relevant and related laws, statutes, regulations, institutions' designs, visions, missions, values, strategies, action plans, rangeland resource use and target constituencies reviewed and / or enhanced, harmonized and aligned to enable them better function and delivery of their institutions' mandates. **By 2031, at least 40 % of institutions dealing with rangeland development and management at local, states and national levels to undertake regular monitoring and evaluations of internal and external changes.** **By 2031, establish at least 3 centers of excellence for rangeland development and management in the country.**	Five years' intervals of reviewing, re-defining and preparing improved institutions' legal bases/frameworks (laws, statutes, regulations and decrees), their models/designs, behaviors, communication, visions, missions, values, quality of products and services, staff orientation / motivation, strategies, action plans, monitoring and evaluations including **comprehensive rangeland resource use** and **stakeholder analysis** of target constituencies of key institutions / agencies focusing on rangeland resource development and management. The five years' interval review will in many ways be coupled with regular monitoring and evaluation of internal and external changes in institutions that develop and manage rangeland resources. The evaluation may involve independent evaluators or take the form of self-assessments which aim to analyze the relationships between organizations and beneficiaries (clients), examine the value added by comparing inputs and outputs, and identify organizations' internal strengths and weaknesses along with external opportunities and threats. On the other hand, monitoring and evaluation will focus on specific programs and projects in order to prepare steering decisions. Monitoring and evaluation will include data collection on qualitative and quantitative dimensions concerning achievement of objectives, applied methods, timing, use of material and human resources, and effects on the given economies, biophysical and socio-cultural environments.	Number of institutions / agencies dealing with rangeland development and management of whose related laws, statutes, regulations, their institutions' designs, visions, missions, values, strategies, action plans and target constituencies reviewed and/or enhanced, harmonized and aligned to enable better functioning and delivery of the institutions' mandates. Number of regular monitoring and evaluations undertaken at the local, state and national levels. Number and type of significant initiatives at the national and state levels geared towards strengthening the role of the scientific research and professional institutions, civil societies, NGOs and media focused at rangelands and biodiversity conservation including improvement of scientific technologies for rangeland research and development.	**All Ministries at the National and State Governments.** **Ministry of Public Service & Human Resource Development.** **Council of States.** **Local Government Board.** **Local Governments** **Rangeland users, Private Sector and Investors.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**5,500,000**

	The above activities will also be followed by initiative geared towards strengthening the role of the scientific research and professional institutions, civil societies, NGOs and media focused at rangelands and biodiversity conservation including improvement of scientific technologies for rangeland research and development. The above initiatives will also involve strengthening of the existing research, training and extension institutions as centers of excellence in rangeland development and management, and improve coordination among them.	Number of newly supported and established centers of excellence for rangeland development and management in the country.			
By 2031, at least 40% of existing and new agencies / institutions dealing with rangeland development and management having their relevant and related management structures, systems and procedures reviewed and aligned in order to enhance their organization and governance for better delivery of their mandates.	Review and align structures, systems and procedures of key institutions focusing on rangeland resource development and management.	Number of key institutions focusing on rangeland resource development and management whose structures, systems and procedures have been reviewed and aligned in order to enhance their organization and governance for better delivery of their mandates.	**All Ministries at the National and State Governments.** **Ministry of Public Service & Human Resource Development.** **Council of States.** **Local Government Board.** **Local Governments** **Rangeland users, Private Sector and Investors.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**3,500,000**

Strategic Goal 8: To Mobilize Financial, Material and Technological Resources for Rangeland Resources Development and Management.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, at least 40% of existing and new agencies / institutions dealing with rangeland development and management having been supported to develop long-term strategic plan for resource development and trained on how to use sound marketing and fund-raising practices.	Supporting key institutions involved in rangeland development and management in developing long-term strategic plans for resource (financial, material and technological) development / mobilization and training them on how to use sound marketing and fund-raising practices in order to enable them achieve stability, sustainability and increase resources needed for their activities.	Number of key institutions involved in rangeland development and management that have been supported to develop long-term strategic plan for resource development and trained on how to use sound marketing and fund-raising practices.	**All Ministries at the National and State Governments.** **Ministry of Public Service & Human Resource Development.** **Council of States.** **Local Government Board.** **Local Governments** **Rangeland users, Private Sector and Investors.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**2,500,000**
By 2025, at least 30 % of existing and new rangeland development and management institutions at national and State levels to have been supported to design and roll-out revenue / income generation initiatives for their sustainability and effective realization of their mandates.	Supporting rangeland development and management organizations / institutions to design and establish effective revenue-generating projects. The revenue generation initiative should involve products and/or services which are not only profitable and of real social value (e.g. sustainable rangeland development and management), but also which supports the organization's mission.	No of revenue generation initiatives designed and established. Number of organizations at national, state and local levels which have been supported to design and establish revenue generation initiative.	**All Ministries at the National and State Governments.** **Ministry of Public Service & Human Resource Development.** **Council of States.** **Local Government Board.** **Local Governments** **Rangeland users, Private Sector and Investors.**	**2022-2025**	**2,500,000**

	Income generating activities may include selling or leasing goods, services or property. They may range from renting out space in buildings to providing services for a fee, from cause-related marketing with corporate partners to running businesses.		Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2024; All national and State government to have developed and being implemented National or State Resource Mobilization Strategies and Action Plans for Sustainable Rangelands Development and Management. **By 2030, increase by 30% the amount or quantity of mobilized and allocated funds, material and technological resources for infrastructure / physical work, private sector and local institutions capacity building in sustainable rangeland development and management, climate change adaptation, as well as local community climate change adaptation and resilience initiatives at the national, state and local levels.**	Using consultative forums and meeting between rangeland resource development and management stakeholders as well as cross-sectoral partners, support national and state Governments prepare and implement comprehensive Resource Mobilization Strategy and Action Plan for sustainable rangelands development and management. After preparation of comprehensive Resource Mobilization Strategies and Action Plans for sustainable rangelands development and management, mobilize and allocate funds, material and technological resources for infrastructure / physical work, private sector and local institutions capacity building in climate change adaptation, as well as local community climate change adaptation and resilience initiatives.	Developed and being implemented National and State Resource Mobilization Strategies and Action Plans for sustainable rangelands development and management. Amount in USD and quantity of mobilized and allocated funds, material and technological resources for infrastructure / physical work, private sector and local institutions capacity building in sustainable rangeland development and management, climate change adaptation, as well as local community climate change adaptation and resilience initiatives at the national, state and local levels.	**All Ministries at the National and State Governments.** **Ministry of Public Service & Human Resource Development.** **Council of States.** **Local Government Board.** **Local Governments** **Rangeland users, Private Sector and Investors.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2024**	**20,500,000**

Strategic Goal 9: To Raise the Level of Knowledge and Skills for the Individual and Teams Involved in Rangeland Development and Management.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2026, a National Rangeland Development and Management Research and Training Fund Established.	Establishment of Rangeland Development and Management Training and Research Fund for enhanced capacity in rangeland development and management in the country.	An established National Rangeland Development and Management Training and Research Fund.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Rangeland users, Private Sector and Investors. Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2026**	**5,000,000**
By 2031, increase by 30% the number of supported Universities and Technical and Vocational Education and Training (TVET) institutions in rangeland training and capacity building in terms of funds, physical and human resources. **By 2031, increase by 30% the number of personnel from Universities, TVETs**	Support Universities and Technical and Vocational Education and Training (TVETs) to develop and deliver rangeland resource development and management curricula.	Number of newly supported Universities and Technical and Vocational Education and Training (TVETs) in terms of funds, physical and human resources. Number of personnel from Universities, TVETs and other government departments trained in rangeland development and management. Number of new Universities and TVETs offering rangeland	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Rangeland users, Private Sector and	**2022-2031**	**200,000,000**

and other government departments trained in rangeland development and management. **By 2031, increase by 20% the number of Universities and TVETs offering rangeland development and management capacity building programs after being supported to do so.** **By 2031, increase by 50%, the amount of funds allocated and number/ quantity and type of physical and human resources allocation/ support to Universities, TVETs and other government departments training in rangeland development and management.**		development and management capacity building programs after being supported to do so. Amount of new funds allocated and number / quantity and type of physical and human resources allocation / support.	Investors. Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 25%, the number of supported initiatives geared towards co-generation of knowledge, skills and technology through integration of indigenous knowledge in rangeland development and management research, training, extension and interventions.	Co-generation of knowledge, skills and technology through integration of indigenous knowledge in rangeland development and management research, training, extension and interventions.	Number of newly supported initiatives geared towards co-generation of knowledge, skills and technology through integration of indigenous knowledge in rangeland development and management research, extension and interventions.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland users, Private Sector and Investors.**	**2022-2031**	**3,500,000**

			Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 40% the number and type of trainings and awareness creation/advocacy sessions /programs to natural resource and rangeland resources' researchers, analysts, policy makers, decision makers, communities and rangeland managers, both at the national and State levels. **By 2031, increase by 30% the number and category of people sufficiently trained in rangeland development and management at national and state levels.**	Train natural resource and rangeland resources' researchers, analysts, policy makers, decision makers, communities and rangeland managers in participatory land use planning (PLUP), participatory rangeland management planning (PRMP), sustainable land management (SLM), sustainable rangeland management (SRM), Carbon Trading (CT) and other Payment of Ecosystem Services (PES) approaches as incentives to the communities to engage in Sustainable Rangeland Management (SRM) for increased carbon sequestration and to ensure Land Degradation Neutrality (LDN). Train/educate pastoralist and other types of rangeland users and managers about sustainable ways to use natural resources, for example: understanding and control of wildlife poaching; selective burning; modern bee keeping to reduce fire burning; improved (climate smart) land and livestock management system involving re-introduction of planned rotational grazing and corralling of livestock, that used to characterize traditional livestock management systems (TLMSs); in addition, the participants will be trained on how to integrate and use within the TLMS sett-up, information and communication technology (ICT) for data capture and impact monitoring and a better	Number and type of trainings and awareness creation/advocacy sessions to natural resource and rangeland resources' researchers, analysts, policy makers, decision makers, communities and rangeland managers. New number and category of people trained on rangeland development and management at national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**60,000,000**

	understanding of the ecological characteristics of the savannah ecosystem and how it is impacted by climate change. The training will also involve instructing and guiding the communities on how to develop sustainable grazing plans (SGPs) that will enhance efficient land and livestock management and as a foundation for collective action and improved governance. Officers in extension services will be included so that they also play their facilitative part more effectively and in collaboration with the community they serve. The above will also involve creating awareness and advocacy on national, state and local policies, regulations, agreement and norms as well as training lower cadre staff to provide extension services on rangeland management.				
By 2031, increase by 20% the number and type of researches, scientific and technological development (discoveries) as well as innovations related to rangelands development and management accomplished in the country.	Carrying out rangeland resource development and management related research; scientific and technological development including innovations and sharing it with policy / decision makers, other experts and rangeland communities. The research evidence will also be used to change the negative narratives and misconceptions about rangeland (RE) ecosystems and pastoral production system (PPS).	Number and type of researches, scientific and technological development (discoveries) as well as innovations related to rangelands development and management accomplished in the country. Number of new and key researches whose findings have been effectively used to change the negative narratives and misconceptions about rangeland (RE) ecosystems and pastoral production system (PPS).	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**50,000,000**

			Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 25% the number and type of awareness raising and trainings programs / projects undertaken to deepen understanding of rangeland ecosystems and pastoral production system (PPS) among communities, experts and decision makers.	Awareness raising and deepening understanding of rangeland ecosystems and pastoral production system (PPS) among communities, experts and decision makers. Especial awareness creation and training will be directed in overcoming the challenge of livestock industry in the rangeland being built around traditional social model in the country.	Number and type of awareness raising activities and trainings undertaken to deepen understanding of rangeland ecosystems and pastoral production system (PPS) among communities, experts and decision makers.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Rangeland users, Private Sector and Investors. Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**8,000,000**
By 2031, increase by 30% the number of robust rangeland resource development and management knowledge management frameworks / platforms in the country.	Establishing national, state and local levels' rangeland resource development and management knowledge management systems / platforms like multi-stakeholder Digital Knowledge Management System (DKMS)and Indigenous Knowledge Management Systems (IKMS) among others including adoption of provisions of the below three main knowledge management approaches within initiatives for rangeland development and management, these are: The Knowledge-based Economies (KBE) Model of the World Bank; The	Levels, type and number of rangeland resource development and management knowledge management frameworks / platforms newly established in the country.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Rangeland users, Private Sector and Investors.	**2022-2031**	**15,000,000**

	Knowledge-Based Development (KBD) Model of the Asian Development Bank and The Knowledge for Poverty Alleviation (KPA) Framework by Community and Corporate Learning for Innovation (CCLFI) and Peace and Equity Foundation (PEF), Philippines.		Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 25% the major biodiversity and rangeland development and management decision making processes which are clearly influenced and / or informed by scientific information, research	Significant increase in the contribution of scientifically-based information into biodiversity and rangeland development and management decision making processes and management interventions.	Type and times new and innovative scientific information and findings are used at national and state levels in defining and shaping major biodiversity and rangeland development and management decision making processes and implementation of resultant management interventions.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Rangeland users, Private Sector and Investors. Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**2,000,000**
By 2021, increase by 30% the number of trained key national, state and local rangeland resource development and management managers on supplementary organizational requirements and skills that shall include: strategic planning, designing and implementing appropriate	Train key national, state and local rangeland resource development and management managers on supplementary organizational requirements and skills that shall include: strategic planning, designing and implementing appropriate organizational structures and operating systems, developing and operationalizing tools such as partnership frameworks, linkages and networking platforms, among other	The number of trained key national, state and local rangeland resource development and management managers on supplementary organizational requirements and skills that shall include: strategic planning, designing and implementing appropriate organizational structures and operating systems, developing and operationalizing tools such as partnership frameworks, linkages and networking platforms, among other	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)	**2022-2031**	**3,000,000**

organizational structures and operating systems, developing and operationalizing tools such as partnership frameworks, linkages and networking platforms, among other tools.	tools.	tools.	Rangeland users, Private Sector and Investors. Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		
By 2031, increase by 25% the number of extension officers consulting pastoralists in order to develop strategic plans for market opportunities for the pastoral communities.	Extension staff regularly consulting pastoralists, researchers and pastoralists' representatives in order to develop strategic plans that identify specific market opportunities for products with potential for local socio-economic and ecological success.	Level or percentage of extension officers consulting pastoralists in order to develop strategic plans for market opportunities for the pastoral communities.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**3,000,000**
By 2031, each County in the rangelands to have designed, developed and operationalized at least two type of Pastoralists Participatory Learning and Actions (PPLAs) – Platform	Designing and implementing state and local levels Pastoralists Participatory Learning and Actions (PPLAs) – Platforms/Frameworks. The PPLAs platforms could be inform of Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA),	Type and Number of Pastoralists Participatory Learning and Actions (PPLAs) platforms / Frameworks prepared and being implemented at state and local levels. Number of local, state, national,	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their**	**2022-2031**	**3,500,000**

/ Framework.	Participatory Action Research (PAR), and Farming Systems Research (FSR). The common theme/agenda will be the full participation of pastoralists in the processes of learning about their needs and opportunities, and in the actions required to address them. Pastoralists Participatory Learning and Actions (PPLAs) platforms/frameworks will in essence enable sharing of best practices and lessons learned as well as enabling members to undertake local, state, national, regional and international visits and exchanges in order to enhance understanding in sustainable rangeland development and management.	regional and international visits and exchanges undertaken in order to enhance understanding in sustainable rangeland development and management for individuals and organizations.	**equivalents at the National and State Governments.** **Land Commission.** **Council of States** **Local Government Board.** **Local Governments.** **Rangeland users, Private Sector and Investors.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.		

By 2031, have a robust national Pastoral Innovation System / framework (PISs). Each State to have strong PIS which is unique to the State's rangelands trends, gaps and opportunities and which also offer seamless linkages with other national and States rangelands' PISs. **By 2031, each State to conduct at least 2 joint researches, trainings, conferences, meetings, awareness creation events, and policy review events within the State's PIS.**	Creating robust state level Pastoral Innovation Systems (PISs). The PISs should be characterized by formation of networks of relevant rangelands' development and management organizations focused on bringing innovative and new technologies, products, services, new processes and new forms of organization into social, and economic and ecological use, together with the institutions and policies that affect their behavior and performance in rangeland resources development and management. The PIS is also expected to improve linkage between research and extension through close collaboration of rangeland research network and communities of practice. In this regard, the following will be enabled / undertaken: a) Extension officials promoting/facilitating transfer and utilization of technologies associated with efficient / sustainable rangeland production systems. b) Extension officials promoting/facilitating use of most efficient agricultural practices and sustainable natural resources management practices in rangelands. On the other hand, PIS will facilitate or enable creation of ongoing dialogues with key stakeholders and the different groups and individuals who have an interest in rangeland resources development and management.	Number of new and innovative rangeland development and management technologies, products, services, processes and market organizations at state and country levels. Level or percentage of maturity / robustness of the state and national levels Pastoral Innovation Systems (PISs). Joint research and development, trainings, conferences, meetings, awareness creation events, policy reviews among other initiatives undertaken within the framework of national or state levels PISs. Type and number of state or local levels extension officials' initiatives towards promoting/facilitating transfer and use of technologies associated with efficient / sustainable rangeland production systems. Type and number of efficient agricultural practices and sustainable natural resources management practices that have been adopted after facilitation/promotion by extension officials**.** Number and type of key stakeholders' dialogues established and ongoing at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland users, Private Sector and Investors.** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**4,000,000**

By 2031, at county level develop and operationalize at least one rangeland development and management State-and-Transition Model (STMs) integrated or informed by local knowledge and expert field ecological data.	Using local knowledge in rangeland resources development and management by way of using participatory workshops to integrate State-and-Transition Models (STMs) created with local knowledge and expert field ecological data. State and local levels STMs shall depict current understanding of vegetation dynamics, and hence outreaching for local knowledge on rangelands dynamics and management shall be important.	Number of state and local levels STMs created and adopted for rangeland resources development and management.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Trade & Industry; Ministries of Peace Building or their equivalents at the National and State Governments.** **Land Commission.** **Council of States** **Local Government Board.** **Local Governments.** **Rangeland users, Private Sector and Investors.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**3,500,000**

Strategic Priority Area IV: Biodiversity Conservation and Climate Change Mitigation and Adaptation

Strategic Goal 10: To Effectively Establish and Manage Protected Areas in Rangelands					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, increase by 20% the area or number of protected areas (PAs) in the country. **By 2031, national and States governments to have carried out at least 1 PAs systems situational analysis with the support or in consultation with rangeland development and management stakeholders.**	Rangeland development and management stakeholders to support national and state governments' carryout situational analysis (SAs) of the state of the protected areas (PAs) management systems and they are expected to guide the development of programs and projects for effective management of the PAs. The situation analysis would also rationalize the PAs management system as they exist currently, whether they encompass all critical biodiversity rich habitats/range including migratory corridors. After the situational analysis (SAs) of the state of the protected areas (PAs) management systems; relevant national and state governments' entities will consult and delineate and establish new PAs for conservation and management.	Number of PAs systems situational analysis undertaken at the national or state levels with the support of or in consultation with rangeland development and management stakeholders. Percentage of newly established protected areas (PAs).	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)	**2022-2031**	**150,000,000**
By 2031, increase by 20% financial support and number of effective initiatives / projects / programs undertaken to reduce enclaving activities which affect processes inside protected areas (at national, state and local levels). **By 2031, increase by 20% the number of buffer zones established around protected areas (PAs) in the rangelands**	In collaboration with government agencies dealing with biodiversity conservation and protection as well as rangeland communities and other key stakeholders, effectively reduce *enclaving* activities which constitute poor management outside of protected areas which affect processes inside protected areas. Activities to be undertaken more vigorously will include preventing hunters of large mammals and rarer and more valuable species such as rhino and big cats, establishing buffer zones around protected areas – the buffer zones management will constitute application / implementation of *ecological principles* in land use and natural resource management (NRM). In addition, functioning of the buffer zones will be regularly be	Type and number of effective initiatives / projects /programs undertaken to reduce enclaving activities which affect processes inside protected areas (at national, state and local levels). Number of new buffer zones established around protected areas (PAs) in the rangelands	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)**	**2022-2031**	**50,000,000**

at the national, state and local levels.	monitored and assessed.	at the national, state and local levels.	Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)		

Strategic Goal 11: To Promote Habitat Restoration in Degraded Rangelands					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, Declare approximately 20% of the country's natural forests as reserve forest. **By 2031, decrease by 20% the hectares (size) of major habitats conversions and fragmentation stopped by among other the initiatives related to sustainable rangelands development and management in the country (at national, state and local levels).**	In collaboration with government agencies dealing with biodiversity conservation and protection as well as rangeland communities and other key stakeholders; significantly reduce and control/manage *habitat conversion* and the *resulting fragmentation*.	Type and hectares (size) of major habitats conversions and fragmentation stopped due to the initiatives related to sustainable rangelands development and management in the country (at national, state and local levels).	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments**. **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)	**2022-2031**	**10,000,000**
By 2031, plant about 10 million trees of different species in rangelands (each of the rangelands' state to plant at least 3 million trees) **By 2031, increase by 30% the number of sustainable rangeland management (SRM) activities geared towards habitat restoration**	In collaboration with government agencies dealing with biodiversity conservation and protection as well as rangeland communities and other key stakeholders, carry out activities geared towards *habitat restoration* which will include the following activities among others: Recovery by way of preserving, re-introduction of lost species and/or increasing the number of threatened and endangered species; reconnection of hydrological connections within wetlands; burning or removal by other means invasive vegetation;	Type and number of newly introduced sustainable rangeland management (SRM) activities geared towards *habitat restoration* at the national, state and local levels. Percentage of increase of above ground forage biomass per hectares of land. Increase in the number of months	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and**	**2022--2031**	**30,000,000**

at the national, state and local levels. **By 2031, increase by 25% the availability of improved and quality fodder / pasture.**	introduction of *livestock grazing systems* compatible with wildlife; fencing to exclude cattle; vegetation planting to control soil erosion; fertilization of existing vegetation to encourage growth; control of exotics and others undesirable species as well as carrying out ***prescribed or allowed burning, creation of fire line, early burning of fire by the local communities - that is by December or January and practicing modern bee keeping to reduce fire burning*** **and in o**rder to have controlled fires. Other interventions shall include: •Carry out national rangeland survey on the fodder / grass resources and their characterization in South Sudan. •Range reseeding through agro-silvo-pastoral systems (ASPSs) involving indigenous grasses (***more especially propagation of Climate Smart Brachiaria Grasses {CSBGs})***, multipurpose trees and shrubs to restore diversity, stabilize the soil, improve rangeland condition and pasture quality; •Establishments of seed system through multiplication and bulking of indigenous grass and tree seeds for rehabilitation of rangelands; •Participatory grazing management and rangelands management planning for restoration and rehabilitation of degraded rangelands; •Integrating Sustainable Land Management (SLM) (through soil and water conservation techniques, enclosures); •Rehabilitation of rangelands along stock routes/migration routes and provision of services along the routes e.g. veterinary services, water points, and supplementary fodder; •Promotion of fodder production and bulking modelled around the traditional pasture reservation, and where possible both rain-fed or irrigated commercial production; •Support private sector participation in commercialized fodder production;	of pasture and water availability. Percentage increase in improved range health and condition. Percentage increase in availability of improved and quality fodder / pasture.	**rangeland managers)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)		

	•Support on-station and on-farm research on fodder production and conservation; In a nut shell; activities geared towards ***habitat restoration (HR)*** will involve implementation of best rangeland management practices that ***maximize ecosystem processes*** and ***enhance sustainable livelihoods*** at landscape or ecosystem level.				
By 2031, Identify at least 20% more of the current identified "keystone" species and raise the levels of priority assigned to them as well as increase the level of progress in their conservation and restoration by at least 50% based on historical data and models at the national, state and local levels.	In collaboration with government agencies dealing with biodiversity conservation and protection as well as rangeland communities and other key stakeholders, effectively identify *'keystone' species* and assign priorities for conservation. "Keystone" or basically key species shall be defined in terms of their *greater influence on the functioning of ecosystems*. One example of such a species is ***mycorrhizal fungi***. These organisms exchange carbon fixed by green plants for enhanced uptake of phosphorus and their absence may severely inhibit recovery of about 90% of the green plants that interact with them. Repeated fires can lead to extinction of mycorrhizae and impede re-establishment of shrubs and perennial grasses over large areas. Keystone species can also be small mammals for example, without kangaroo rats, shrub grassland can quickly change into open grassland as the digging of these rodents favors establishment of shrub seedlings and without them, grass competitively squeezes out shrubs.	Number of "keystone" species identified and levels of priority assigned to them as well as the level (%) of progress in their conservation and restoration - based on historical data and models at the national, state and local levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Environmental Management Authority (EMA)** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs	**2022-2031**	**5,000,000**

			and Civil Societies involved with rangelands.		
By 2031, increase by 20% the number of constructed and well-spaced artificial water sources which are at least 10km widespread in the pastoral arid and semi-arid rangelands (at national, state and local levels). **By 2031, carry at least 1 research / study in each local government area (county) which is focused at understanding, improving and promoting uptake of traditional patterns of land use and indigenous pastoral production knowledge and systems.** **By 2031, carry at least 1 research / study in each local government area (county) which is focused at understanding, improving and promoting uptake of integrated state-and-transition, rangeland health, and climate-plant-herbivory grazing models.**	In collaboration with government agencies dealing with biodiversity conservation and protection as well as rangeland communities and other key stakeholders, effectively ***control grazing pressure***. Examples of actions to be taken include: Construction of well-spaced artificial water sources which are at least 10km widespread in the pastoral arid and semi-arid rangelands or use sponsored water bowsers aligned with government investments in new water access which will enable herders to access to specific groundwater resources identified as sustainable by experts. More closely spaced and extremely wide spread natural and artificial water sources would promote land degradation from resultant grazing patterns; promotion and establishment of grazing systems or patterns that are spatially heterogeneous rather than uniform especially where biodiversity becomes a consideration – some of the activities towards establishing grazing systems or patterns that ensure sustainable rangeland management shall include: - Studying and where practical improve *traditional patterns of land use* and *indigenous pastoral production system*; and studying and where feasible improve non-equilibrium grazing models (e.g., state-and-transition, rangeland health, and climate-plant-herbivory models) and use them in an integrated manner for the grazing systems in the country – key among the above grazing systems / models will be to study and understand how interactions among climate, plants, and grazing influence the dynamics of the vegetation in the country's rangelands. ***Grazing pressure*** could also be addressed by	Number of constructed and well-spaced artificial water sources which are at least 10km widespread in the pastoral arid and semi-arid rangelands (at national, state and local levels). Number of researches / studies focused at understanding, improving and promoting uptake of *traditional patterns of land use and indigenous pastoral production system* (at national, state and local levels). Number of researches / studies focused at understanding, improving and promoting uptake of state-and-transition, rangeland health, and climate-plant-herbivory grazing models (at national, state and local levels).	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) Other relevant Departments, Commissions and Agencies. Development Partners, NGO, CBOs and Civil Societies involved with rangelands.	**2022-2031**	**10,000,000**

	reducing stocking rates and in the process improve overall livestock productivity.				
By 2031, increase by 30% the number of cross-sectoral and joint consultative biodiversity planning and design meetings / fora held by rangeland resource management and development stakeholders together with other sectors stakeholders at the national, state and local levels. **By 2030, increase by 20% the number of jointly harmonized agreements / conventions, policies, programs, projects and initiatives to address biodiversity protection and conservation at the national, state and local levels.**	Using rangeland resource management and development stakeholders at the national, state and local levels in enhancing and improving the coordination mechanisms in the Natural Resource and Rural Development (NRRD) sectors by way of holding cross-sectoral joint consultative and biodiversity planning and design meetings / for a (including such coordination meetings like Livestock Coordination Meetings {LCMs}, in order to synergize and synchronize policies, programs and projects programming and implementation - much needed to address the cross-cutting nature of biodiversity management. This will also enhance linkages between the national, state and local Governments.	Number of cross-sectoral and joint consultative biodiversity planning and design meetings / fora held by rangeland resource management and development stakeholders together with other sectors stakeholders at the national, state and local levels. Number of jointly harmonized agreements / conventions, policies, programs, projects and initiatives to address biodiversity protection and conservation at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies.	**2022--2031**	**3,500,000**
By 2031, increase by 20% the number of successful lobbying and advocacy initiatives that has led to effective mainstreaming of biodiversity protection, conservation and sustainable use into the National Economic Development Plans and Budget Framework Papers, and in State Development	Lobbying and advocacy by rangeland resource management and development stakeholders as well as cross-sectoral partners in biodiversity protection, conservation and sustainable use mainstreaming into the National Economic Development Plans and Budget Framework Papers, and in State Development Plans.	Number of successful lobbying and advocacy initiatives that has led to effective mainstreaming of biodiversity protection, conservation and sustainable use into the National Economic Development Plans and Budget Framework Papers, and in State Development Plans.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)**	**2022--2031**	**4,500,000**

Plans.			**Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies.		
By 2025, Establish and operationalize an Integrated National Biodiversity Monitoring, Evaluation, Reporting and Verification System (INB-MERVS) well focused in rangelands.	Using consultative forums and meeting between rangeland resource development and management stakeholders as well as cross-sectoral partners design and operationalize an integrated national biodiversity monitoring, evaluation, reporting and verification system (MERVS). An appropriate and effective monitoring, evaluation, reporting and verification system (MERVS) will be important in promoting implementation of best practices that **maximize ecosystem processes** and **sustainable livelihoods** at landscape or ecosystem levels in the rangelands.	Established and operational Integrated National Biodiversity Monitoring, Evaluation, Reporting and Verification System (INB-MERVS) focused in rangelands is established.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Environmental Management Authority (EMA)** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.**	**2024-2025**	**7,000,000**

			Other relevant Departments, Commissions and Agencies.		
By 2025, increase by 25% the number of relevant rangeland development and management policies, legislations, plans, programs and projects reviewed and aligned with NBSAP both at national and state levels.	Using consultative forums and meeting between rangeland resource development and management stakeholders as well as cross-sectoral partners, support national and state Governments in reviewing relevant policies, legislations, plans, programs and projects to align and maximize synergies with National Biodiversity Strategy and Action Plan (NBSAP).	Number of relevant policies, legislations, plans, programs and projects reviewed and aligned with NBSAP both at national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies. Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)	**2022-2025**	**8,000,000**
By 2026, have developed and being implemented National and States Strategy and Action Plans on Invasive Alien Species (SAPIAS).	Using consultative forums and meeting between rangeland resource development and management stakeholders as well as cross-sectoral partners including technical support from *IUCN Invasive Species Specialist Group (ISSG),* facilitate national and state Governments prepare and implement comprehensive Strategy and Action Plans on Invasive Alien Species (SAPIAS).	Developed and being implemented National and State levels Strategy and Action Plans on Invasive Alien Species (SAPIAS).	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage** **or their equivalents at the National and State Governments.** **Council of States.** **Environmental Management**	**2022-2026**	**5,000,000**

			Authority (EMA) **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 30% the extent of cover and diversity of desirable range species. **By 2031, increase by 25% the acreage of reclaimed/ restored rangelands from invasive alien species**	Actual controlling and management of invasive plant species to ensure restoration of rangeland ecosystem structure and functioning. This will involve the following activities: •Rangelands characterization and mapping spatial coverage of invasive species and their impacts; •Promoting research to guide invasive species management and use (alternative uses and management e.g. comparative studies on control by utilization versus eradication, as well as the economics of invasive species to inform management interventions); •Form national and state task forces and action plans for control of invasive plant species; •Scale up good practices in invasive species control and management by making use of lessons from previous and on-going projects in the country.	Percentage of increase in aboveground forage biomass per hectares of land. Percentage of increase in the extent of cover and diversity of desirable range species. Increased acreage of reclaimed/restored rangelands from invasive alien species.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Environmental Management Authority (EMA)** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and**	**2022-2031**	**15,000,000**

			rangeland managers) **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies.		

Strategic Goal 12: To Prepare for and Adjust to Both the Current Effects or Benefits of Climate Change and the Predicted Impacts or Opportunities in the Rangeland.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, national and State governments to have undertaken at least 2 rangeland climate change vulnerability assessments (RCCVAs).	Carrying out five years' interval rangeland climate change vulnerability assessments (RCCVAs) at the national and state levels. RCCVAs will involve a thorough evaluation of adaptive capacity (AC) of ecosystems, humans, and institutions to adjust to potential damage and to take advantage of opportunities in rangeland. RCCVAs will lead to more understanding on the interdependent nature of the socio-ecological rangeland system which shall be key to understanding and facilitating adaptation in rangeland systems. RCCVAs shall provide knowledge of vulnerability in rangeland systems and hence deliver the foundation upon which to base adaptation strategies. In addition to assessing socio-economic and biophysical vulnerabilities, gender related vulnerabilities shall also be assessed.	Number of rangeland climate change vulnerability assessments (RCCVAs) carried out at the national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**20,000,000**
By 2026, national and State governments to have designed, prepared and implementing Rangelands Climate Change Adaptation Plans (RCCAPs)	Informed by RCCVAs and borrowing strategic actions from National Adaptation Programmes of Action (NAPA) 2016, develop and implement national and state levels Rangelands Climate Change Adaptation Plans (RCCAPs). RCCAPs will be implemented with recognition of future uncertainty that necessitates an iterative implementation process as new experience and information accumulate.	Number of Rangelands Climate Change Adaptation Plans (RCCAPs) developed and being implemented at the national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. private sector, rangeland users, investors and rangeland managers)**	**2022-2026**	**25,000,000**

			Development Partners, NGO, CBOs and Civil Societies involved with rangelands. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 30% the number and types of rangeland related drought and flood risk management (DFRM) actions undertaken at the national, state and local levels. **By 2031, increase by 30% the financial, technical and physical resources towards implementation of rangeland related drought and flood risk management (DFRM) actions including contingencies provisions at the national, state and local levels.** **By 2027, the national and State governments to have prepared new DFEWSs and where they exist, they be strengthened.** **By 2027, all national and State governments to**	Within the provisions of RCCAPs, integrate and implement robust rangelands drought and flood risk management (RDFRM) actions; these actions shall include the following among others: strengthening existing national, state and local levels drought and flood early warning system (DFEWS) more especially in improving **hydro-meteorological monitoring network** and contingency funds to permit early action in case of pending drought or flood. After development of DFEWS and identification of rangelands drought and flood risk management (RDFRM) actions; formulate at national and State levels rangelands drought and floods risk management systems (RDFRMS) and emergency responses plans (ERPs). RDFRMS and ERPs will also be integrated or infused with the principles of Ending Drought Emergencies (EDE). The Summit of Heads of State and Government in September 2011 coined the phrase 'Ending Drought Emergencies' (EDE). The formulated Common Programme Framework to End Drought Emergencies shall also incorporate the provisions of IGAD's Drought Disaster Resilience and Sustainability Initiative (IDDRSI), Sendai Framework for Disaster Risk Reduction and the UNFCCC climate change agreements.	Number and types of drought risk management (**DFRM**) actions undertaken at the national, state and local levels, key among the actions being development and operationalization of **DFEWS** and contingencies provisions. Number of formulated and operational rangelands drought and floods risk management systems (RDFRMS) and emergency responses plans (ERPs) at the national and State levels in the country. Amount of contingency funds allocated and provided for the operationalization of national and State levels rangelands drought and	**All Ministries at the National and State Governments.** **Global Framework for Climate Services (GFCS)** **World Meteorological Organization (WMO)** **Republic of South Sudan National Meteorological Services** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research)	**2023-2031**	**55,000,000**

have formulated and operationalized rangelands drought and floods risk management systems (RDFRMS) and emergency responses plans (ERPs) at the national and State levels in the country. **By 2031, increase by 25% the amount of contingency funds allocated and provided for the operationalization of national and State levels rangelands drought and floods risk management systems (RDFRMS) and emergency responses.** **By 2028, national and State governments to have designed, developed and operationalized Climate Risk Management Systems (CRMSs) in the rangelands.** **By 2031, have more that 60% of the staff operationalizing the CRMSs in rangelands trained and made aware of the CRMSs and how they work.**	Ending Drought Emergencies (EDE) activities will protect and create productive assets such as water sources and reserve pastures to cushion pastoralists against drought impacts. In additional and beyond identification and implementation of rangeland related drought and flood risk management (DFRM) actions; formulation of RDFRMS and associated ERPs as well as DFEWS; design, develop and operationalize national and state levels rangeland general ***Climate Risk Management System (CRMS).*** CRMS formulation will involve governments, communities and organizations seeking suitable information, tools and techniques to enable appropriate management decisions to be made. The CRMS will be accessible, dependable, usable, credible, authoritative, responsive, flexible and sustainable. Hence, CRMS shall be a collection of policies, generic processes and procedures of applying such information to climate risk decision making, including identification, assessment and prioritization of the risks followed by a coordinated and sustainable application of resources to reduce, monitor and control the probability and or impacts of detrimental effects. CRMSs at the national and state levels will use information derived from Global Framework for Climate Services (GFCS) which is developed and managed by the World Meteorological Organization (WMO) and partnering agencies (including Republic of South Sudan National Meteorological Services). The GFCS is designed to mainstream climate science into decision making at all levels and help ensure that every country and every climate-sensitive sector of society is well equipped to access and apply relevant climate information, enabling an adjustment of planning and decisions to optimize the given situation. The ultimate	floods risk management systems (RDFRMS) and emergency responses. ***Climate Risk Management Systems (CRMSs) d***esigned, developed and being operationalized in the rangelands at national and State levels. Number of participants trained and made aware of the CRMS and how it works at the national and State levels.	Other relevant Departments, Commissions and Agencies.		

	goal of GFCS is to: "Enable better management of the risks of climate variability and change at all levels, through development and incorporation of science-based climate information and prediction into planning, policy and practice." The CRMS will hence involve enhanced gathering of information and assessment by climate and weather researchers, experts (including relevant agencies), policy and decision makers as well as involvement of end users like pastoralists and agro-pastoralists whom shall be trained on how to read and interpret simple meteorological equipment / apparatus like rain gauges, thermometers, anemometer and weather vane as well as understanding climate and weather prediction by experts; they can do this as individuals or community groups. In order to enhance adoption and continuous improvement of the CRMS; there shall be continuous awareness creation and training of relevant government personnel, communities among other stakeholders.				
By 2031, increase by 25% the number of ecosystem-based adaptation (EbA) and community-based adaptation (CbA) initiatives like PES among others and livelihood diversification initiatives designed and successfully implemented in rangelands within national, state and local levels.	Promotion of Ecosystem-Based Adaptation (EbA) and Community Based Adaptation (CbA) measures like payment of ecosystem services (PES) approaches, interventions empowering local communities in rangelands to reduce their vulnerabilities and enhance livelihood diversification. EbA and CbA projects / interventions will be formulated in such a way that they will shall integrate adaptation needs from multiple sectors and pursue complementary activities; for example, projects concerned with increasing water availability to communities would be complemented by activities that promote water-efficient farming practices. On the other hand, EbA and CbA shall optimize use of the multiple resources in the rangelands through approaches such as community-based wildlife conservation as a way of diversifying sources of livelihoods through ecotourism.	Number of ecosystem-based adaptation (EbA) and community-based adaptation (CbA) initiatives like PES among others and livelihood diversification initiatives designed and successfully implemented in rangelands within national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g.**	**2022-2031**	**25,000,000**

			Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2031, Increase by 30% the number and size in hectares of projects / initiatives at national, state and local levels involved in afforestation, reforestation and agroforestry in rangelands. **By 2031, rate of loss of savannah woodlands / forests is at least halved (reduced by 50%) and where feasible brought close to Zero in rangelands**.	Under CbA and EbA frameworks, promote afforestation, reforestation and agroforestry in rangelands in order to reduce vulnerability to droughts and floods.	Number and size in hectares of projects / initiatives at national, state and local levels involved in **afforestation**, **reforestation** and **agroforestry** in rangelands. Reduction rate in % of the loss of savannah woodlands / forests is in rangelands.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**15,000,000**
By 2031, increase by 25% the number and size in hectares of projects / initiatives at national, state and local levels involved in sustainable use, management and	Under CbA and EbA frameworks; promote sustainable use, management and conservation of wetlands in South Sudan's rangelands, and more especially the Sudd swamp which is formed by the White Nile's Baḥr al-Jabal section and occupy an area approximately 57,000 km².	Number and size in hectares of projects / initiatives at national, state and local levels involved in sustainable use, management and conservation of	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.**	**2022-2031**	**30,000,000**

conservation of wetlands in South Sudan's rangelands.		wetlands in South Sudan's rangelands.	**Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 25% the number and types of climate-smart agricultural techniques, as well as area in hectares of rangelands covered by CSA to improve livelihoods and food security in rangelands at the national, state and local levels.	Under CbA and EbA frameworks; promote **climate-smart agricultural (CSA) techniques** to improve livelihoods and food security in rangelands.	Number and types of climate-smart agricultural techniques, as well as **area in hectares** of rangeland covered by CSA to improve livelihoods and food security in rangelands at the national, state and local levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.	**2022-2031**	**55,000,000**

			Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 25% the number and types of studies, evaluations and researches or capacity building (in terms of infrastructure and other physical and technical resources) and training initiatives conducted in order to increase livestock knowledge and improved animal health systems (AHSs) in order to reduce the vulnerability of pastoral and agro-pastoral communities to climate change at the national, state and local levels.	Under CbA and EbA frameworks; increase **livestock knowledge** and **improved animal health systems (AHSs)** at the national, State and local levels in order to reduce the vulnerability of pastoral communities to climate change.	Number and types of studies, evaluations and researches or capacity building (in terms of infrastructure and other physical and technical resources) and training initiatives conducted in order to increase livestock knowledge and improved animal health systems (AHSs) to reduce the vulnerability of pastoral and agro-pastoral communities to climate change at the national, state and local levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**50,000,000**
By 2031, increase by 30% the number and types of interventions / projects undertaken for enterprise and value chain development (VCD) in livestock and other sectors industries in rangelands in order to	Under CbA and EbA frameworks; carry out ***enterprise*** and ***value chain development (VCD)*** in livestock and other industries in rangelands in order to improve livelihoods and reduce vulnerability to climate change. ***Enterprise*** and ***value chain development will*** involve, among other interventions, improvement of market access and private sector participation to sell animals during the start of the dry season.	Number and types of interventions / projects undertaken for enterprise and value chain development (VCD) in livestock industry in rangelands in order to improve livelihoods and reduce	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.**	**2022-2031**	**40,000,000**

improve livelihoods and reduce vulnerability to climate change.		vulnerability to climate change.	**Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 40% the number of CbA and EbA initiatives in rangelands that are designed with one of the key focus being to promote conflict resolution and peace-building, consideration of gender equality and vulnerable groups at the national, state and local levels.	Under CbA and EbA frameworks, engage the **public entities**, **civil societies, NGOs, professional bodies, communities**, **private sector** and **local institutions** in designing and implementation of **adaptation projects** which promote conflict resolution and peace-building. This is because conflict resolution and peace-building are priority goals for South Sudan. It is recognized that climate change impacts, and the resultant competition for limited natural resources, may contribute to conflict between communities. Similarly, it is also recognized that ongoing conflict exacerbates the vulnerability of affected communities to climate change. Other principles that shall be followed include the following; including other principles included in **NAPA, 2016 (page 26-27):** • Gender equality should be considered in the design of adaptation projects. • Adaptation projects should target those groups most vulnerable to climate change impacts. This is because agro-pastoralists who rely on rain-fed subsistence agriculture, women-headed households, pastoralists in areas that are experiencing **desertification** and **internally displaced persons** (IDPs) are among the groups most vulnerable to climate change impacts in South Sudan.	Number of CbA and EbA initiatives designed with one of the key focus being to promote **conflict resolution and peace-building**, consideration of **gender equality** and **vulnerable groups** at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**10,000,000**

By 2031, increase by 40% the number and types of clearly identify, design and implement structural and physical related to rangeland climate change adaptation interventions at the national, state and local levels.	Under CbA and EbA frameworks, clearly identify, design and implement **structura**l and **physical** related interventions for example, engineering options for drought management which could include *new or enlarged reservoirs to store water (and in general improvement of water harvesting techniques), more efficient water delivery systems*, and *communications technology as cell phones and drought or flash flood warning systems*. Physical adaptation interventions will also include management of ecosystems and watersheds such as enhanced invasive species management, minimized soil erosion, and restoration of ecosystems after natural disturbances.	Number and types of clearly identify, design and implement **structura**l and **physical** related to rangeland climate change adaptation interventions at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**90,000,000**
By 2031, increase by 25% the number and types of clearly identify, design and implement *social adaptation option*s related to rangeland climate change adaptation interventions at the national, state and local levels.	Under CbA and EbA frameworks, clearly identify, design and implement **social adaptation options** which could include changes in the **rangeland enterprise operations** such as *supplemental feed*, *conservative stocking*, and *changing type of livestock* as well as options to *improve the adaptive capacity* of rangeland enterprise owners (pastoralists and agro-pastoralists)	Number and types of clearly identify, design and implement **social adaptation options** related to rangeland climate change adaptation interventions at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific**	**2021-2031**	**30,000,000**

			Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 20% the number of private sector and local institutions based and specific rangeland climate change adaptation strategies, action plans and practices which have been formulated and being implement at the national, state and local levels.	Under CbA and EbA frameworks, engage the **private sector** and **local institutions** in developing and implementing their rangeland climate change adaptation strategies, action plans and practices. Livestock enterprise owners (pastoralists and agro-pastoralists) and industries associated with these enterprises will be motivated to protect their financial investments under changing climate—*productivity of their land*, *value of their genetic stock*, *infrastructure supporting markets*, as well as the *markets themselves.* Undeniably, local institutions will be key actors in rangeland climate change adaptation, as they attempt to implement the top-down flow of governments' policies, such as programs to address responses to extreme climatic events.	Number of **private sector** and **local institutions** based and specific rangeland climate change adaptation strategies, action plans and practices which have been formulated and being implement at the national, state and local levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**10,000,000**
By 2031, increase by 40% the number and type of intentionally aligned and harmonized national, state and local governments' goals and objectives on rangeland climate change adaptation with community, private sector and local institutions' expectations / interests.	Alignment and harmonization of national, state and local governments' goals and objectives on rangeland climate change adaptation with community, private sector and local institutions expectations / interests. In some circumstances, communities, private sector and local institutions climate change adaptation actions may not be consistent with national and local government adaptation policies and in such circumstances governmental actions in response to extreme climate events could further exacerbate local adaptation efforts. All adaptation is local and no single adaptation	Percentage, number and type of intentionally aligned and harmonized national, state and local governments' goals and objectives on rangeland climate change adaptation with community, private sector and local institutions' expectations / interests.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)**	**2022-2031**	**3,000,000**

	approach works in all settings and hence rangeland climate change management actions rarely have been motivated by a single objective; consequently, adaptation options have been identified for managing plants, animals, and ecosystem processes along the lines of no-regret, low-regret, and win-win strategies.		**Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 20% the number and type of studies, researches and experiments undertaken at the national, state and local levels in order to increase scientific and technological information, knowledge and distill evidence regarding effective rangelands climate change adaptation.	Increase scientific and technological information, knowledge and distill evidence regarding effective rangelands climate change adaptation. This will be done by undertaking **action research** in strategic priority areas (SPAs) related to climate change adaptation including rangeland development and management capacity needs in order to establish a deeper evidence base. Quantitative and qualitative methods shall be used to capture ecological and social processes to bound uncertainty, and interdisciplinary research will be carried in order to integrate the ecological and the social components of rangeland systems. Through scientific and technological research on rangeland climate adaptation, aspects like vulnerability assessments and adaptation planning will be able to understand and integrate variations in the adaptive capacity of both ecological systems and the adaptive capacity of human systems. Also, through researches, uncertainties shall be quantified and bound in order for risks associated with climate change to be identified and prioritized. More researches shall go to the experimentation of proposed climate change adaptation management actions, this is because adaptation strategies are built on current **understanding** and **practice**, but they must recognize and attempt to incorporate future change. Through researches, field experimentation testing different proposed adaptation actions shall provide greater understanding of the likely success as well as offer comparisons of how natural systems might respond to	Number and type of studies, researches and experiments undertaken at the national, state and local levels in order to increase scientific and technological information, knowledge and distill evidence regarding effective rangelands climate change adaptation.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**35,000,000**

	the changing climate without adaptation treatments.				
By 2031, increase by 30% the number of researches / studies, consultative forums, conferences and meeting held at the national, state and local levels purposely to mainstream climate adaptation into rangeland development and management planning.	Mainstreaming climate adaptation into rangeland development and management planning at national, state and local levels.	Number of researches/studies, consultative forums, conferences and meeting held at the national, state and local levels purposely to mainstream climate adaptation into rangeland development and management planning.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**10,000,000**
By 2023, have a develop and robust Pastoralism and Policy Curriculum and registered with University of Juba, College of Natural Resources and Environmental Studies (or any other academic and research institution selected) too enable the training of individual herders, livestock owners, and agricultural	A **Pastoralism and Policy Curriculum** will be developed and registered with University of Juba, College of Natural Resources and Environmental Studies (or any other academic and research institution selected) too enable the training of individual herders, livestock owners, and agricultural extension staff to broaden their skill and knowledge base on integrated landscape management and impacts of climate change on rangelands and livelihoods. This is expected to professionalize herding and enhance the capacity of such herders and farmers to execute improved livestock management that is integrated with other ecosystem management activities such as land management,	Level of development and operationalization of a **Pastoralism and Policy Curriculum** in the country.	**All Ministries at the National and State Governments.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key**	**2022-2023**	**35,000,000**

extension staff to broaden their skill and knowledge base on integrated landscape management and impacts of climate change on rangelands and livelihoods.	monitoring of weather and ecological conditions, monitoring of diseases and infestations, as well as reducing the impact of predators and poachers.		**stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 35% the number of people adequately trained on rangeland climate change adaptation within the realities of uncertainty at the national, State and local county levels.	Training rangeland policy makers / decision makers, landowners, managers, researchers and extension experts on rangeland ***climate change adaptation within the realities of uncertainty.*** Additionally, special rangeland restoration teams will be trained and deployed to undertake bush clearing, erosion management and bush fodder production. An equal number of men and women in the target communities will be trained to undertake improved land and livestock management as well as interventions / projects impact monitoring and assessment.	Number and category of people trained on rangeland climate change adaptation within the realities of uncertainty at the national, State and local county levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**50,000,000**

By 2031, increase by 30% the number of sustainable grazing practices (SGPs) and their hectarage of implemented sustainable grazing practices (SGPs) in rangelands at national, state and local levels.	Promote sustainable grazing practices (SGPs) like **non-equilibrium grazing models** (e.g., state-and-transition, rangeland health, and climate-plant-herbivory models) in rangelands. Sustainable grazing practices will stimulate diverse plant communities and the development of healthy root systems, feed both livestock and soil biota, maintain plant cover at all times, and promote natural soil forming processes. Greater soil carbon increases adaptation capacity through improving soil physical properties (e.g. improved structural stability, erosion resistance, water-holding capacity and aeration), chemical properties (e.g. enhanced availability of micronutrients) and biological properties (e.g. enhanced faunal activity and species diversity) (Lal, 2004; FAO, 1995). These lead to greater forage production, and enhanced profitability, as well as the rehabilitation of degraded lands and the restoration of ecosystem services (water, biological diversity and land health). The risks associated with ***prolonged drought*** periods and unreliable rains can be offset by the increased water infiltration and retention associated with **organic matter accumulation** in the soil.	Type/model of sustainable grazing practices (SGPs) and hectarage of newly implemented sustainable grazing practices (SGPs) in rangelands at national, state and local levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies**. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**20,000,000**
By 2031, increase by 25% the size of rangeland population reached and the number of developed and conducted awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of *rangeland grazing systems* to livelihoods and	Developing and conducting awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of rangeland grazing systems to livelihoods and adaptation to climate change	Size of rangeland population reached and the number of developed and conducted awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of rangeland grazing systems to livelihoods	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.**	**2022-2031**	**10,000,000**

adaptation to climate change.		and adaptation to climate change.	**Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		

Strategic Goal 13: To Tackle the Causes and Minimize the Possible Impacts of Climate Change in the Rangeland.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2025, complete studies of stocktaking of the state of knowledge of the lower and upper limits of the potential for rangelands to sequester carbon above and below ground at the national and state levels.	Taking stock of the state of knowledge of the lower and upper limits of the potential for rangelands to sequester carbon above and below ground, through improved / sustainable grazing management (SGM). Planting perennial species (grasses, trees, shrubs) to reverse rangelands degradation over the next 10 years in the country.	Study of stocktaking of the state of knowledge of the lower and upper limits of the potential for rangelands to sequester carbon above and below ground undertaken at the national and state levels. Size in hectares of new rangelands planted with perennial species (grasses, trees, shrubs) to reverse rangelands degradation.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**20,000,000**
By 2031, increase by 25% the size in hectares of rangelands planted with perennial species (grasses, trees, shrubs) to provide nutritious forage for livestock and reverse rangelands	Promotion of **grazing management techniques** intended to increase **forage production** through increased **perennial species** (grasses, trees, shrubs) to reverse rangelands degradation over the next 10 years in the country. This has the potential to increase above and below	Number of new hectares planted with perennial trees, shrubs and bushes that provide nutritious forage for livestock and reversing rangelands degradation in rangelands at the national, state and local levels.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.**	**2022-2031**	**25,000,000**

degradation. **By 2031, Reduce the rate of deforestation by 50%.**	ground soil carbon stocks, and to restore degraded drylands. Perennial forage should be constituted of productive grasses, legumes and multipurpose trees that build carbon stocks and biological communities. The perennial species will also enable the grazing systems to less rely on annual grazing grasses like dry season grazing which composed mainly of ***Cenchrus biflorus*** and **Eragrostis tremula** of which the crude protein content is about 3.4%, much below the minimum required for livestock maintenance (Jaddalla, 1994). Perennial fodder trees and shrubs (***Acacia, Cadaba, Maerua*** etc) should be increased in order to be dry season source of livestock feed (pods, leaves and twigs). Propagation of some indigenous trees like *Acacia Senegal* would provide medicinal products like Gum Arabic which can be used as a remedy to various ailments in additional to enhancing agroforestry, biodiversity and income among the communities. On the other hand, promotion of drought tolerant grass and fodder species shall be important in addressing long dry periods. As per INC to UNFCCC, the biggest GHG emission reduction potential is in the forestry sector, so, in addition to increasing fodder related trees and legumes; more multipurpose trees should be planted. The agro-pastoralists will be encouraged to introduce agroforestry in rangelands and all communities in rangelands shall		**Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		

	be encouraged to use improved cook stoves and solar lanterns as well as reduce deforestation and accelerate afforestation and reforestation.				
By 2026, alternative future scenarios for rangelands developed at the national and state levels.	Establishing **alternative future scenarios for rangelands**, considering carbon gaps, anticipated climatic shifts, population, land tenure, land use pressures, trade-offs different management strategies and alternative policy scenarios.	**Alternative future scenarios** for rangelands developed at the national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2026**	**15,000,000**
By 2031, increase by 30% the size of rangeland population reached and the number of developed and conducted awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of rangeland grazing systems to livelihoods	Developing and conducting awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of **rangeland grazing systems to livelihoods** and **mitigation** of climate change, and hence the need of adopting sustainable grazing practices (SGPs).	Size of rangeland population reached and the number of developed and conducted awareness campaigns at national, state and local levels demonstrating the multifunctional contribution of rangeland grazing systems to livelihoods and mitigation of climate change	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)**	**2022-2031**	**15,000,000**

and mitigation of climate change.			**Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2028, have designed, developed and being implemented National Livestock-Based Nutrients Management System (NLBNMS) or program. **By 2031, increase by 25% the number of re-established and effective water cycles and watersheds at the national, state and local levels.** **By 2031, reach 30% of pastoralists or agro-pastoralists households with re-established effective water cycles and watersheds as well as through operationalized National Livestock-Based Nutrients Management System (NLBNMS) or program.**	Re-establish effective **water cycles** and **watersheds**, and manage livestock-based nutrients, while improving livestock keepers' livelihoods.	Number of re-established and effective water cycles and watersheds at the national, state and local levels. Designed, developed and being implemented **National Livestock-Based Nutrients Management System (NLBNMS)** or program. Number of pastoralists or agro-pastoralists households whom their livelihoods have been improved in the rangelands by specifically re-established effective water cycles and watersheds as well as through operationalized National Livestock-Based Nutrients Management System (NLBNMS) or program.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2024-2031**	**80,000,000**

By 2023, designed, developed and being implemented Low-Emission Development Strategy (LEDS) and Nationally Appropriate Mitigation Actions (NAMAs).	Supporting national development of a Low-Emission Development Strategy (LEDS) and Nationally Appropriate Mitigation Actions (NAMAs)	Designed, developed and being implemented **Low-Emission Development Strategy (LEDS) and Nationally Appropriate Mitigation Actions (NAMAs).**	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2023**	**5,000,000**
By 2031, increase by 15% the rate of implementation of Comprehensive Agricultural Development Master Plan (CADMP) and Irrigation Development Master Plan (IDMP) in rangelands at the national and state levels.	Supporting the effective and all-inclusive implementation of Comprehensive Agricultural Development Master Plan (CADMP), May 2015 and Irrigation Development Master Plan (IDMP), November 2015 in rangelands.	Level (in terms of %) of increase in the implementation of **Comprehensive Agricultural Development Master Plan (CADMP) and Irrigation Development Master Plan (IDMP)** in rangelands at the national and state levels.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific**	**2022-2023**	**45,000,000**

			Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2031, have a wider national adoption of existing best practices and technologies in livestock feeding, health and husbandry and manure management in rangelands and country wide in order for the national livestock sector to be more resilient and cut its emissions of greenhouse gases by as much as 20 %.	Effective management of livestock production and processing waste water, enteric fermentation and manure.	Reduction percentage (%) of GHG emissions from rangeland livestock production and processing activities.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**25,000,000**
By 2026, a National Wetland Inventory Undertaken and Report Prepared. **By 2031, about 30,000 participants from wetland management**	Effective conservation and management of RAMSAR wetlands in the rangelands; by way of: •Developing a National Wetland inventory by conducting detailed surveys, research and assessments of wetlands to generate data and	• Report for the Undertaken National Wetland Inventory. • Number of participants whom awareness on Ramsar wetland has been raised or enhanced through education and training.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.**	**2022-2031**	**50,000,000**

stakeholders, government agencies, pastoralists / agro-pastoralist and private sectors; attend wetland management awareness creation workshops or training sessions. **By 2031, increase by 25% provision of financial, material and technological support as well as technical expertise to the management of Sudd wetland.**	information for informed decision making in order to identify and map important wetlands for inclusions as wetlands of international importance under the Ramsar Convention. • Continuous awareness raising, participation and education among key stakeholders, government agencies, public and private sectors on the importance and contribution of wetlands to societies and ecosystems. • Provision of funds, grants, logistics, technical support and expertise among other resources.	• The level (in terms of %) of increase in provision of financial, material and technological support as well as technical expertise to the management of Sudd wetland.	**Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 30% the number of households in rangeland areas which have taken up cleaner household fuels. **By 2031, increase by 20% the level of efficiency for biomass use (particularly fuel wood and charcoal) in the traditional energy sector within rangelands in the country (national and state levels).**	Increasing uptake of clean cooking and heating technologies and practices in the rangelands by way of: • Using cleaner household fuels • Increasing the efficiency of biomass use (particularly fuel wood and charcoal) in the traditional energy sector.	Number of new households in rangeland areas which have taken up cleaner household fuels. Level (in terms of %) of increase of the efficiency of biomass use (particularly fuel wood and charcoal) in the traditional energy sector within rangelands in the country (national and state levels).	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.**	**2022-2031**	**50,000,000**

			Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 25% the level of uptake of solar and wind energy utilization within the agro-pastoralists and pastoralists sectors in rangelands.	Increase use of the rangeland's high potential for solar and wind energy to meet energy demand within the agro-pastoralists and pastoralists sectors.	The level (in terms of %) of increase in uptake of solar and wind energy utilization within the agro-pastoralists and pastoralists sectors.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**40,000,000**

Strategic Priority Area V: Investment in Sustainable Rangeland Development.

Strategic Goal 14: To Invest in Labor and Social Capital in order to Produce a Wide Array of Environmental and Economic Benefits					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, increase by 40% investments in provision and enhancement of social services in the rangeland.	Investing in enhancing social services in the rangeland. Key of the social services to be enhanced include: the benefits and facilities such as education, food subsidies, health care, job training and subsidized housing, adoption, community management, policy research and lobbying among others.	Percentage of increase in terms of investment in provision and enhancement of social services in the rangeland. Key of the social services to be enhanced include: the benefits and facilities such as education, food subsidies, health care, job training and subsidized housing, adoption, community management, policy research and lobbying among others.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**500,000,000**
By 2031, increase by 30% the financial resources committed to enhancement of inter-community trust in rangelands. **By 2031, Increase by 25 % events or interventions implemented in order to enhance inter-community**	Invest in measures that enhance and inter-community trust in order to reduce inter-communal strife and increase level of trust among South Sudanese in rangeland and hence removing the hidden barriers / cost hindering the formation of pastoralists and agro-pastoralist cooperatives and the establishment of partnership in value chain exploitation. Investment in strengthening and devolving South Sudan pastoralist union in ten states of South Sudan, will regulate	Amount committed to enhancement of inter-community trust. Events or interventions implemented in order to enhance inter-community trust.	**All Ministries at the National and State Governments.** **Transitional National Legislative Assembly.** **Council of States.** **Local Government Board.**	**2022-2031**	**120,000,000**

trust in rangelands. **By 2031, increase by 30% the number of created and operationalized pastoralists and agro-pastoralist cooperatives and partnerships in value chain exploitation.**	management and control of the pastoralists' affairs related to cattle movement.	Number of new pastoralists and agro-pastoralist cooperatives and partnerships in value chain exploitation created and operationalized.	**Local Governments. National Security Service (NSS)** **South Sudan National Police Service.** **South Sudan Broadcasting Corporation (SSBC)** **South Sudan Peace and Reconciliation Commission.** **South Sudan Land Commission** **Bureau of Community Security & Small Arms Control** **Reconstruction and Development Fund.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 25% financial, technical and material resource invested towards measures for improvement of security	Investing in measures ensuring improved security within communities and improving access to conflict resolution systems and justice in the rangelands. Some of the measures will be promotion of awareness creation on conflicting issues, peace building, employment creation	Percent of increase of financial, technical and material resource invested towards measures for improvement of security	**All Ministries at the National and State Governments.** **Transitional National Legislative Assembly.**	**2022-2031**	**150,000,000**

within communities and improving access to conflict resolution systems and justice in the rangelands.	for the youth, enforcement of security laws and regulations as well as disarmament of the youth and pastoralists in cattle camps. Empowering community-based institutions like local courts, peace and rangeland management committees. Formulation and enforcement of policies, laws and strategies on prevention of cattle raids. Awareness creation and training will also be key to peace and security in the rangelands. Other activities to invest in and in order to create peace will be in facilitation for creation of community or private ranches and conservancies in order to ensure there is enough land for pastoralists by way of allocating new and enough land to pastoralist and hence reducing their conflicts with farmers. Private and community conservancies will increase biodiversity and ecosystem protection, while promoting eco-touring and job creation, which in turn shall buttress peace and security for the youth. Investment in peace and security will enable better integration of peace and security, with the capability of realizing a more comprehensive approach to stabilization, including identifying, preventing, resolving and transforming conflict. An adequate level of security is an essential prerequisite for a business environment that will attract the large amounts of private investment capital required for broad-based and sustained strong economic growth in rangelands.	within communities and improving access to conflict resolution systems and justice in the rangelands.	**Judiciary of South Sudan.** **Council of States.** **Local Government Board.** **Local Governments. National Security Service (NSS)** **South Sudan National Police Service.** **South Sudan Broadcasting Corporation (SSBC)** **South Sudan Peace and Reconciliation Commission.** **South Sudan Land Commission** **Bureau of Community Security & Small Arms Control** **Reconstruction and Development Fund.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.		

			Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 30% the financial, technical and material resource invested towards management of internal migration and internally displaced persons (IDPs) in the rangelands.	Investing in the management of internal migration and internally displaced persons (IDPs).	Percent of increase of financial, technical and material resource invested towards management of internal migration and internally displaced persons (IDPs) in the rangelands.	**All Ministries at the National and State Governments.** **Transitional National Legislative Assembly.** **Judiciary of South Sudan.** **Council of States.** **Local Government Board.** **Local Governments. National Security Service (NSS)** **South Sudan National Police Service.** **South Sudan Peace and Reconciliation Commission.** **South Sudan Land Commission** **Bureau of Community Security & Small Arms Control** **Reconstruction and Development Fund.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.**	**2022-2031**	**300,000,000**

			Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 25% the amount financial, technical and material resource invested towards rangeland natural resource development and management, more specifically in for the following activities: **a) Creating and investing in community conservancies (CCs). The investment will be made in institution building, infrastructure and operational costs as well as in hiring and retaining high caliber staff. CCs headquarters shall be facilitated as well as their security outposts and mobility (e.g. provision of vehicle/s e.tc.);** **b) Creating and investing in community based eco-tourism and then leveraging on eco-tourism for socioeconomic and conservation benefits;** **c) Investing in training and awareness creation activities that seek clarification of rights to land held by government**	Investing in natural resources development and management in order to realize various UN SDGs, peace and security; these will include undertaking activities like: a) Creating and investing in community conservancies (CCs). The investment will be made in institution building, infrastructure and operational costs as well as in hiring and retaining high caliber staff. CCs headquarters shall be facilitated as well as their security outposts and mobility (e.g. provision of vehicle/s e.tc.). In addition to supporting operating cost of conservancies, each conservancy will be allocated resources for peace building, livelihoods development, and enhancement of security, wildlife conservation, rangelands improvement and management and for business development programmes. It is expected that **investments in livelihoods** development shall be widely welcomed by conservancy members, this is because, the investment will be focused on some of the priority needs and underlying drivers of poverty in the communities, and have significant conservation leverage. This shall greatly strengthen the community conservancy model, reinforcing the positive links between working for peace and security, better livelihoods and good conservation practices. A community conservancy is a **community-based organization** (CBO) created to support the management of community-owned land for the benefit of livelihoods. They are legally registered entities, governed by a	Percent of increase of financial, technical and material resource invested towards rangeland natural resource development and management, more specifically for the following activities: a) Creating and investing in community conservancies (CCs). The investment will be made in institution building, infrastructure and operational costs as well as in hiring and retaining high caliber staff. CCs headquarters shall be facilitated as well as their security outposts and mobility (e.g. provision of vehicle/s e.tc.); b) Creating and investing in community based eco-tourism and then leveraging on eco-tourism for socioeconomic and conservation benefits; c) Investing in training and awareness creation activities that seek clarification of rights to	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **National Bureau of Standards.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**300,000,000**

at all levels, communities and individuals; capacity development of the South Sudan Land Commission to make informed decisions about coordinating natural resource use among public and private entities and communities; and increased transparency of and reduced conflict over the allocation of resources to private sector investors and over the revenues generated by the extraction and use of the natural resources; **d) Investing in hiring staff skilled in rangeland management and relevant to governments' ministries, departments and agencies in order to ensure they deliver on their responsibilities;** **e) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE);** **f) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE);** **g) Investing in family planning in order to tackle the massive**	representative Board of Directors and run by a locally-staffed management team. Conservancies work to improve governance and representation for their members by building on traditional, indigenous cultural structures, and empowering women and youth in particular to become agents of change. Good governance enables livelihoods and development projects to be owned, driven and maintained by indigenous people, as well as providing a solid point of contact for donors or investors. Conservancies give indigenous communities a framework and the right incentives to protect the diverse wildlife they share the landscape with, manage rangelands and fisheries more sustainably, and improve regional peace and security. They also provide a vehicle for business development, helping to diversify and boost economies in some of the most marginalized areas. b) Creating and investing in community based eco-tourism and then leveraging on eco-tourism for socioeconomic and conservation benefits. c) Invest in training and awareness creation activities that seek clarification of rights to land held by government at all levels, communities and individuals; capacity development of the South Sudan Land Commission to make informed decisions about coordinating natural resource use among public and private entities and communities; and increased transparency of and reduced conflict over the allocation of resources to private sector investors and over the revenues generated by the extraction and use of the natural resources. d) Invest in hiring staff skilled in rangeland management and relevant to governments' ministries, departments and agencies in order to ensure they deliver on their responsibilities. e) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE).	land held by government at all levels, communities and individuals; capacity development of the South Sudan Land Commission to make informed decisions about coordinating natural resource use among public and private entities and communities; and increased transparency of and reduced conflict over the allocation of resources to private sector investors and over the revenues generated by the extraction and use of the natural resources; d) Investing in hiring staff skilled in rangeland management and relevant to governments' ministries, departments and agencies in order to ensure they deliver on their responsibilities; e) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE); f) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE); g) Investing in family			

challenges of population, health and environment (PHE); **h) Investing in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots;** **i) Investing in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots in the country;** **j) Financing activities aimed at the inclusion of women and youth in the management of affairs of Community Based Conservancies;** k) **Investing in measures geared towards boosting human capacity, particularly around economic literacy and numeracy and modern farming and livestock production methods including requisite inputs, basic farming tools and markets.**	f) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE). g) Investing in family planning in order to tackle the massive challenges of population, health and environment (PHE). h) Invest in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots in the country. i) Invest in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots in the country. j) Finance activities aimed at the inclusion of women and youth in the management of affairs of Community Based Conservancies. k) Investing in measures geared towards boosting human capacity, particularly around economic literacy and numeracy and modern farming and livestock production methods including requisite inputs, basic farming tools and markets.	planning in order to tackle the massive challenges of population, health and environment (PHE); h) Investing in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots; i) Investing in measures tackling human-wildlife conflict as wildlife recovers and wildlife security improves, to reduce potential backlash in conflict hotspots in the country; j) Financing activities aimed at the inclusion of women and youth in the management of affairs of Community Based Conservancies; k) Investing in measures geared towards boosting human capacity, particularly around economic literacy and numeracy and modern farming and livestock production methods including requisite inputs, basic farming tools and markets.			
By 2025, have in place and being operationalized effective National Community Conservancies	Defining, creating and rolling-out an effective national Community Conservancies Livelihoods and Businesses Development Fund.	Level of development and operationalization of an effective National Community Conservancies	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife**	**2022-2025**	**80,000,000**

Livelihoods and Businesses Development Fund.		Livelihoods and Businesses Development Fund.	**Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		

Strategic Goal 15: To Invest in Infrastructure, Production Facilities, Machines and Equipment.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2031, increase by 40% the amount of funds made available for: **a) Building of rangeland infrastructure (among these; roads and markets).** **b) Investing in livestock corridors and basic services and facilities along transhumant routes, better access to information and effective communication among all actors involved in transhumance at different levels.** **c) Invest in building marketing systems that link pastoralists and agro-pastoralists to national, regional and global livestock markets.** **d) Investing in development of industrial parks / bases to create income-generating activities and employment in rangelands.** **By 2031, increase by 25 % the number and type of infrastructure constructed in the rangeland.** **By 2031, increase by 20% the amount of financial, technical and material**	Invest in building off -farm infrastructure such as roads (trunk and rural/feeder roads), construction of dykes and drainage systems to control flood as well as more livestock markets with the necessary facilities where farmers can trade their livestock. Off-farm investment will also constitute investment in construction of water points, dams or hafiirs and boreholes for provision of water for animal and human. Investment of ICT infrastructure like installation of GIS technology system and construction of GIS laboratories for safety of the equipment as well as provision of internet services, training adequate GIS and mapping experts to manage the system. Other unique and essential investment could be in areas like: •Establishment of national and state facilities that collect pasture species or plant specimen for preservation, plant identification, area location soil type and other necessary data (a form of national or state-based herbarium and pasture research center) •Establishment of a national rangelands study center including animal nutrition research laboratory (ANRL) for studying livestock nutrition and rangelands general condition, trends and seasonal use of pasture plants as well as conducting livestock population censuses in South Sudan. •Investing in activities that attract investments for infrastructure financing in rangelands in the arrangement of public-private partnerships	Amount of funds made available for: a) Building of rangeland infrastructure (among these; roads and markets). b) Investing in livestock corridors and basic services and facilities along transhumant routes, better access to information and effective communication among all actors involved in transhumance at different levels. c) Invest in building marketing systems that link pastoralists and agro-pastoralists to national, regional and global livestock markets. d) Investing in development of industrial parks / bases to create income-generating activities and employment in rangelands. Number and type of new infrastructure constructed in the rangeland. Amount of financial, technical and material resources made available for	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **National Bureau of Standards.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies. Other relevant Departments, Commissions and Agencies.	**2022-2031**	**800,000,000**

resources made available for promotion and crystalizing commitments for infrastructure development under public-private partnerships (PPPs) arrangement in the rangelands. **By 2031, have a robust platform for rangeland infrastructure development under public-private partnerships (PPPs) arrangement.**	(PPPs). Investing in livestock corridors and basic services and facilities along transhumant routes, *better access to information* and effective communication among all actors involved in transhumance at different levels. Invest in building marketing systems that link pastoralists and agro-pastoralists to national, regional and global livestock markets. Investing in development of industrial parks / bases to create income-generating activities and employment in rangelands. Slaughterhouses / abattoirs and slabs will be essential within livestock related industrial parks. Review and implement some of past proposed innovative rangeland interventions like establishment of dairy industries, feedlots and fattening centers in the vicinity of most major market centers especially in Juba, Malakal and Wau.	promotion and crystalizing commitments for infrastructure development under public-private partnerships (PPPs) arrangement.			
By 2031, increase by 40% the amount of funds allocated for the improvement of field / community access to inputs and services for livestock production systems including upgrade of genetic base of traditional livestock breeds in the rangelands. **By 2031 increase by 25% cattle, goats and sheep among other livestock that have been genetically upgraded in rangelands.**	Invest in measures that improve field / community access to inputs and services for livestock production systems that are already intensifying including provision of requisite incentives for improving and upgrading genetic base of traditional livestock breeds in order to increase livestock productivity and quality.	Amount of funds allocated for the improvement of field / community access to inputs and services for livestock production systems including upgrade of genetic base of traditional livestock breeds. Number of new cattle, goats and sheep among other livestock that have been genetically upgraded.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **National Bureau of Standards.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)**	**2022-2031**	**300,000,000**

			Development Partners, NGO, CBOs and Civil Societies involved with rangelands. **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, increase by 40% the amount of funds invested in strengthening and creating new formal pastoral safety nets including informal arrangements as primary means of dealing with drought, floods, diseases and other disasters in the country's rangelands. **By 2031, increase by 25% the number of IBLI schemes created and operationalized at the national and state levels within rangelands.** **By 2031, achieve a growth rate of 10% for the financial institutions establishment in rangelands.**	Invest in strengthening and creating new pastoral safety nets as primary means of dealing with drought, floods, diseases and other disasters in the country. Investments shall focus on creating effective formal insurance programs for pastoralists and agro-pastoralist for example **Index-Based Livestock Insurance (IBLI)** schemes to give pastoralists protection against climate related risks such as drought-induced livestock losses and where feasible enhance and formalize informal institutions safety nets. Other intervention for increased rangeland safety net shall be development of the financial industry in the rangelands and ensuring that macroeconomic and other policies are such that people have sufficient confidence in the financial system to hold a larger share of financial assets and to deposit these with financial institutions.	Amount of funds invested in strengthening and creating new formal pastoral safety nets including informal arrangements as primary means of dealing with drought, floods, diseases and other disasters in the country. Number of IBLI schemes created and operationalized at the national and state levels. Level of financial institutions development and strengthening in rangelands.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **National Bureau of Standards.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**200,000,000**

Strategic Goal 16: To Invest in Natural Resource and Land Development.					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2024, have a completed assessment, analysis and distillation of evidence on the current / prevailing health, productivity and investment opportunities in the rangelands in the country. **By 2024, have a completed assessment, valuation and determination of total economic value (TEV) of rangelands in the country.**	Assessing and distilling evidence on the current/prevailing health, productivity and investment opportunities in the rangelands in the country. Assessing, valuing and revealing total economic value (TEV) of rangelands (both biodiversity and ecosystem services) in the country in order to show socio-cultural, ecological and economic contribution of rangelands to form the basis for investment in sustainable rangeland development and management (SRDM), formulation of favorable policies and equitable resource allocation by governments.	Level of completion of an assessment, analysis and distillation of evidence on the current/prevailing health, productivity and investment opportunities in the rangelands in the country. Level of completion of an assessment, valuation and determination of total economic value (TEV) of rangelands in the country.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2024**	**30,000,000**
By 2024, have a developed and operationalized National Environmental Investment Platform (NEIP) that considers the growing role for environment and natural resources in rangelands.	Using the environment as an investment platform in South Sudan. This shall be more to do with investment for positive social and environmental impacts in rangelands.	Level of completion and operationalization of a National Environmental Investment Platform (NEIP) that considers the growing role for environment and natural resources in the rangelands.	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.**	**2022-2031**	**135,000,000**

By 2031, increase by 30% the amount of investments in the following areas in rangelands: **a) Mitigating and adapting to climatic risk that are experienced in rangelands.** **b) Investing in development of policies and legislative frameworks and strengthening of institutional capacity for natural resource development, management and conservation; as well as investing in the establishment of enforcement mechanisms for protecting wetlands, forests and wildlife and increment of climate resilience.** **c) Investing in measures aimed at building national capacity to collect, manage and share environmental data and information to track environmental changes and assess implementation of related programmatic goals.** **d) Investing in events held to promote investment in complementary economic activities such as wildlife conservation and ecotourism, carbon trading, among others.** **e) Investing in awareness and capacity building to the local, trained law enforcement to cub poaching as well as provision of transport (nobility), facilities and equipment for them.** **f) Investing in pollution and oil waste control in the rangelands as well as enabling law enforcement and monitoring of oil companies.** **g) Investing in controlling of livestock disease like drugs and vaccination,**	Investing in mitigating and adapting to climatic risk that are experienced in rangelands. Investing in development of policies and legislative frameworks and strengthening of institutional capacity for natural resource development, management and conservation; as well as investing in the establishment of enforcement mechanisms for protecting wetlands, forests and wildlife and increment of climate resilience. Investing in measures that aim to remedy the land tenure (as well as general access to natural resources) issue and implementation of the necessary legislation, development of wildlife tourism by implementing sustainable tourism strategies and policies, steps towards meeting its Nationally Determined Contribution (NDC), including by seeking donor support. Investing in measures aimed at building national capacity to collect, manage and share environmental data and information to track environmental changes and assess implementation of related programmatic goals. Promotion of investment in complementary economic activities such as wildlife conservation and ecotourism, carbon trading, among others like investment in awareness and capacity building to the local, trained law enforcement to cub	Increase in the percentage of investments in the following areas in rangelands: **a)** Mitigating and adapting to climatic risk that are experienced in rangelands. **b)** Investing in development of policies and legislative frameworks and strengthening of institutional capacity for natural resource development, management and conservation; as well as investing in the establishment of enforcement mechanisms for protecting wetlands, forests and wildlife and increment of climate resilience. **c)** Investing in measures aimed at building national capacity to collect, manage and share environmental data and information to track environmental changes and assess implementation of related programmatic goals. **d)** Investing in events held to promote investment in complementary economic activities such as wildlife conservation and ecotourism, carbon trading, among others. e) Investing in awareness and capacity building to the local, trained law enforcement to cub poaching as well as provision of transport (mobility), facilities and equipment for them. f) Investing in pollution and oil waste control in the rangelands as well as enabling law enforcement and monitoring of oil companies. g) Investing in controlling of livestock disease like drugs and vaccination, general veterinary services and	**Local Governments.** **Investment Authority.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		

general veterinary services and products and training of Community-based Animal Health Workers (CAHW) and re-establishment of veterinary mobile clinics and surveillances.	poaching as well as provision of transport (mobility), facilities and equipment for them.	products and training of CAHW and re-establishment of veterinary mobile clinics and surveillances.			

Strategic Goal 17: To Invest in Entrepreneurship Development in Rangelands					
National Targets	*Action*	*Performance Indicator/s*	*Lead / Other Partners*	*Timeframe*	*Budget (USD)*
By 2024, have in place a robust portfolio of opportunities to attract investment in rangelands in the country. **By 2031, increase by 20% the number and type of sustainable or integrated value chains (SVCs) and business models (BMs) developed for fodder and other rangeland products such as meat, honey, gums and resins, fiber, among others.** **By 2031, increase by 30% the financial, technical and material resources aimed at:** **a) Providing financial resources for the efficient and effective operationalization of the Investment Promotion Act of 2009 which allows the provision of specific incentive packages, including concession privileges and preferential treatment in rangeland investments.** **b) Providing financial incentives for public-private investment partnerships in sustainable rangeland**	Providing financial resources for the efficient and effective operationalization of the Investment Promotion Act of 2009 which allows the provision of specific incentive packages, including concession privileges and preferential treatment in rangeland investments. Providing financial incentives for public-private investment partnerships in sustainable rangeland development and management (SRDM). Financing and conducting a national study on economic, trade and investment policies in rangelands in order to find trends, gaps and opportunities for improvement. Financing and conducting a national wide rangeland study on the challenges to the development of integrated value chains in rangelands as well as an assessment of the regional and international competitive advantages in rangeland sectors. Investing in interventions aimed at addressing findings of eroded competitive advantages of rangeland sectors in the region and globally; for example, due to the outdated facilities, lack of investment and modern technologies, underdeveloped infrastructure, low productivity, poor veterinary and phytosanitary systems, and low capacity to comply with packaging, marketing, and other requirements of the contemporary global market.	Percentage increase of financial, technical and material resources aimed at: a) Providing financial resources for the efficient and effective operationalization of the Investment Promotion Act of 2009 which allows the provision of specific incentive packages, including concession privileges and preferential treatment in rangeland investments. b) Providing financial incentives for public-private investment partnerships in sustainable rangeland development and management (SRDM). c) Financing and conducting a national study on economic, trade and investment policies in rangelands in order to find trends, gaps and opportunities for improvement. d) Financing and conducting a national wide rangeland study on the challenges to the development of integrated value chains in rangelands as well as an assessment of the regional and international competitive advantages in rangeland sectors. e) Financing and development of value chains (VCs) and business models (BMs) for	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.	**2022-2031**	**250,000,000**

development and management (SRDM). **c) Financing and conducting a national study on economic, trade and investment policies in rangelands in order to find trends, gaps and opportunities for improvement.** **d) Financing and conducting a national wide rangeland study on the challenges to the development of integrated value chains in rangelands as well as an assessment of the regional and international competitive advantages in rangeland sectors.** e) **Financing and development of value chains (VCs) and business models (BMs) for fodder and other rangeland products such as meat, honey, gums and resins, fiber, among others**	In addition, investing in interventions that increase trade advantage on one side, there will be investment in interventions aimed at the establishment of a sustainable value chain in rangeland, and these activities will involve creation of stable demand for rangeland products and services as well as considering aspects such as global commodity chain (GCC), world economic triangle and global value chain (GVC) etc. The above interventions will also involve development of value chains and business models for fodder and other rangeland products such as meat, honey, gums and resins, fiber, among others. Assessing, identifying and developing/creating opportunities for value addition of rangeland products and services in order to attract private investment in rangeland development and management. Financing and training relevant investors or farmers on formulation of animal feeds locally. Investing on the following measures and technologies that aim at: improvement of fodder banking for feeding the livestock during the dry season; provision and supply of crops fodder seeds to the livestock and crop farmers to improve fodder production and development of national pasture and fodder production strategy.	fodder and other rangeland products such as meat, honey, gums and resins, fiber, among others. Number and type of sustainable or integrated value chains (SVCs) and business models (BMs) developed for fodder and other rangeland products such as meat, honey, gums and resins, fiber, among others. A portfolio of opportunities to attract investment in rangelands in the country**.**			
By 2031, have a robust and high utilization of the annual national financial budget to rationalize and get favorable tax regimes that encourage investments in sustainable rangeland	Utilizing annual national financial budget to rationalize and get favorable tax regimes that encourage investments in sustainable rangeland development like production of feed, seeds and fodder as climate change adaptation mechanism in rangeland.	Percentage or level of utilization of annual national financial budget to rationalize and get favorable tax regimes that encourage investments in sustainable rangeland development like production of	**All Ministries at the National and State Governments.** **Council of States.** **Local Government Board.**	**2022-2031**	**50,000,000**

development like production of feed, seeds and fodder as climate change adaptation mechanism in rangeland.	Such intervention would be beneficial in twofold - making rangeland development services and products affordable to pastoralists and agro-pastoralists and attracting investment in the rangeland sectors.	feed, seeds and fodder as climate change adaptation mechanism in rangeland.	**Local Governments.** **Investment Authority.** **Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers)** **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		
By 2031, each of the counties within protected areas (PAs) to have at least 1 established Community Based Rangeland Trading Limited Company which shall incubate and run commercial businesses and provide financial services in order to benefit households and community-based conservancies.	Establishing Community Based Rangeland Trading Limited Companies which shall incubate and run commercial businesses and provide financial services in order to benefit households and community-based conservancies. This is expected to have real impact, in a tough business environment with a "hand-out" culture to break from. Together, the livelihood and business investments will hence improve lives; empower self-governance and reliance, change attitudes to conflict, conservation, land and natural resource management.	Number of established Community Based Rangeland Trading Limited Companies which shall incubate and run commercial businesses and provide financial services in order to benefit households and community-based conservancies.	**Ministries of Livestock & Fishery; Ministries of Agriculture & Food Security; Ministries of Environment & Forestry; Ministries of Wildlife Conservation & Tourism; Ministries of Culture, Museums & National Heritage or their equivalents at the National and State Governments.** **Council of States.** **Local Government Board.** **Local Governments.** **Investment Authority.**	**2022-2025**	**100,000,000**

			Rangeland communities and other key stakeholders (e.g. local institutions, private sector, other rangeland users, investors and rangeland managers) **Development Partners, NGO, CBOs and Civil Societies involved with rangelands.** **Academia and Research Institutions (e.g. Natural Disasters, Strategic and Scientific Research) as well as professional bodies.** Other relevant Departments, Commissions and Agencies.		

CHAPTER 5: DELIVERING THE STRATEGY AND ACTION PLAN

The RMSAP 2022-2031 is the national strategy and plan for the Sustainable Rangeland Development and Management in South Sudan. It integrates the conservation and sustainable use of biological diversity into rangeland development and management plans, programmes and policies. To effectively and efficiently implement the South Sudan Rangeland Management and Action Plan (RMSAP) 2022-2031, essential requirements shall be put in place as highlighted in the sections below.

5.1 Enablers

5.1.1 Resource Mobilization for Implementation

Resources for effective implementation of RMSAP 2022-2031 in South Sudan will depend on various sources; including government allocations, bilateral and multilateral agreements, grants, and private sector and individual contributions.

The total estimated budget for the implementation of the South Sudan RMSAP 2022-2031 is 6.083 Billion US Dollars as shown below including breakdown into the 5 strategic priority areas (SPAs).

Budgeting per each of the strategic priority area (SPA) after weighting		
Strategic Priority Area (SPA)	**Weighting in %**	**Allocation for the 10 Years' RMSAP Implementation Period (USD) in billion.**
Policies and Legal Framework	8.2%	0.5
Governance and Management	9.6%	0.582
Institution and Individual Capacity Building	6.5%	0.395
Biodiversity Conservation and Climate Change Adaptation and Mitigation	21.1%	1.286
Investment in Sustainable Rangeland Development	54.6%	3.32
Total	100%	6.083

Existing and Potential Sources of Funds

The potential sources of internal funds include revenue collected by the Government through taxes and charges from various investments associated with biodiversity and ecosystem utilization. Such funds are allocated to various ministries, departments, commissions and agencies as well as state and local Governments through their Medium-Term Expenditure Framework that will be reflected in their budgets.

Implementation of sectoral action plans can be supported under this arrangement. Other sources of domestic funds include established funds such as National Environmental Trust Fund, Forest Trust Fund, and Wildlife Fund, Payments for Environmental Services and funds obtained through Public Private Partnership and funds from local NGOs.

Potential sources of funds for RMSAP 2022-2031 implementation from the international community include GEF, the World Bank, EU, USAID, CIDA, SIDA, DANIDA, IFAD, and GIWA among others. Other potential sources of funds include Bilateral Funds and General Budget Support (GBS). RMSAP 2022-2031 implementation will also benefit from financial support directed at specific themes such as climate change.

5.1.2 Clearing House Mechanism (CHM)

South Sudan has an evolving National Environmental Information Clearing-House Mechanism (NEI-CHM) under the Ministry of Environment and Forest. To ensure effective implementation of RMSAP 2022-2031, the current and nascent NEI-CHM will be enhanced through additional financial, technical and human resources. The enhanced NEI-CHM will support implementation of the RMSAP in various ways, including the strengthening coordination and collaboration among key stakeholders and increasing public awareness on the status of rangelands in the country and RMSAP implementation.

Once, the NEI-CHM is fully developed, the RMSAP 2022-2031 will be uploaded to the NEI-CHM website together with instruments for measuring progress in the implementation of the national action plans. This will regularly provide reliable and accurate rangeland and environmental information relevant for sound decision-making on the sustainable utilization of South Sudan's rangeland resources.

There is a need to establish more rangeland information centers in different institutions and to strengthen the existing information centers and databases in the country. A mechanism should be put in place for these information centers and databases to feed into the national database and website on environmental and more specifically, rangeland status, trends and gaps in their development and management.

5.2 Delivery and Coordination Mechanisms

5.2.1 Institutional Roles and Responsibilities

Implementation arrangements for ecosystems and biodiversity related issues in South Sudan including Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 is guided by the Transitional Constitution of the Republic of South Sudan, 2011 and current policies and laws governing natural resources in the country.

At the national level, the Ministries and Departments are responsible for the general implementation of the strategies by facilitating participatory formulation, development and implementation of sector policies and legislation. They will also be responsible for interpretation of RMSAP into their sectors and the preparation of projects, programmes, strategies and budget for the strategic interventions relevant to their respective sectors based on the strategic interventions identified in the strategy. To implement the strategic interventions at local level, the Ministry of Livestock and Fisheries (MLF) and conjunction with Ministry of Finance and Planning and as well as other ministries in the natural resources sector; these are: Ministry of Agriculture and Food Security; Ministry of Environment and Forestry; Ministry of Wildlife Conservation & Tourism and to some extent, South Sudan Land Commission will work closely with State Governments (SGs) through their various state ministries and departments in collaboration with line sector national ministries.

Successful implementation of RMSAP 2022-2031 will also requires enhanced engagement with NGOs, CSOs, Private Sector, and Academic and Research institutions. Implementation of RMSAP will also benefit from the existing committees within Local Governments, Payams, Bomas (villages) and sub-village that coordinate rangeland development and management.

The administration of the South Sudan including Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 will benefit from the utilization of existing administrative mechanisms for biodiversity conservation and sustainable use.

However, for effective administration, a mechanism to support the recommended to be established National Rangeland Development and Management Department (NRDMD) and a RMSAP 2022-2031 Implementation Secretariat (IS) within NRDMD at the MAF and ensure adequate coordination in decision-making and planning amongst ministries, government agencies, state and local governments, non-state actors and the public at large will be established. Two committees are proposed, these are the National Rangeland Development and Management Steering Committee (NRDMSC) and a National Rangeland Development and

Management Technical Committee (NRDMTC) will guide the coordination and implementation of RMSAP 2022-2031.

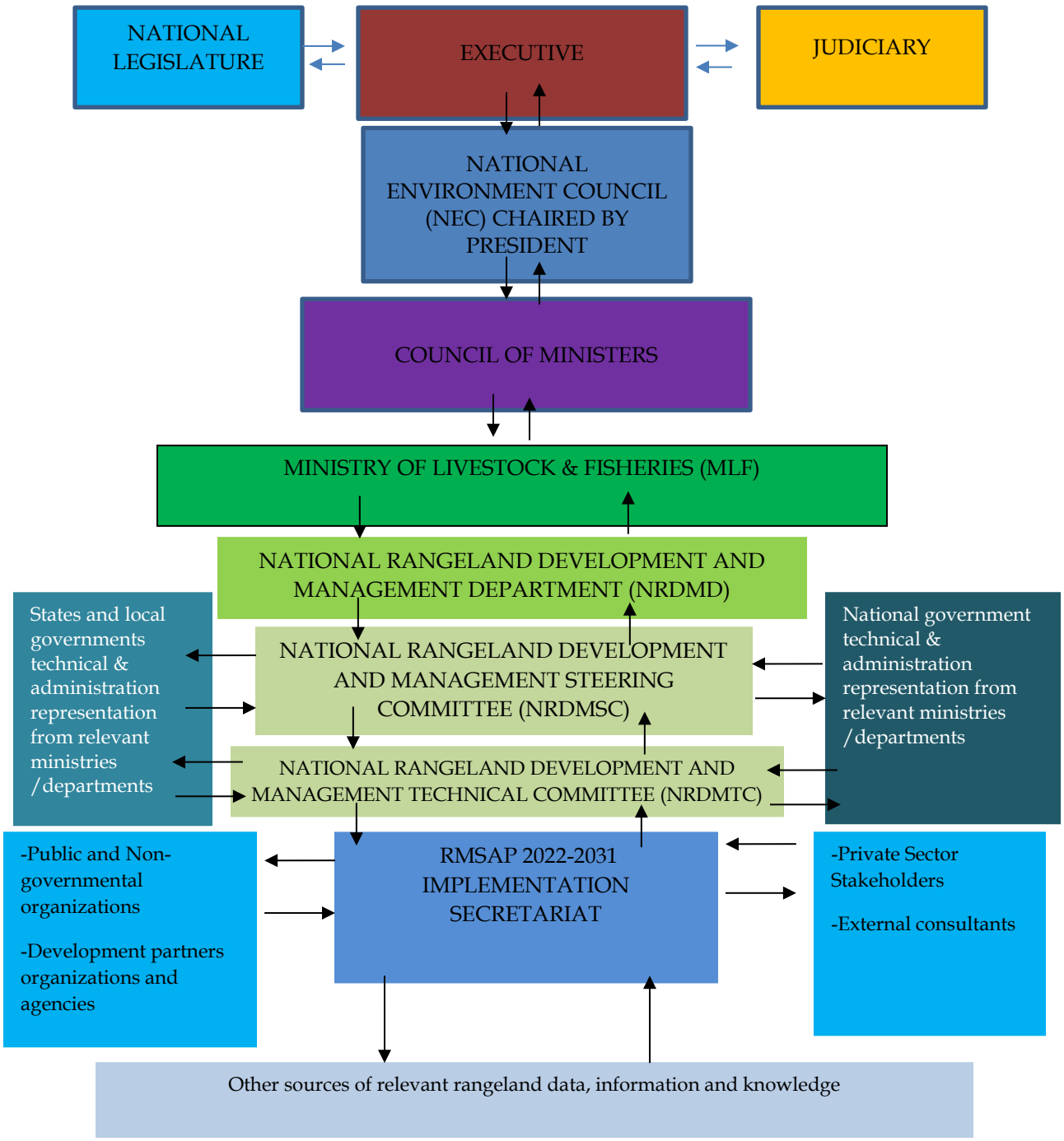
National Rangeland Development and Management Steering Committee (NRDMSC)

The **NRDMSC** shall provide policy guidance to the NRDMD at the MLF and ensure coordination of actions as well as cross-sectoral participation. The NRDMSC will be an **Inter-Ministerial Committee** with the following composition: National and States' Ministers and Director Generals from Economic Functions, Natural Resources and Infrastructure related Ministries including National Ministry of Foreign Affairs and International Cooperation whom shall deal with transborder issues related to livestock transhumance and trade

National Rangeland Development and Management Technical Committee (NRDMTC)

The **NRDMTC** shall provide technical advice to the RDMD at the MLF and will be charged with overseeing all technical issues related to South Sudan Rangeland Development and Management including the implementation of RMSAP 2022-2031. Its composition will include Technical Directors from all National and State Ministries. The two committees shall also have representation from the Private Sector, Pastoralists and Agro-pastoralist, NGOs and other relevant statutory bodies. **Figure 18** illustrates the South Sudan RMSAP 2022-2031 implementation structure.

Figure 18: South Sudan Rangeland Management Strategy and Action Plan (RMSAP) 2022-2031 Implementation Structure.



5.2.2 Coordination of the RMSAP Implementation

The proposed National Rangeland Development and Management Department (NRDMD) or its equivalent shall be responsible for the overall coordination of the implementation of this RMSAP 2022-2031, including coordination and reporting on implementation of actions by partners.

5.2.3 Monitoring and Evaluation (M&E) of the RMSAP 2022-2031

Regular monitoring and evaluation of the implementation of RMSAP 2022-2031 will be undertaken to ensure that the national, states and local obligations are met. This will be carried out in a participatory manner and on a continuous basis. Sectors will prepare and present periodic reports of their monitoring activities to the proposed National Rangeland Development and Management Department (NRDMD) or its equivalent. Measuring progress on the implementation will be based on the various criteria, indicators and verifiers as stipulated in the Action Plan and further guidance from ***FAO Guidelines for Applying and Strengthening the use of Criteria and Indicators for Sustainable Forest and Rangelands Management in the Near East and North Africa Region, 2017.***

Evaluation of RMSAP 2022-2031 implementation will be done in two phases. Phase one will be the midterm review to be undertaken on the fifth year of the implementation process thus to allow for possible amendments and/or actions necessary to improve performance before end of the process. Phase two will be final evaluation to be undertaken at the end of the tenth year where the action plan of RMSAP will be gauged in terms of its relevance, effectiveness, efficiency, impact and sustainability. It is important to note that the evaluation process banks on the availability of information from monitoring. The evaluation report will establish a basis for further planning and revision of RMSAP 2022-2031.

5.2.4 Financial Requirements

The proposed National Rangeland Development and Management Department (NRDMD) or its equivalent at the MLF will require approximately USD 3 million annually to carry out its duties and functions to ensure effective coordination and delivery of RMSAP 2022-2031. This funding will enable NRDM officials to participate in international, national, state and local level discussions and negotiations on sustainable rangeland development and management; build capacity of national, state and local government ministries and departments as well as other stakeholders; develop policies, regulations and guidelines; mobilize and track rangeland development and management finance to deliver RMSAP 2022-2031; and monitor and report on rangeland development and management state of affairs. For the actual implementation of the specific activities for improvement of the rangeland development and management in the country, reference should be made in the rangeland action plan section.

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Ministry of Livestock and Fisheries