THE SOUTH SUDAN ROADMAP ON ANTICIPATORY ACTION

2025-2030

List of Figures

Executive Summary

The South Sudan Roadmap on Anticipatory Action 2025-2030 (SSRAA) represents a major milestone in the country's efforts to shift from crisis-response to proactive risk management. In a context where climate-related and human-induced shocks are becoming increasingly frequent and severe, this Roadmap provides a clear national framework to anticipate, prepare for, and mitigate risks before they escalate into emergencies. Anchored in global and regional commitments, including the IGAD Regional Roadmap on Anticipatory Action(IRRAA), the Sendai Framework for Disaster Risk Reduction, and the United Nations Early Warnings for All (EW4All) initiative, Food and Agriculture Organization, and World Food Programme Strategy on Anticipatory Action(AA), the roadmap presents a forward-looking vision for a resilient South Sudan where AA is fully embedded in national policies, planning processes, and development strategies. Its mission is to strengthen a robust, people-centred, multi-hazard early warning and AA system that empowers communities, institutions, and partners to act early and safeguard lives and livelihoods. To achieve this, the SSRAA outlines key priority objectives such as:

- *Establishing a multi-sectoral anticipatory action framework*
- *Enhancing forecasting systems, triggers, and early warning capacities*
- *Strengthening institutional and community capabilities*
- *Securing sustainable and predictable financing*
- *Ensuring gender equality, inclusion, and social protection*
- *Harmonizing early warning and early action mechanisms across actors*

This Roadmap aims to foster government leadership, spearheading risk-informed development planning, disaster risk management, and anticipatory action while fostering strong coordination with sub-national structures and multi-stakeholder partnerships. It paves the way for a nation that acts before strikes, building systems that anticipate shocks, safeguard lives, and drive a resilient and secure future for the most vulnerable community. The SSRAA is structured around six key strategic pillars:

- *Risk Knowledge*
- *Triggers and Early Warning Systems*
- *Anticipatory Actions*
- *Financing Mechanisms*
- *Coordination and Legal Frameworks*
- *Gender, Inclusivity, and Social Protection*

The successful implementation of SSRAA will reduce humanitarian needs, protect vulnerable populations, safeguard livelihoods, attract long-term financing, and strengthen South Sudan's resilience to future crises.

Foreword

As the Minister of Humanitarian Affairs and Disaster Management (MHADM), I have witnessed first-hand the immense challenges our nation has endured in recent years. The Republic of South Sudan has faced successive and compounding climatic and non-climatic shocks, devastating floods, recurrent drought, epidemics, and pest outbreaks. These disasters have displaced millions of our people, destroyed livelihoods, and deepened food insecurity across the country. Ranked among the most climate-vulnerable nations globally, our country continues to confront the combined pressures of climate change, conflict, public health emergencies, and widespread poverty. For too long, our responses to these crises have largely been reactive, often delayed, and costly. This reality underscores the urgent need for South Sudan to adopt a more proactive, anticipatory, and forward-looking disaster risk management system, one that protects our people before shocks escalate into humanitarian emergencies.

Guided by this vision, the Government of the Republic of South Sudan, through the MHADM, initiated critical steps between 2023 and 2024 to AA approaches. Working closely with the World Food Programme (WFP), Food and Agriculture Organization (FAO), and the South Sudan Red Cross, we conducted a comprehensive AA and climate services feasibility assessment. The findings of the assessment affirmed what we have long known, AA is both feasible and indispensable for South Sudan. While challenges remain in early warning systems, data availability, and operational environments, the potential to reduce disaster impacts, safeguard livelihoods, and protect our most vulnerable citizens is undeniable. Informed by this evidence, we established a Technical Working Group on Anticipatory Action (TWG-AA), bringing together national institutions, Humanitarian, Development, and other partners under MHADM's leadership. Through this collaborative effort, we developed the South Sudan Roadmap on Anticipatory Action, a strategic and nationally owned framework that strengthens early warning systems, financing mechanisms, coordination structures, and community-level preparedness.

This Roadmap marks a critical milestone in our collective journey toward resilience. It reflects our determination to shift from crisis response to crisis prevention, and to institutionalize systems that act early to save lives and livelihoods.

This Roadmap marks a critical milestone in our collective journey toward resilience. It reflects our determination to shift from crisis response to crisis prevention, and to institutionalize systems that act early to save lives and livelihoods. As we move forward, I reaffirm the government's strong commitment to operationalizing this SSRAA. We will continue to build institutional capacities, invest in early warning and preparedness systems, and deepen partnerships with all national and international stakeholders, who stand with us on this important agenda. Together, we shall build a safer, more resilient South Sudan, where communities are protected before shocks become disasters, and where hope and preparedness replace fear and vulnerability.

Hon. Albino Akol Atak Mayom
Minister of Humanitarian Affairs & Disaster Management
Republic of South Sudan, Juba

Acknowledgement

The Roadmap is the result of an extensive, consultative, and collaborative process anchored in the initial feasibility assessment of the country's readiness to institutionalize Anticipatory Action. It represents a collective effort led by the Government of the Republic of South Sudan, through the MHADM, with invaluable technical and financial contributions from a wide range of national, regional, and international partners.

We express our deep appreciation to the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC), World Food Programme (WFP), the Food and Agriculture Organization (FAO), the South Sudan Red Cross (SSRC), the United Nations Office for Disaster Risk Reduction (UNDRR), the Danish Refugee Council (DRC), the International Federation of Red Cross and Red Crescent Societies (IFRC), Welthungerhilfe (WHH), and World Vision International (WVI), Global Nutrition Cluster for their dedicated partnership. Special recognition is extended to the IGAD Regional Technical Working Group and the South Sudan National Technical Working Group on AA, whose leadership, guidance, and technical expertise have been central to the drafting and alignment of the SSRAA with global, regional, and national policy frameworks, including the Sendai Framework, the IRRAA, and the South Sudan DRM policy instruments.

We also convey our sincere gratitude to our donors and financial partners including the German Federal Foreign Office (GFFO), European Civil Protection and Humanitarian Aid Operations (ECHO), the Government of Ireland, the European Union (EU), the Korea International Cooperation Agency (KOICA), the Government of the Netherlands, and the Swiss Agency for Development and Corporation (SADC). Their commitment and generous support made it possible to design a document that is evidence-based, inclusive, and responsive to South Sudan's context and priorities. Finally, we recognize the valuable contributions of government ministries, state authorities, civil society organizations, and community stakeholders whose active engagement throughout the process has ensured that this roadmap reflects a shared national vision and collective aspiration for a resilient and prepared South Sudan.

Dennis Marial Muorwel, PhD

Undersecretary

Ministry of Humanitarian Affairs and Disaster Management

Republic of South Sudan, Juba

Dr Banak Joshua Dei Wal

Director General of Disaster Management

Chairperson of the National Technical Working Group for Anticipatory Action

Republic of South Sudan, Juba.

List of Abbreviations

AA	Anticipatory Action
AAA	Abyei Administrative Area
AAPs	Anticipatory Action Plans
AMR	Antimicrobial Resistance
ARC	African Risk Capacity
AWS	Automatic Weather Stations
CAMP	Comprehensive Agriculture Master Plan
CS	Climate Services
DL	Desert Locust
DRC	Danish Refugee Council
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EW4ALL	Early Warnings for All
FAO	Food and Agriculture Organization of the United Nations
FAW	Fall Army Worm
GEF	Global Environmental Facility
GPAA	Greater Pibor Administrative Area
ICPAC	IGAD Climate Prediction and Application Centre
IFRC	International Federation of Red Cross and Red Crescent Societies
IGAD	Intergovernmental Authority on Development
IPC	Integrated Food Security Phase Classifications
M&E	Monitoring and Evaluation
MHADRM	Ministry of Humanitarian Affairs and Disaster Risk Management
NTWG-AA	National Technical Working Group for Anticipatory Action
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PoA	Programme of Action
SDC	Swiss Agency for Development and Corporation
SFDRR	Sendai Framework for Disaster Risk Reduction
UNDRR	United Nations Office for Disaster Risk Reduction
WFP	World Food Programme

Definitions of Terminologies

Anticipatory Action: Is a pre-agreed interventions taken ahead of a predicted hazardous event to prevent or reduce impacts on lives and livelihoods and humanitarian needs before they fully unfold, or its most acute impacts are felt.

Anticipatory Action Plan: Are tools that contain information on triggers and anticipatory actions, as well as describe the step-by-step process for implementing anticipatory actions once a trigger is activated. It provides guidelines for who takes action when, where, and with what funds. The activation of the plan is triggered when a specific forecast reaches a certain threshold that indicates potential severe negative impacts.

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.

Climate Change: Refers to long-term shifts in temperature, weather patterns, and climatic conditions that result directly or indirectly from human activities, particularly those that alter the composition of the global atmosphere, beyond the natural climate variability observed over comparable time periods.

Climate Service: Is the provision and use of climate data, information and knowledge to assist decision-making. Climate services require appropriate engagement between the recipient of the service and its provider, along with an effective access mechanism to enable timely action.

Contingency Planning: A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

Disaster: A serious disruption of the normal functioning of a community or a society involving widespread human, material, economic or environmental losses, which exceeds the ability of the affected community or society to cope using its own resources.

Disaster Risk: The potential disaster losses in lives, health status, livelihoods, assets and services, which could occur to a particular community as a result of combination of vulnerability and hazards.

Disaster Risk Management: The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities to lessen the adverse impacts of hazards and the possibility of disaster.

Disaster Risk Reduction: The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Disaster Risk Reduction Plan: A strategy and a set of actions designed to prevent new disaster risks, reduce existing risks, and manage residual risks to build stronger, more resilient communities and economies.

Early Warning System: The set of capacities available needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of the disaster.

Exposure: People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses or subject to potential effects of hazards.

Forecast: A prediction or estimate of future events or conditions based on current data, trends, and analysis.

weaken community resilience to the effects of climate change.

The country national economy is heavily dependent on natural resource extraction. The oil sector accounts for more than one third of gross domestic product, 90 per cent of central government revenue and over 95 per cent of the exports.[5] At the same time, charcoal production serves as a critical coping mechanism for households facing financial hardship. However, the largely unregulated nature of the charcoal sector is accelerating deforestation, driving environmental degradation, and contributing to significant ecosystem losses for surrounding communities. These trends compound existing vulnerabilities by increasing exposure to climate-related shocks and undermining the long-term resilience of both livelihoods and natural resources.[6]

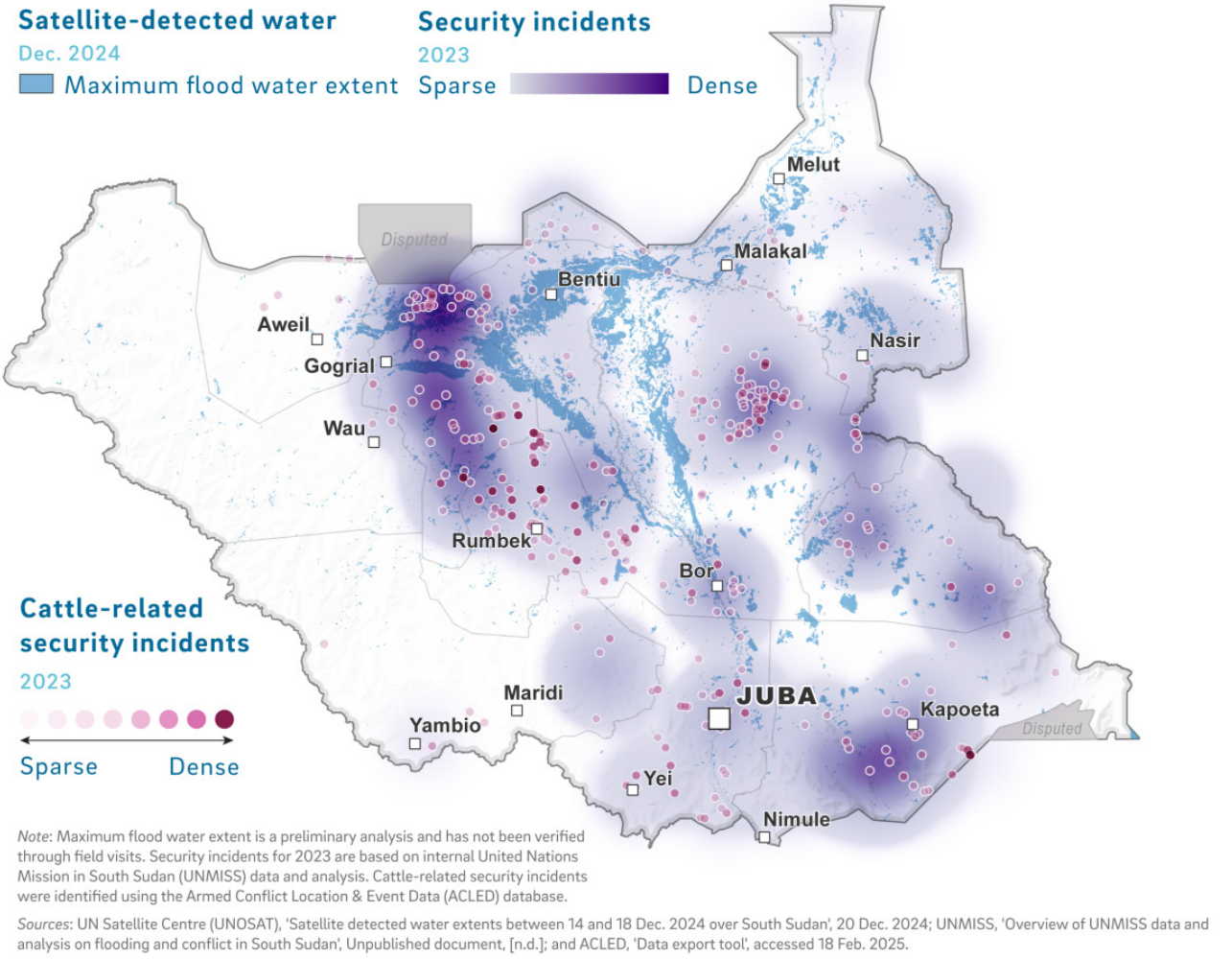

Figure 2: Flooding and security incidents in South Sudan (Source: SIPRI and NUPI 2025)

5 World Bank Group, 'Country engagement notes for South Sudan for the period FY21–FY23', Report no. 158008-SS, 15 Apr. 2021.
6 Tiitmamer, N. and Anai, J. G., 'The tragedy of the unregulated: Why the government should reform the charcoal sector', Sudd Institute Policy Brief, 26 Apr. 2022.

1.2.1. Flood

The South Sudan's hotspot States (Jonglei, Northern Bahr el Ghazal, Unity, and Upper Nile) usually go through seasonal changes, with water levels fluctuating throughout the year. Since 2019, heavier-than-normal rains and rising lake levels have led to more widespread flooding. The situation is made worse by ongoing conflict, the complex water flow patterns in low-lying areas, and the lack of reliable hydrological data.

In the states like Jonglei, Lakes, Warrap, Northern Bahr el Ghazal, Unity, and Upper Nile, and administrative areas like Ruweng , Greater Pibor and Abyei as well as parts of Greater Equatoria, flooding is a perennial challenge. The extent of damage varies from county to county and year to year. The impact also depends on when the floods arrive. If they hit during the planting season or just before harvest, the losses to crops and livestock can be devastating. Pastureland is also affected, forcing herders to move their animals under difficult and often unsafe conditions.

The most common types of flooding in South Sudan are flash floods and riverine floods, often triggered by excessive rainfall and overflowing rivers, some of which flow in from neighbouring countries, complicating management efforts.

All these make it difficult to use standard flood forecasting systems. Between 2019 to 2022, the country experienced one of the worst flooding in its history, affecting more than 1,000,000 people. Crops and livestock production were severely affected. A FAO assessment report in 2021 showed that more than 65,000 hectares of cereal fields had been destroyed by floods, resulting in the loss of nearly 38,000 tonnes of grain.

The 2025 floods once again inundated large parts of the country. Beyond the immediate destruction, these floods also have long-term consequences for peace and stability. Communities already struggling with displacement and insecurity now face additional pressures from destroyed homes, lost farmland, damaged health facilities, and impassable roads[7] .

Figure 3: A road between Malakal and Renk swept away by severe flooding, leaving it nearly impassable and cutting off access to essential services while disrupting livelihoods. Photo | UNMISS

7 National Strategy for Disaster Risk Management in South Sudan and Plan of Action (2019–2024).

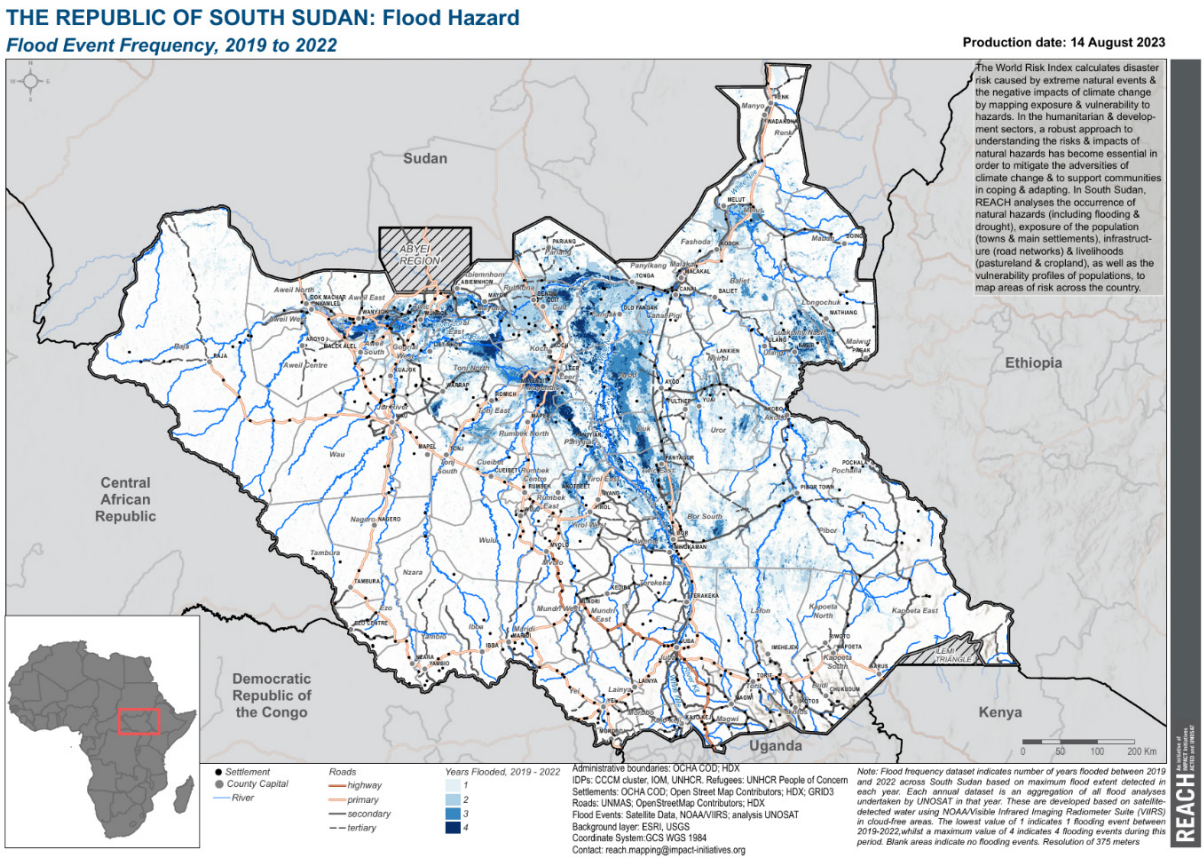

Figure 4: Flood Frequency (2019-2022, Source: REACH Impact Initiative, ACTED and UNOSAT).

***Figure 5**: Drought impact / dried up sorghum fields in Kapoeta East. Photo | Simon ARUEI, Programme Associate, RAM Focal Person*

1.2.2. Drought

Over the past two decades, drought has become more frequent and severe. In the year 2000, several regions including Equatoria, Jonglei, and Bahr el-Ghazal were hit by harsh dry conditions that destroyed crops and left families struggling for food. Between 2008 and 2009, Eastern Equatoria experienced another prolonged drought, which deepened hunger and forced communities to adopt negative coping strategies. In 2023, the dry season was so severe that women and girls died from dehydration after walking over twenty miles in search of water, carrying heavy containers in the heat.

Over the north (Unity and Upper Nile), Eastern part of Jonglei, and in the southeast, including areas of Eastern Equatoria, rainfall is naturally low and has been declining. These regions face the greatest exposure to drought risk. States like Warrap, Lakes, Jonglei, and Central Equatoria also experience recurrent drought, although conditions differ depending on the year and location (Figure 4).

Figure 6: Population Annually Exposed to Drought (Fernando & Garvey, 2013)

Drought in the country often occurs alongside other crises such as conflict, flooding, and displacement. When crops fail and livestock die, families are forced to move in search of water and pasture. This movement sometimes sparks new conflicts, as communities compete over the few remaining resources. The cyclic nature of drought, and displacement underlines the urgent need for climate adaptation, investment in water management, and peacebuilding efforts to reduce the risks faced by vulnerable communities.

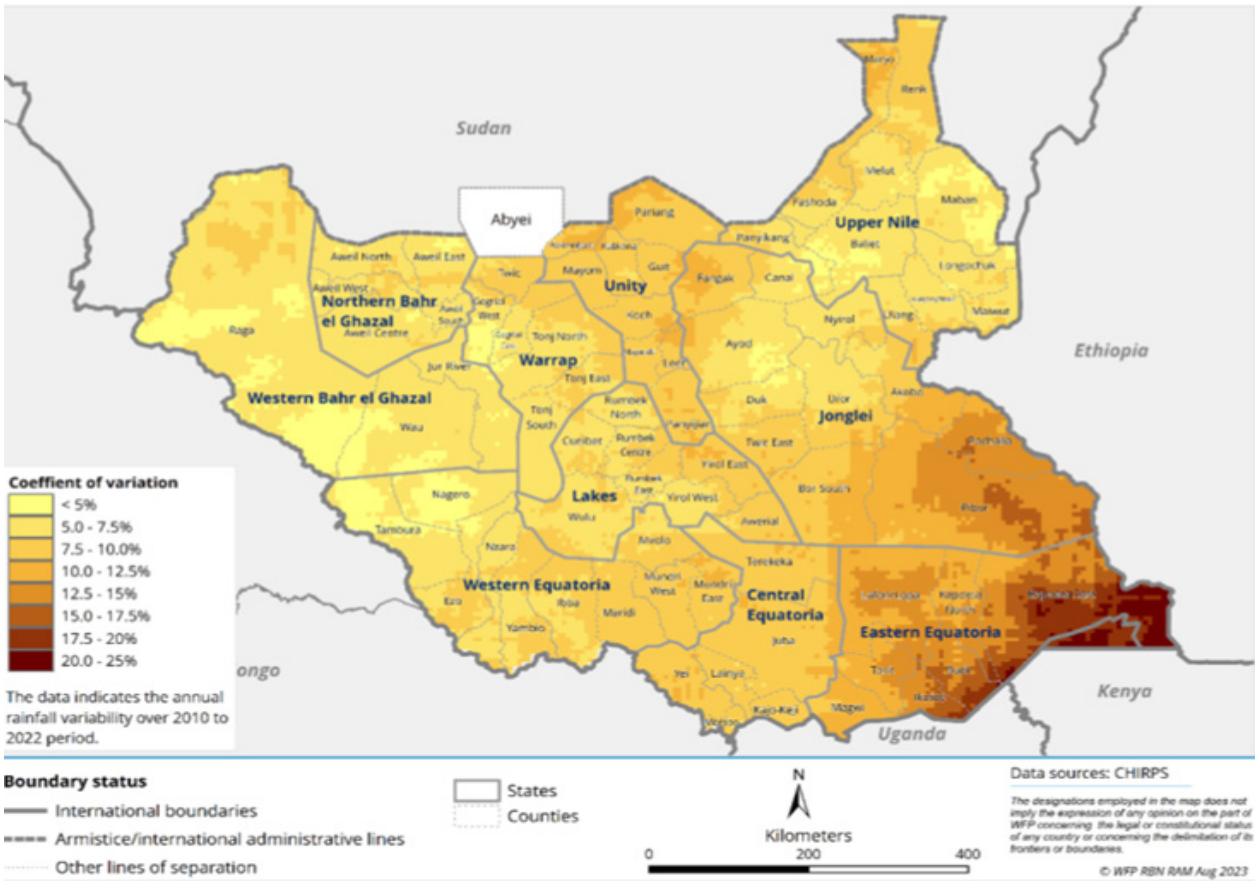

Figure 7: Showing Annual rainfall variability over 2010 to 2022 period (Source: WFP RBN)

1.2.3. Epidemics

South Sudan continues to face recurrent epidemics driven by fragile health systems, limited infrastructure, and ongoing humanitarian crises. The most common outbreaks of water-bone or vector bone diseases include cholera, measles, malaria, meningitis, anthrax, and viral haemorrhagic fevers such as Ebola (1976) and Rift Valley Fever among other maladies. These outbreaks are exacerbated by widespread displacement, recurrent flooding, poor sanitation, weak disease surveillance, and limited access to essential healthcare services. Indeed, epidemics often strain already scarce resources, disrupt livelihoods, and heighten vulnerability, particularly among children and displaced populations. Strengthening early detection, integrated disease surveillance, and rapid response through the One Health approach is therefore critical to reducing the impact of epidemics and improving public health security in South Sudan.

In addition to these recurring epidemics, the country is highly susceptible to emerging infectious diseases, particularly zoonotic ones. This vulnerability is closely linked to environmental conditions, as illustrated by the extensive flooding in 2022 attributed to climate change, according to the South Sudan Monthly Humanitarian Situation Report. A major driver of zoonotic disease transmission is the close interaction between humans and animals, including livestock and wildlife, arising from predominantly rural livelihoods. Cultural practices such as the consumption of raw milk and animal blood, as well as poaching, further increase the risk of pathogen transmission between humans and animals.

The countries rich biodiversity, covering approximately 34.2 to 45 per cent of its land area, according to the National Environmental Policy 2015–2025—adds another layer of complexity. The encroachment on wildlife habitats through illegal logging and mining has

intensified human–wildlife contact, particularly with species such as non-human primates and the pygmy hippopotamus.

The weaknesses in the health system exacerbate the challenge of disease detection and containment. Surveillance systems for animal diseases remain rudimentary, with limited personnel and resources dedicated to monitoring and reporting. Additionally, the importation of livestock and poultry, often conducted without adequate documentation, increases the risk of introducing infectious diseases into the country. Despite existing national guidelines, inappropriate antibiotic use remains widespread in health facilities, contributing to the emergence and potential spread of antibiotic-resistant pathogens. However, reliable data on the burden of antimicrobial resistance (AMR) in South Sudan remain limited, which constrains evidence-based response efforts. Overall, the country's vulnerability to emerging infectious diseases results from a combination of environmental pressures, cultural practices, encroachment on wildlife habitats, weaknesses in the health system, and improper antibiotic use. Addressing these interconnected challenges requires a multifaceted approach that includes strengthened surveillance systems, expanded public awareness initiatives, improved regulatory enforcement, and enhanced healthcare infrastructure, as outlined in the National Action Plan for Health Security (NAPHS 2025–2030).

Figure 8: A doctor examining a child in Nasir County, South Sudan. Photo | South Sudan UNICEF

1.2.4. Conflict

Since 2013, South Sudan has experienced ongoing internal conflict. The conflict has resulted in thousands of deaths and the internal displacement of hundreds of thousands of people. Although a peace treaty, which included a power-sharing agreement between the government and the opposition, was signed in 2018, the country remains the third most fragile state in the world, after Yemen and Somalia.[8]

Nonetheless, the overall security situation has improved since late 2018, following the signing of the Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS). According to the United Nations High Commissioner for Refugees (UNHCR), about 600,000 refugees have returned to South Sudan in a self-organized manner since the signing of the R-ARCSS[9]. Large-scale political conflict has remained low since the ceasefire of September 2018. However, intercommunal violence continues to threaten stability and food security. Such violence disrupts livelihoods through displacement, population movements, reduced crop production, and limited market access. It also hampers the delivery of humanitarian assistance. The states most affected by inter-communal conflict include Jonglei, Warrap, Upper Nile, Unity, and Western Equatoria.

The AA programming is designed to reduce the impact of disasters on vulnerable communities. By implementing early actions, the severity of hazards arising from competition over resources can be mitigated, ultimately helping to reduce intercommunal tensions and conflict.

1.2.5. Pests and Diseases

South Sudan is among the world's climate change hotspots, experiencing an increasing frequency of extreme climatic events that affect plant health. A major concern is the rising emergence and incidence of crop pests, which threaten the plant health and livelihoods of approximately 86% of rural households that depend on agriculture. Common pests include elegant grasshoppers (*Zonocerus* spp.), bollworms, cassava whiteflies, cutworms, African armyworms, stalk borers, and aphids, some of which are invasive species associated with climate change.

The fall armyworm not only affects maize, the predominant staple food crop in South Sudan, but also damages sorghum, millet, vegetables, and other crops of economic importance. Furthermore, endemic diseases such as haemorrhagic septicaemia, contagious bovine pleuropneumonia, anthrax, and *peste des petits* ruminants severely undermine livestock production and threaten the livelihoods of 65 per cent of the population (FAO, 2016c). Compounding this issue, a FAO report notes that transboundary diseases, including foot-and-mouth disease and rabies, threaten the lives of millions of animals (FAO, 2016d). The Comprehensive Agriculture Master Plan (CAMP) ultimately reports that the combined impact of these livestock diseases on food security is enormous, with losses in meat and milk production and related treatment costs amounting to hundreds of millions of US dollars (RSS, 2015).

1.2.6. Desert Locust

The Horn of Africa nations faced one of its unprecedented hazards in the form of Desert Locust. The most recent and severe desert locust attack in the region began in June 2019 and continued as a major upsurge until early 2022. The invasion peaked in 2020. Based on the Integrated Food Security Phase Classification (IPC September 2025) analyses, an estimated 3.24 million faced severe food insecurity in Uganda and South Sudan, bringing the total number of the population at risk to over 13 million[10].

The desert locust threat was fueled by a combination of two consecutive failed rainy

8 Republic of South Sudan, Ministry of Environment and Forestry. (2021). National Adaptation Plan for Climate Change. Juba, South Sudan: Government of South Sudan. Retrieved from https://napreadiness.hcenr.gov.sd/wp-content/uploads/2025/07/NAP-Readiness_Project_Climate_Down-scaling_and_projection_final_report.pdf

9 National Strategy for Disaster Risk Management in South Sudan and Plan of Action (2019–2024).

10 Integrated Food Security Phase Classification (IPC). (2025, November 4). South Sudan: IPC Acute Food Insecurity and Malnutrition Snapshot (September 2025 – July 2026). Food Security Portal. https://www.foodsecurityportal.org/sites/default/files/2025-11/IPC_South_Sudan_Acute_Food_Insecurity_Malnutrition_Sept2025_July2026_Snapshot.pdf

seasons, drought, torrential rains, flooding, ongoing conflict, and broader economic shocks. Together, these conditions created ideal breeding grounds for locust swarms to multiply and spread into neighbouring areas. In 2020, South Sudan experienced one of its most severe desert locust invasions. For a country where much of the population depends on subsistence farming, the impact was devastating, particularly in Eastern Equatoria, Central Equatoria, Northern Bahr el Ghazal, Jonglei, and Upper Nile states. The destruction of crops and grazing land significantly affected incomes and food security, threatening the country's food supplies and livelihoods. It is estimated that the invasion caused about 55 per cent of the population to face a food crisis[11].

When desert locust invasions coincide with other climate shocks and exacerbating factors, humanitarian needs rise sharply. As the locust swarms are transboundary in nature, neighbouring countries such as Uganda, Kenya, and Ethiopia are also affected. This further complicates control efforts and underscores the need for strong regional coordination. With the impacts of climate change projected to increase, the frequency and intensity of such outbreaks are expected to persist or even worsen.

Recognizing this urgency, the Government of South Sudan, together with partners such as the World Bank, has rolled out interventions, including the Emergency Locust Response Project, to help reduce the impact of desert locusts on food production and to strengthen resilience against future outbreaks. In this context, developing a multi-hazard AA roadmap is critical. The AA roadmap will strengthen and integrate forward-looking strategies to mitigate emerging risks, safeguard livelihoods, and leverage opportunities for sustainable development in the country.

1.2.7. Heatwaves

Heatwave is an increasingly frequent hazard affecting South Sudan attributed to the changing climate. It is characterized by extreme temperatures reaching up to 40 - 43 °C in many areas of South Sudan including Juba. Schools were closed for up to 2 weeks in March 2023 and 2024 and February 2025 by the government to protect pupils from the heat wave impacts[12]. The impacts and risks associated with heatwaves include health effects such as heat stroke and dehydration, disruptions to basic services (including education, healthcare, and transport), and economic impacts, such as reduced working hours that in turn lower productivity.

The high number of hazards, the nature of their occurrence and the impact on population at risk in the country underscores the critical need for a multi-hazard early warning system and a multi-hazard AA system. This system is crucial for addressing the multi-layered threats posed by multiple hazards. By integrating real-time monitoring, data analysis, and coordinated response mechanisms, multi-hazard early warning and anticipatory action systems help deliver timely alerts. These alerts enable early action that reduces the risk of losing lives, property, and livelihoods. Developing a multi-hazard anticipatory action roadmap is also essential. It helps countries address challenges posed by multiple hazards by strengthening and aligning forward-looking anticipatory strategies.

11 World Food Programme. 2020. "Locusts Are a Moving Target and We Are Racing against Time." World Food Programme, February 17, 2020. https://www.wfp.org/stories/locusts-are-moving-target-and-we-are-racing-against-time.

12 Save the Children. (2025, February 21). South Sudan heatwave forces schools shut for second year running. ReliefWeb. Retrieved December 1, 2025, from https://reliefweb.int/report/south-sudan/south-sudan-heatwave-forces-schools-shut-second-year-running

2.3 The South Sudan Early Warning System

South Sudan is enhancing its early warning systems (EWS) through the national implementation of the Global Early Warnings for All initiative (EW4All), the IGAD Conflict Early Warning and Response Mechanism (CEWARN) the Systematic Observation Financing Facility (SOFF) initiative and Strengthening Capacity of Government and Communities in South Sudan to Adapt to Climate Change (SUSTAIN) among other initiatives. These efforts focus on closing the observation gap, disaster risk knowledge, hazard forecasting, monitoring, communication, and community preparedness.

There has been noticeable progress towards AA design and implementation of various initiatives through multi partner and agencies effort under the leadership of MHADM. Key developments include the establishment of a National TWG-AA , the development of an AA model for conflict and displacement, Drought AA pilot in Kapoeta North and Budi counties, and a continuous capacity building of SSMS in forecasting skills and the development of drought AA triggers, the revision of the Disaster Risk Management Policy, and Disaster Bill to include AA which further contribute to multi-hazard AA programming in the country. The nutrition cluster is currently developing recommendations intended to institute a structured and harmonized approach for locally led AA for better nutrition outcomes, contributing to the national processes for a multi-hazard AA in South Sudan. Nutrition sensitive AA will ride on climate predictive models of hazards of focus such as conflict, flood and drought. The early actions for floods implemented in Unity State in 2022, have shown promising results in preventing displacement and reducing disease outbreaks.

Despite all these efforts, the AA initiatives remain partly fragmented, as different projects overlaps without proper coordination as various institutions adopt siloed approach and institutional lenses towards AA implementation. There are however existing gaps including limited hazard forecasting capacity, limitations in-terms of observations and IT infrastructure in the country, fragmented climate services communication mechanisms, unavailability of financing mechanism for AA, absence of AA plans for different hazards of priority. These gaps continue to hinder the broader implementation of anticipatory approach. The above underscores the need, to establish a multi-hazard anticipatory action system capable of addressing risks such as droughts, floods, heatwaves, pests, diseases, and conflict-related threats.

2.4 Anticipatory Action Approach

There are multiple operational definitions of AA depending on the context and the institutional mandate. The Grand Bargain, a caucus of largest donors and aid providers[13] agree that, despite the varied definitions of AA, any AA interventions should be implemented to achieve the following:

Reduce human suffering and minimize the impacts on lives and livelihoods from forecastable hazards, while safeguarding development gains. Ensure that actions are designed using forecasts or predictive analyses that indicate when and where a hazardous event is likely to occur. Initiate actions before the hazard strikes or before its most severe impacts are felt. Enable fast and timely support to vulnerable people, ensuring they receive assistance when it can make the greatest difference.

In this SSRAA, AA is defined as pre-agreed interventions taken ahead of a predicted hazardous event to prevent or reduce impacts on lives and livelihoods and humanitarian needs before they fully unfold or its most acute impact are felt. This works best when activities, as well as triggers or decision-making rules, are pre-agreed, and decisions are made to guarantee the fast release of pre-arranged

13 Inter-Agency Standing Committee (IASC). (2023). Outcome document: Commitments of the Grand Bargain caucus on scaling anticipatory action. ReliefWeb. https://reliefweb.int/report/world/outcome-document-commitments-grand-bargain-caucus-scaling-anticipatory-action

funding[14] This definition is also consistent with IGAD approach to AA definition.[15] The successful implementation of AA is contingent upon the following components:

- Pre-agreed plans that consolidate the key information and implementation arrangements (procedures and partnerships) required to deliver timely action ahead.
- Forecasts or risk analysis with sufficient lead time to allow for the implementation of the actions in the anticipatory window (between when a forecast is issued and before the hazard occurs or the impacts are felt). For an effective trigger, the forecast or risk analysis need to not only indicate a future hazard but also present the potential impacts of the hazards: who would be affected, in what way, when and where.
- Consideration of vulnerabilities related to cultural norms, age, gender, and socio-economic status.
- A co-production process between forecasters, research scientists, key sector institutions in government, humanitarian and development organisations, and at-risk communities with meaningful participation of women and youth, and consideration of indigenous knowledge.
- Pre-identified financing to support the implementation of AAs and a pre-arranged framework to automatically release funds in an efficient and timely manner.

The national SSRAA aim to address these challenges by developing a coordinated, multi-sectoral framework for early warning and early actions. It will provide clear roles, standard operating processes, triggers, finance systems, and community engagement strategies. The roadmap, which aligns with regional and global frameworks such as IGAD's roadmap and the UN's Early Warnings for All initiative, aims to strengthen institutional capacity, improve preparedness, and build long-term resilience. Finally, it would enable South Sudan to better manage disaster risks, attract donor support, and protect development achievements in the face of rising climatic and humanitarian pressures.

The SSRAA provides guidance to track and consolidate national efforts towards establishing, implementing and coordinating the AA approaches. The SSRAA is structured around the following components: Background, Vision and Mission, Goals and Objectives, Six Priority Pillars, Activities, Outcome and Results Framework and Reporting for the Roadmap.

14 United Nations Office for Disaster Risk Reduction and United Nations Office for the Coordination of Humanitarian Affairs (2024). Briefing Note: Anticipatory Action – An innovative tool at the intersection of disaster risk reduction and humanitarian response, United Nations Office for Disaster Risk Reduction.

15 Intergovernmental Authority on Development (IGAD) & IGAD Climate Prediction and Applications Centre (ICPAC). (2024). IGAD Regional Roadmap for Anticipatory Action. Nairobi, Kenya: IGAD. Retrieved from https://www.icpac.net/publications/igad-regional-roadmap-for-anticipatory-action/

5.2 Pillar 1: Risk Knowledge

Outcome 1: Improved understanding of risk knowledge at communities for development of risk-informed triggers and thresholds

The development of an effective AA requires rigorous analysis and understanding of risk information for the communities. The identification of intervention areas and implementation of anticipatory action should be greatly informed by the risk assessment and analysis. This entails looking at the aspect of exposure, vulnerability, and coping mechanism of the communities likely to be impacted by various risk levels. With clear risk assessment and analysis coupled with reliable and timely triggers and threshold forecast, the roll out of AA will be well informed and hence, targeting the right communities who are at risk. The outcome of this pillar focuses on improved understanding of risk level at communities for development of risk-informed Triggers and Thresholds for AA.

5.2.1. Indicative Activities

- Assess and evaluate the existing risk profiles for different climatic and non-climatic hazards.
- Undertake detailed exposure and coping mechanism analysis for different livelihood zones.
- Identify, analyse and validate various vulnerability indicators for multi-hazards for different livelihood zones.
- Develop and validate detail risk maps to inform AA interventions for different livelihood.
- Strengthening capacity of communities and local actors on understanding the risk maps for different climatic and non-climatic hazards.
- Integration of risk information (indicators and data) into the existing Information Management System for contextualised AA design.

Figure 12: A farmer from Gok Machar, tends to his crops in Aweil North County, Northern Bahr el Ghazal State, South Sudan. Photo| UNOPS

5.3 Pillar 2: Trigger and Early Warning Systems

Outcome 2: Strengthened the capacity of and infrastructure of the South Sudan Meteorological Service (SSMS) to provide Impact based forecasting and early warning Information.

The early warning information forms the foundation for implementing AA initiatives. Its effectiveness depends on the availability and quality of data to support the development of impact-based forecasting (IbF) and AA protocols. In South Sudan, weak weather observation networks and limited socio-economic data hinder the production of reliable weather and climate information.

Furthermore, the low technical capacity hinders the development of IbF that is essential for designing and operationalizing AA. The main outcome of Pillar 2 is *strengthened the capacity of the SSMS to provide Impact based Forecasting and Early Warning Information*. This will ensure more accurate impact predictions and better targeting of at-risk populations. It will also support sustainable, institutionalized triggers across agencies, enhancing coordination and the effectiveness of anticipatory actions.

5.3.1. Indicative Activities

a. Enhancing the technical capacity of SSMS and stakeholders to generate and apply impact-based forecasts, thresholds, and triggers.

b. Developing technical guidance and tools for the design of triggers, thresholds, IbF, and data requirements.

c. Mapping hazards, vulnerabilities, and associated impacts to inform IbF and AA protocols.

d. Establishing a centralized repository for data and information management to support multi-hazard IbF, EW, and trigger-threshold development linked to Regional AA system.

e. Expanding and improving weather observatory network coverage across the country.

f. Developing training modules to build the capacity of intermediaries in interpreting and translating meteorological information into Indigenous languages for communities.

g. Integrate climate change projections into risk assessments.

h. Enhance regional cooperation for cross-border data exchange (e.g., between national meteorological agencies.

5.4 Pillar 3: Anticipatory Actions

Outcome 3: A harmonized approach to design and deliver Anticipatory Actions

The AA are humanitarian interventions that are planned and implemented before a crisis fully unfolds, based on early warning information and defined forecast triggers and thresholds. Instead of waiting for disasters such as floods, drought, or conflict-related displacements to cause widespread suffering, anticipatory approach uses predictive models to trigger pre-agreed actions. These actions may include distributing cash transfers, pre-positioning food or medical supplies, or protecting livestock and assets. These are measures designed to reduce the humanitarian impact of expected shocks and enable faster recovery.

In South Sudan, AA has become significantly important because the country faces recurrent climate-related hazards, especially severe flooding and drought, compounded by conflict and fragile infrastructure. Seasonal rains often cause rivers like the Nile to overflow, displacing communities, destroying crops, and cutting off access to markets and health services. By using climate forecasts, and hydrological models, humanitarian agencies including government can identify high-risk areas weeks in advance and activate readiness plans ahead of rolling out the prioritized actions.

Several organizations such as the UN Office for the Coordination of Humanitarian Affairs (OCHA), WFP, DRC, WHH and the Red Cross Red Crescent Movement are piloting anticipatory action frameworks in South Sudan. These efforts are part of a broader global shift toward proactive disaster management, aiming

to make humanitarian interventions more timely, cost-effective, and dignified. However, challenges remain, such as limited forecasting accuracy in complex flood-prone regions, coordination among actors, and funding for anticipatory triggers. Despite these obstacles, AA in South Sudan demonstrates a promising shift from reacting to crises to managing risks before they escalate.

This pillar focuses on strengthening preparedness and coordinated responses to emerging threats through four strategic priorities. First, standardizing the approach to designing AA is critical to ensure consistency, effectiveness, and replicability across regions and partners. This harmonized methodology will guide the timing, scale, and nature of interventions to optimize their impact on vulnerable communities.

Second, conducting joint simulations based on mutually agreed activation mechanisms will enhance multi-agency coordination and readiness. These simulations will serve as practical rehearsals, building trust and seamless collaboration among stakeholders before real-life events occur. The simulations will also help measure the level of community preparedness for different hazards.

Ultimately, enhancing the capacity of AA practitioners to implement joint anticipatory actions at the community level is crucial for local ownership and effective delivery.

The main outcome of this pillar is to establish *a harmonised approach to design and deliver a multi-hazard AAs at scale in the country.* The multi-hazard AA approach focuses on proactive, coordinated planning across sectors using forecasts, vulnerability data, and pre-arranged resources to mitigate the impact of predictable shocks.

5.4.1. Indicative Activities

- Develop standardized approaches to designing AAs to ensure consistency, effectiveness, and replicability.
- Joint simulation exercises on the agreed activation mechanisms to establish the level of community preparedness for different hazards.
- Build the capacity of various stakeholders to deliver joint AAs at communities.
- Develop standardised AAPs for multi-hazard.
- Joint activation of the AAPs when the thresholds is reached for the forecasted hazard.

5.5 Pillar 4: Financing Mechanism

Outcome 4: Improved access to AA Financing through the National Disaster Risk Management Policy, Disaster Risk Management Bill and multi-hazard-contingency planning.

The funding for DRR and AA are essential for both system-building ("build funds") and implementation ("fuel funds"). In South Sudan, implementation and rollout of multi-hazard AA remain low since the concept is still relatively new, and financing mechanisms for AA are not yet well established. Currently, AA is largely implemented on a project basis by humanitarian organizations on pilot initiatives. Government contributions are limited to small allocations released to ministries for response activities, guided by preparedness and response plans. This is also due to lack of clear DRR financing strategy to focus on risk-informed development, innovative financial tools financing and blended finance and strengthening social protection systems.

The Government of South Sudan collaborates with international partners, including African Development Bank (ADB), Africa Risk Capacity (ARC), through regional initiatives like the Africa Disaster Risk Financing Initiative (ADRiFi) of the World Bank, Government of Netherlands, to enhance climate resilience and mobilize funding for disaster preparedness and response.

5.5.1. Indicative Activities

However, for long-term sustainability, the country must develop a country-specific financing strategy that draws on public and private sector resources as well as sustainable finance instruments such as green

bonds and blended finance. The aim of this overarching pillar is therefore to strengthen and operationalize the DRF framework while expanding and diversifying financing pathways for a multi-hazard anticipatory action system.

- Engage government, partners, and other stakeholders in preparedness, AAs, response, and recovery to establish financing mechanisms for AA and DRM.
- Development and implementation of DRM policy and DRF.
- Mapping potential donors, development and humanitarian agencies, private sector actors, and NGOs for pooled funding.
- Develop accountability mechanisms and structures at all levels for transparent resource management.
- Advocate for allocation of funding both "build" and "fuel" for the development of trigger models and AAPs across all levels.
- Promote blended financing mechanisms such as bonds and public–private partnerships.
- Develop sovereign risk transfer mechanisms (e.g., regional risk pools like African Risk Capacity).

5.6 Pillar 5: Coordination and Legal Framework

Outcome 5: Enhanced and strengthened institutional coordination and capacities at all levels for inclusive early warning, AA and climate services.

There is a growing national commitment to advancing AA and climate services in South Sudan. The MHADM is taking a leading role in steering the country's strategic direction toward institutionalizing AA within national disaster management and climate resilience frameworks. Under Pillar 5, *the key outcome is to strengthen institutional coordination and capacity at national, state, and local levels to enable inclusive and effective early warning systems, anticipatory action, and climate services.* This effort aims to ensure that early warning information is timely, accessible, and actionable, supporting evidence-based decision-making, reducing disaster impacts, and enhancing community resilience to climate-related shocks.

5.6.1 Indicative Activities

- Establish coordination platforms for AA at subnational levels linked to national NTWG-AA.
- Conduct quarterly meetings at all levels, providing updates on operations, sharing experiences, and jointly developing AA tools for implementation and monitoring.
- Enactment of AA Roadmap into the DRM policy and strategy.
- Develop an advocacy strategy for sensitization and awareness creation on AA to legislators, and ministers.
- Establishment of community groups/ radio listening hubs to act as points for disseminating early warnings, weather and climate information in communities.
- Develop Standard Operating Procedures (SOP) for the process of developing contingency plans and AA plans for implementation.

5.7 Pillar 6: Gender, Inclusivity, and Social Protection

Outcome 6: Developed AA programs that considers all social protection groups in South Sudan.

The integration of gender, inclusivity, and social protection into Anticipatory Action (AA) requires the design and implementation of activities that recognize and respond to the distinct needs, vulnerabilities, and capacities of diverse population groups. These include women, men, children and youth, persons with disabilities, marginalized communities, and other socio-economically vulnerable groups. Ensuring equity within AA means guaranteeing fair access to information, resources, and decision-making processes before, during, and after crises.

To achieve this, comprehensive risk analyses must incorporate disaggregated data by gender, age, disability, and socio-economic

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Pilar 2: Trigger and Early Warning Systems **Outcome 2: Strengthened capacity of South Sudan Meteorological Service to provide Impact based Forecasting and Early Warning Information**						
Enhancing the technical capacity of SSMS and stakeholders to generate and apply impact-based forecasts, thresholds, and triggers	SSMS, Relevant Ministries e.g., MoEF, MHADM, MoAFS, MoWRI	Technical capacity of SSMS staff developed in generating forecasts, developing triggers and threshold for different hazards of interests	Number of staff Trained on IBF and trigger design Number of technical trainings conducted	Training reports Forecast products	MHADM	SSMS, MWRI, MAFS, MLF, UN Agencies, NGOs, Communities
Developing technical guidance and tools for the design of triggers, thresholds, IbF, and data requirements		Validated technical guidelines in place Hazard specific triggers and thresholds developed	Number of guidelines and tools developed Number of hazards with defined thresholds and data requirements	Approved guidelines Validation workshop reports TWG endorsement records		
Enhance capacities for weather forecasting, flood forecasting, and climate prediction		Improved forecasting infrastructure and staff capacity for multi-hazard early warning	Number of AWS stations installed Number of forecasters trained	AWS installation and maintenance records Assessment reports, forecasts parameters document		
Mapping hazards, vulnerabilities, and associated impacts to inform IbF and AA protocols		Harmonized impact scenarios and AA tools developed to inform trigger and AAPs design	Number of hazard and impact scenarios developed Number of tools and guidelines developed for harmonization	National TWG-AA reports Developed tools and guidelines Validated AA protocols		
Establishing a centralized repository for data and information management to support multi-hazard IbF, EW, and trigger-threshold development		Centralized multi-hazard data repository established within SSMS for AA and forecast integration	Number of datasets uploaded and validated	SSMS database records		

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Expanding and improving rainfall station network coverage across the country		Rainfall station network expanded and calibrated to enhance forecast accuracy and coverage	Number of rainfall stations installed and operational	Rainfall station installation and maintenance record		
Developing training modules to build the capacity of intermediaries in interpreting and translating meteorological information into indigenous languages for communities		Culturally appropriate risk communication modules developed and implemented through trained intermediaries	Number and type of training modules developed	Training materials		
Pillar 3: Anticipatory Action **Outcome 3: A harmonized approach to design and deliver Anticipatory Actions at scale**						
Develop standardized approaches to designing AAs to ensure consistency, effectiveness, and replicability	National and Sub-national levels	National and sub-national AA approaches standardized and aligned with AA TWG guidance	Number of standardized AA design templates developed	Endorsed guidelines by the AA TWG	MHADM	Line Ministries (Eg MOH, MWRI, MAFS, MoEF, MLF UN Agencies, INGOs, NGOs, Communities
Joint simulation exercises on the agreed activation mechanisms to establish the level of community preparedness for different hazards		Simulation exercises for priority hazards conducted at national and community levels	Number of simulation exercises conducted	Simulation reports		
Build the capacity of various stakeholders to deliver joint AAs at communities		Stakeholder capacity enhanced to implement AA protocols jointly	Number of stakeholders trained	Training reports		

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Develop standardized AAPs for different hazards in consultations with national AA TWG		The AAP for specific hazard developed (AAP includes threshold, triggers, forecast, anticipatory actions, beneficiary numbers, M&E framework and funding) in consultations with communities	Number of AAPs developed Number of AAPs validated	AAPs endorsed and validated by the government and key stakeholders		
Joint activation of the AAPs when the thresholds is reached for the forecasted hazard		Coordinated activation of AAPs in response to validated triggers ensured	Number of AAPs activated	Trigger activation reports		
Pillar 4: Financing Mechanism **Outcome 4: Improved access to Anticipatory Action Financing through the National Disaster Risk Finance Strategy, and contingency planning**						
Engage government, partners, and stakeholders in preparedness, response, and recovery to establish financing mechanisms for AA and DRM	International bodies, National and Sub national levels, Private sector	Established financial frameworks of DRM policy	Approved policies for AA and DRM	Copy of approved AA and DRM policy passed into law	MHADM	Ministry of Finance and Planning MWRI MoEF World Bank African Development Bank Oil Companies UN Agencies Communities and other potential partners
Finalize the development and implementation of DRM policy and DRF		Accountability and management structure established for resource mobilization and the release of funds	Numbers of states and counties with established financial or resource mobilization and management accountability committee/structures	Available report of the accountable members or the structure established		
Map potential donors and actors such as development and humanitarian agencies, financial institutions, private sector, and NGOs for pooled funding		Established contacts of potential donors and funding sources locally and internationally	Number of donors and private-sector partners mapped	Donor mapping database		

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Develop accountability protocols and structures at all levels for transparent resource management		Accountability and management structures established for resource mobilization and fund release	Number of established accountability mechanisms and financial management committees	Official documentation of financial committees		
Advocate for allocation of funding both "build" and "fuel" for the development of trigger models and AAPs across all levels		Budgetary allocations and funding commitments made for anticipatory actions and trigger models	Percentage increase in national budget allocation to AA/DRM initiatives	National and sub-national budget documents Parliamentary approvals and finance statements		
Promote blended financing mechanisms such as bonds and public–private partnerships		Blended finance models introduced to diversify AA and DRM funding sources	Number of PPP or blended finance arrangements established	MoUs and partnership agreements		
Pillar 5: Coordination and Legal Framework **Outcome 5: Enhanced and strengthened institutional coordination and capacities at all levels for inclusive early warning, AA and climate services**						
Establish coordination platforms for AA at subnational levels linked to national NTWG-AA	National and Sub-levels TWG-AA at National and Sub-national levels	Active and functional TWGAA National and Sub-national levels established	Number of TWG-AA established	Meeting minutes and attendance sheets TORs of established coordination groups	MHADM	RRC, MGC&SW, SSRC, NCA, Ministry of Information, Communica-tion and Postal Services, UN Agencies, INGOs, NNGOs Other Line Ministries
Conduct quarterly meetings at all levels, providing updates on operations, sharing experiences, and jointly developing AA tools for implementation and monitoring		SOPs for developing a contingency plan developed	Number of quarterly TWG-AA meetings held	Meeting minutes and reports		
Support the enactment of AA Roadmap into the DRM policy, DRM Bill, and strategy		AA integrated into national DRM legislation and policy instruments	Number of policy and legal frameworks revised to include AA	Copy of revised DRM policy and DRM Bill Contingency plan Documents		

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Develop an advocacy strategy for sensitization and awareness creation on AA to legislators, and ministers		Advocacy and communication strategy for AA developed and implemented	Number of advocacy events held with legislators and ministers Number of awareness materials developed and disseminated	Advocacy strategy document		
Establishment of community groups/ radio listening hubs to act as points for disseminating early warnings, weather and climate information in communities		Climate information communication mechanism developed	Number of community groups / radio hubs established Developed channel of communication / communication protocols	Field visit reports Radio program logs and partner monitoring data feedback from the end-user		
Develop clear Standard Operating Procedures (SOP) for the process of developing contingency plans and AA plans for implementation		Standardized SOPs for contingency and AA planning developed and disseminated nationally	Number of SOPs developed and validated Number of stakeholders trained in SOP application	SOP documents Training/workshop reports		
Pillar 6: Gender, Inclusivity, and Social Protection **Outcome 6: Developed AA programs that consider gender and all social protection groups in South Sudan**						
Assess and evaluate the entry points for gender and social protection integration into AA work	National and Sub-national levels	Specific needs, barriers, and power dynamics in households analyzed and established in AA targeted locations	Number of genders studies conducted	Assessment reports/ surveys	MHADM	Ministry of Gender, Child and Social Welfare RRC Ministry of Youth and Sports
Prioritize capacity building and awareness to enhance the skill, knowledge, and resources of local organizations and community members, enabling their meaningful and effective participation		Strengthened local capacity and awareness on inclusive AA planning and delivery	Number of training sessions conducted on gender and AA	Training reports		

Activities	Targets	Output Indicators	Indicators	Means of Verification	Lead	Institution Other Actors
Enhance community engagement and participation to jointly design AA interventions, ensuring they are contextually relevant and community owned		AAPs that are sensitive to gender, people with special needs, power disparities and protection issues developed	Number of AAPs that reflect gender lenses and needs of other disadvantaged groups developed and validated	Anticipatory Action plans		Ministry of General Education and Instruction Ministry of Interior UN Agencies, INGOs, NGOs Youth groups
Conduct gender analysis in locations targeted for AA implementation		Specific needs, barriers, and power dynamics analyzed and incorporated into AA plans	Number of gender analyses conducted Number of AAPs that reflect gender lenses and protection concerns	Gender assessment reports Anticipatory AAPs		

Ministry of Humanitarian Affairs and
Disaster Management - South Sudan
Ministerial Complex, Airport Road, Juba