
Assessment on the Submissions of Drought: Policy, Implementation Frameworks and Tools

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ABSTRACT

The report provides an analytical review of the submissions on drought invited from country parties, international organizations, and other stakeholders as part of the Dec 23/ COP 14. The submissions deal with existing policy and institutional frameworks, challenges and opportunities, and reporting on available drought-related tools beyond the content of the online Drought toolbox¹. While more than 70 submissions were made, 64 submissions were considered for further analysis. Most of these submissions were from Africa. Besides, the expert members of the Intergovernmental Working Group (IWG) were invited to submit their views on the key challenges and to identify instruments for drought risk reduction. Each of the submissions was carefully reviewed and where possible/needed some categorization were made to highlight the overall responses.

The report highlights the diverse policy frameworks and institutional arrangements to implement drought management in different countries. Initiatives and programs from various international agencies that cover regional blocs were also reviewed. While in many countries, implementation of drought management is supported by legislative acts and administrative structures, in a few countries, however, it is carried out and/or supported by a high-level committee at the national level, through bilateral cooperation, and regional cooperation. The challenges highlighted by the parties relate to limited capacity (institutional and technical), inadequate funding, poor institutional coordination, inadequate awareness on drought, and external factors (such as demographic, conflict, migration) as key barriers and challenges among the countries. Opportunities exist in terms of political commitments, UNCCD Parties' increased emphasis on mitigating drought impacts for long term drought resilience and a management approach that prioritizes "prevention" over "recovery" and growing scientific evidence towards proactive and integrated drought management approaches. Further, the existing artificial intelligence and mobile technologies could be harnessed for their role in enhancing drought management. While most of the drought management tools were related to agriculture and meteorological assessments, there were submissions that highlighted interactive tools involving diverse stakeholders towards early warning and towards developing resilience from drought. The IWG expert members' views complements the analysis by highlighting issues to strengthen the early warning and monitoring, vulnerability and impact assessment, risk mitigation measures and few cross-cutting themes.

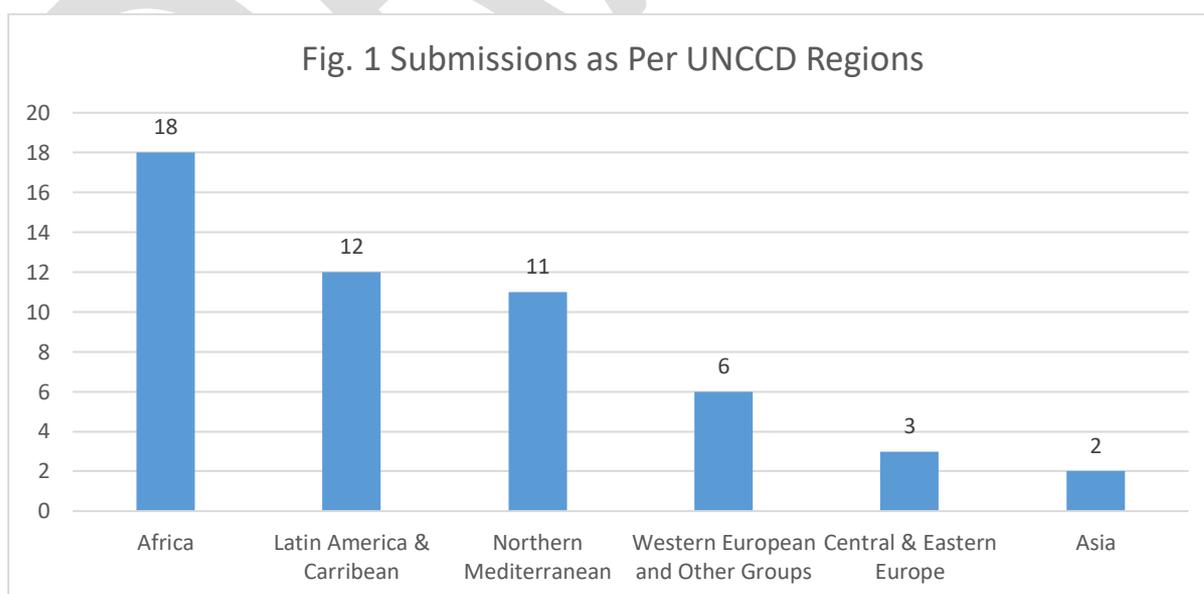
The report identifies issues/topics for the IWG to deliberate for developing appropriate policy, advocacy, and implementation measures at all levels for addressing drought under the Convention in the context of a wider, holistic, and integrated approach. The submissions also provide opportunities for in-depth exploration of topics for developing a wider, holistic, and integrated perspective for an effective policy.

¹ <https://knowledge.unccd.int/drought-toolbox>

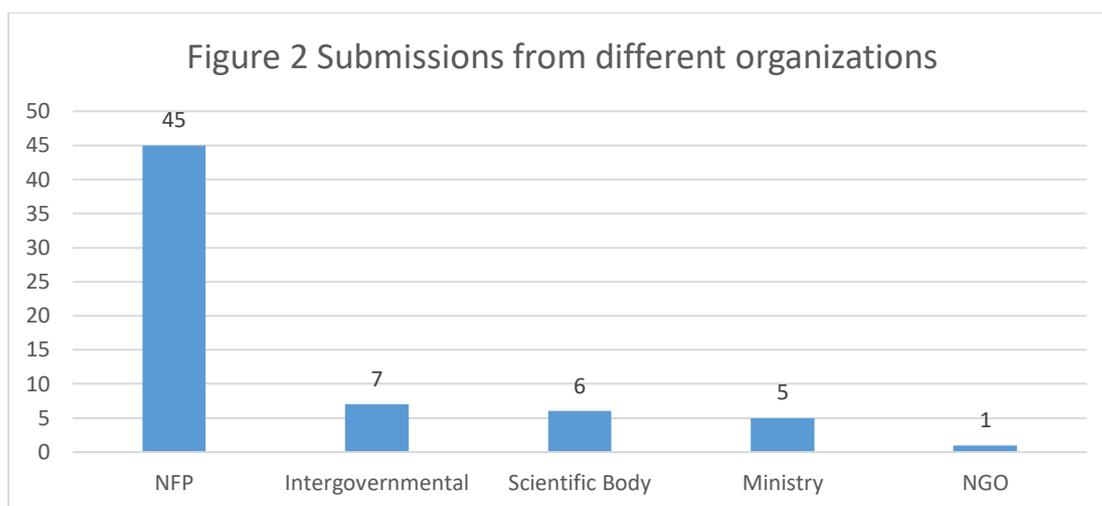
1. Introduction

The COP (Dec 23/COP 14, Para 11a) invited Parties, international organizations and stakeholders to make submissions on: (i) Policy, implementation and institutional coordination frameworks and implementation measures for addressing drought under the convention; and (ii) Barriers, challenges and opportunities in preparing for, responding to and recovering from drought. The same decision (Para 9) also requested the secretariat to compile an inventory of existing drought-related tools beyond the Drought Toolbox and make this information available to Parties.

This report provides an analytical review of the submissions. There were over 70 submissions. Each of the submissions was carefully reviewed and where possible/needed some categorization and analysis was made to highlight the overall responses. For purposes of analysis, submissions that were in a language other than English, were google translated. 64 submissions were considered for the analysis (Fig. 1). Most of these submissions were from Africa 28% (18/64), followed by Countries in Latin America and the Caribbean and Northern Mediterranean accounting for 19% (12/64) and 18% (11/64), respectively. Countries from Central and Eastern Europe accounted for 5% (3/64), 3% (2/64) of submissions from the Asian region, and 9% (6/64) from Western European and Other Group (WEOG) regions. In addition, there are submissions from international organizations, such as Food Agricultural Organization, WOCAT, CILSS, IDEAM and others, which accounted for about 18% (12/64). Few countries from 'Other' regions, such as Germany and Finland, submitted report on their bilateral cooperation on drought management in various countries. The questionnaire (Annex 1) and the list of submissions is enclosed in a separate document. In addition to these submissions, the UNCCD secretariat invited the Intergovernmental Working Group (IWG) members to submit their views on the key challenges and identify instruments for drought risk reduction.



Most of the submissions (Fig. 2) [about 70% (45/64)] were made by UNCCD National Focal Points (NFP). There were almost equal numbers from the scientific body (9.5% (6/64)), intergovernmental organizations (9.5% (7/64)), and ministries (8% (5/64)) from the countries. Other regional submissions include European Union, the United States for South American nations, Germany for the Danube River basin and from the development projects undertaken by Finland.



The report takes stock of the existing institutional environment (the drought policies and its implementation measures), the challenges and opportunities faced by the respective submissions, and tools for early warning and monitoring of drought. In addition to highlighting some of the key points raised from the submissions made by Parties and organizations, the report presents the feedback received from the expert members of the IWG on the key challenges and instruments as regards to drought preparedness.

2. Existing Policy and Implementation Frameworks

The section presents the institutional environment behind the drought risk reduction approaches among the countries and from international organizations. The institutional environment is composed of regulations, customs, and taken-for-granted norms prevalent in states, societies, professions, and organizations, which impacts and shapes the behavior of organizations towards drought risk reduction (Swaminathan & Wade, 2016). In this section, the focus is on the policy framework and measures being taken to reduce drought risks.

2.1. Policy Framework

Drought Policies guide decisions which enhance the communities and ecosystems' resilience to drought. Government policies are often led by the lead ministries in the respective countries. Drought policy can be a stand-alone policy or a subset of water management framework, agriculture management, climate change policies, and/or disaster risk management (Table 1). In addition to

government policies, there are attempts to facilitate drought risk reduction by international organizations and countries for a regional-level drought management either in a hydrological basin or among a bloc of countries.

Table 1. Diverse Drought Policies from Selected Submissions

Countries/ Regions	Stand-alone Drought Policies	Drought as a sub-set	Regional-level Policies
South Africa	National Drought Management Plan		
Argentina	Interinstitutional Drought Information Management Protocol		
Palestine	Drought Management Plan		
Paraguay	National Action Plan for Desertification and Drought Management (2018)		
Nicaragua		National Climate Change Policy (2007)	
Germany		Das Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (BBK), under Civil Protection & Disaster Assistance Act (ZSKG)	
India		Disaster Management Act (2005)	
Kenya		Common Program Framework for Ending Drought Emergencies (EDE) (2015)	
Danube River Basin			DriDanube Project
European Union			Disaster Risk Management
Intergovernmental Authority on Development (IGAD)			Sub-regional Action Plan (SRAP)

Stand-alone drought policy: This relates to attempts to manage drought as a stand-alone policy. South Africa, for example, treats drought as a separate policy area. The country has a comprehensive policy in place that includes guidelines for the line departments and other organizations (Box 1). It had formed inter-ministerial committees and task forces and has set up drought relief measures. Argentina has also Interinstitutional Drought Information Management Protocol which develops and reviews protocols for regular monitoring and

Box 1 Drought Management in South Africa

Through the Drought Initiative of the UNCCD, South Africa developed the National Drought Management Framework. This first edition plan serves as a guideline for line departments and other organizations to develop detailed sector-specific and geography-specific drought management plans. In South Africa, drought affects various sectors such as agriculture, water, biodiversity, health, and wildlife in different ways. A “fit for all” plan would not serve the purpose. The plan will assist with a comprehensive coordination of drought implementation measures.

An inter-ministerial committee task team is set up in 2016 (i) to coordinate drought interventions and make recommendations on interventions measures; (ii) to mobilize financial and human resources to deal with drought, and (iii) to update parliament of South Africa on drought activities across the country. The Inter-ministerial committee is supported with (i) the National Joint Drought Coordination Committee; (ii) Disaster Management Planning; (iii) Provincial Joint Drought Coordination Committee (PJDCC); (iii) The District Joint Drought Coordination Committee; (iv) The Early Warning Task Team, and (v) Institutional Coordination Committee.

reviewing drought in the country. The Palestinian Authority also underlined the priorities to “the foundation of institutional, legal, and legislative frameworks and the formulation of policies and strategies to improve water supply..... Within the framework, a drought management plan has been developed which can enhance Palestine’s preparedness and mitigation plans.” Chile has incorporated drought at two parliament commissions at the Senate and at the Chamber of Deputies. This is supported by appropriate legislation to declare drought-affected zones and supportive instruments to focus during drought emergencies. Eritrea has important policy proclamations and cross-sectoral environmental regulatory frameworks to address drought under the UNCCD convention. Paraguay has developed a National Action Plan for Desertification and Drought Management in 2018, which closely relates to several other policies at the national level. The Kenyan government has launched the Common Program Framework for Ending Drought Emergencies (EDE) in November 2015 which is aimed at ensuring stronger alignment and coordination of investment, and where possible harmonization of programming. It focuses on two key priorities; first is to strengthen the ‘foundations’ for development, especially security, infrastructure, human capital and sustainable livelihoods, which are particularly weak in drought-prone areas. The second is to strengthen the institutions and financing mechanisms which will ensure sustained and effective response. These include the National Drought Management Authority (NDMA), the National Drought Emergency Fund and the county governments.

It is to be noted that in the framework of a UNCCD Drought Initiative, the secretariat and the Global Mechanism are supporting the development and further strengthening of National Drought Plans (NDP). As of July 2020, 73 countries are participating in the initiative. Further information is available on: <https://www.unccd.int/actions/drought-initiative>.

Drought as a subset of other frameworks: A few submissions highlighted that drought was part of the water management framework, agriculture management, climate change policies, and/or disaster risk management. In Nicaragua, for example, drought is addressed as one component of the National Climate Change Policy. Drought risk in Germany was assessed in 2019 in the context of the national risk analysis. In 2009, the Federal Government legally anchored risk analysis in the Civil Protection and Disaster Assistance Act (ZSKG), drought is further being elaborated in the scope of the Sendai implementation (coordinated by the Sendai National Focal Point the Federal Office for Civil Protection and Disaster Relief – BBK²). Italy's approach to address drought are contained in the water resources protection and management tools and related rules, under the Water Framework Directive (WFD) of the EU. In India, it is the Disaster Management Act 2005 that is the primary law at the national level. The Act mandates for a National Disaster Management Plan (NDMP) at national level and that hazard-specific nodal ministries and departments prepare detailed disaster specific management plans. The Department of Agriculture, Cooperation & Farmers' Welfare (DACFW) is mandated as the nodal agency to formulate policies, plans and institutional mechanisms related to drought management in the country.

Regional-level drought management: Limited submissions highlighted a comprehensive attempt to guide drought management at regional level (either at river basin or among a bloc of countries in a region). Slovenia highlighted the drought strategy (DriDanube Project) among countries in Danube river basins. The framework supports institutional capacity building in terms of strengthened cooperation and support in decision-making process and practical steps to switch from reactive to proactive approaches. Intergovernmental Authority on Development (IGAD) had developed a Sub-regional Action Program (SRAP) to complement national efforts by providing roads for ending drought emergencies. Permanent Interstate Committee for Drought Control in the Sahel (CILSS), which was created in 1973 following recurrent droughts in the Sahel, offers strategic cooperation instruments to organize solidarity among partner countries to best manage desertification and respond to drought. The EU adopts a holistic approach to Disaster Risk Management, focused on disaster prevention and the reduction of risks to help EU Member States to develop and implement policies to better prevent, prepare for and respond to disasters.

The mainstream drought or drought-related policies were supported by financial and social policies among few submissions. These subsidiary policies facilitate and strengthens the mainstream policy for drought management.

2.1.1. Drought-related Financial Policies

² Das Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (BBK)

There are many subsidiary policies that are related to drought, which play a significant role in drought risk reduction, one of these relate to financial policies. Israel has the national tax authority (Ministry of Finance), for drought damage compensation (1964) through formation of Committee that offers drought compensation. Senegal has launched a National Strategic Investment Framework for Sustainable Land Management with the aim to promote the principles of sustainable development in the management of land resources (Box. 2). The Kenyan government has established and is now in the process of operationalizing the National Drought Emergency Fund (NDEF) which is a multi-donor fund to ensure rapid and timely response to drought before it evolves into emergency. It will support drought preparedness and response interventions. This will provide opportunity for effective and timely response. Sub-national levels are also establishing County Climate Change Funds (CCCF) that support resilience building, preparedness, and response. The EU has been supporting the GARI (the Global Alliance for Resilience Initiative) initiative for food and nutrition security and resilience, and to the strategic collaboration initially with the FAO, WFP, on the Global Network against food crises (GN). Both initiatives focused mostly on drought-prone areas. The EU is also collaborating with the African Risk Capacity, including for working with UNCCD on climate adaptation investments finance mechanisms (Extreme Climate Facility). The EU also pursues the InsuResilience Solutions Fund (ISF) to develop innovative and sustainable climate risk insurance products in developing and emerging countries on drought-related issues, water stress and climate change. Hungary has established an Agricultural Damage Mitigation Fund, which pays a contribution to small farmers suffering yield loss caused by drought.

Box. 2 Senegal: A National Strategic Investment Framework (2014)

Overall Objective

Its overall objective is to ensure synergy and efficiency in the interventions of all the actors to achieve lasting reversals of land degradation trends and strengthen food security and the resilience of populations.

Specific Objectives

SO1 : To establish environmentally conducive synergistic management of Sustainable Land Management (SLM) and the resilience of populations;

SO2 : To promote good SLM practices and population resilience on a large scale in order to reverse the process of land degradation in a sustainable way and strengthen food security in the country;

SO3 : To establish effective systems for acquiring knowledge on the state of land degradation and on ways and means to strengthen the resilience of communities;

SO4 : To reinforce the capacities of actors especially those at the base for the benefit of SLM and their resilience;

SO5 : To promote awareness, training and communication, good ownership of CNIS / SLM and the adoption of behaviors that bring change in the field of SLM and community resilience.

2.1.2. Drought-related Social Policies

India has developed an innovative employment guarantee scheme in 1972-73 following a major drought in the western state of Maharashtra. The state-based scheme is now widely implemented across the country under the name of Mahatma Gandhi National Rural

Employment Guarantee Scheme. The Scheme established under the Mahatma Gandhi Rural Employment Guarantee Act 2005 provides “for the enhancement of livelihood security of the households in rural areas of the country by providing at least one hundred days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work and for matters connected therewith or incidental thereto.” Largely implemented in the drought-prone regions in the country, the scheme offers social safety net through non-farm-based employment for seasonal agricultural laborers. Over the past decade, the scheme has increased the rural infrastructure, increased cultivable land and agricultural productivity, tightening of labor market and other multiplier effects on social development. The scheme offers insights to strengthen the public employment program (PEP) in Sub-Saharan Africa.

2.2. Institutional Arrangements for Implementation

Different countries and international organizations have developed diverse institutional arrangements to implement these policies. There are four different types of institutional arrangements that guide the implementation: (i) national plans and legislative measures; (ii) high-level political commitments at federal/national level that can take any shape or form; (iii) bilateral cooperation; and (iv) arrangements developed among countries through regional cooperation or situated in a hydrological region.

(i) Implementing through National Plans and legislative measures (which includes Strategy, legislative Acts or Presidential Decree): Angola has the national development plan (PDN) with the integration of the disaster risk reduction in all sectors. It established “the National Civil Protection System to facilitate inter-sectoral coordination and synergies on prevention, mitigation, preparedness, emergency response and recovery across sectors, and at different government levels”. Algeria through its Legislative Act No. 05-12 of August 4, 2005 highlights in article 56 of its master plan for management of water resources “the prevention and management of risks linked to exceptional natural phenomena, such as drought and floods”. In Greece, the General Secretariat for Natural Environment and Water / Directorate General of Water of the Hellenic Ministry of Environment & Energy has developed Drought/Water Scarcity Management Plans aligning with Water Framework Directive (WFD) criteria and objectives and are supplementary to River Basin Management Plans. Benin has created the National Civil Protection Agency (ANPC) by decree in 2012 to implement the government policy of prevention and integrated disaster management and coordinate all emergencies. South Africa developed frameworks on drought through the Drought Management Act (Act 57 of 2002). In India, the Drought Management Plan (2017) helps in delineating roles and responsibilities of different ministries/departments in the country for mitigation, preparedness and for relief measures in managing drought. Under this plan, a Crisis Management Group (CMG) is established which functions under the Chairmanship of the Central Drought Relief Commission with representatives of associated ministries and organizations, who meet on a regular basis to review and assess the drought situation and the progress of relief measures. This is supported at the State level with the Relief Commissioner monitoring the drought situation and regulating the financial assistance to the district. The District Collector implements all the decisions related to drought management through several line departments,

civil society, and field agencies. At the subdistrict level, the Panchayati Raj institutions (PRIs) implement the drought management programs. The Kenyan government enacted the National Drought Management Authority Act 2016 to establish the National Drought Management Authority (NDMA) with the mandate of coordinating the drought risk management and is the secretariat to various coordination structures both at national and devolved levels. Development of appropriate legislative framework has been emphasized by these submissions for an improved implementation of drought risk management.

(ii) Implementation Through Federal-Level Commitment: The Central African Republic has established a high-level political commitment with drought risk management committee chaired by the Prime Minister. Benin promotes institutional coordination through the National Civil Protection Agency (ANPC) created by a decree in 2012. In Ukraine, the Cabinet of Ministers by its Resolution of January 18, 2017 has established the coordination Council at different levels (federal, regional, and at local level) to Combat Land Degradation and Desertification. In United States of America, under the leadership of the President (Presidential Memorandum), the National Drought Resilience Partnership (NDRP) is tasked in 2016 to deliver on drought Federal Action Plan to promote drought resilience nationwide (Box. 3). Australia has drawn a National Drought Agreement (NDA), signed by the Federal, state and territory governments on 12 December 2018, which are being actively adapted to suit local and global context. The NDA prioritizes objectives and outcomes that enhance long-term preparedness, sustainability, resilience and risk management for farming businesses and communities in Australia. It acts as a coordination framework to facilitate the way federal, state and territory governments cooperate and collaborate on drought-related issues, and outlines responsibilities.

Box. 3 Drought Policy in United States of America

The National Drought Resilience Partnership is tasked by the US President to work collaboratively to deliver on an NDRP Federal Action Plan including six goals (below) and 27 associated actions to promote drought resilience nationwide. These goals reflect priorities identified by agencies, communities, and research. The actions are designed to complement state, regional, indigenous and local drought preparedness, planning and implementation policies on: (i) Data Collection and Integration, (ii) Communicating Drought Risk to Critical Infrastructure, (iii) Drought Planning and Capacity Building, (iv) Coordination of Drought Activity, (v) Market-based Approaches for Infrastructure and Efficiency, (vi) Innovative Water Use, Efficiency, and Technology. Key NDRP activities include: (i) Strengthening coordination of federal drought policies and programs in support of resilience efforts; (ii) Leveraging the work of existing federal investments such as the National Oceanic and Atmospheric Administration, US Department of Agriculture and the Bureau of Reclamation, to improve agricultural and energy water use efficiencies.

(iii) Implementation through Regional Cooperation: An information system for southern South America (SISSA for the Spanish acronym) is being developed by the six member countries of the Regional Climate Center for Southern South America (RCC-SSA) to improve the capacity of South American nations to manage drought-related risks pro-actively (Box. 4). The DriDanube Project in Europe through its “optimal drought management model” facilitates

Box. 4 SISSA: Coordination through Information Sharing

The Drought Information System for southern South America (formerly known as SADIS, hereafter, SISSA for the Spanish acronym) is being developed by the six member countries of the Regional Climate Center for Southern South America (RCC-SSA): Argentina, Bolivia, Brazil, Chile, Paraguay, Uruguay. In the spirit of regional and global collaboration embodied in the WMO’s Global Framework for Climate Services Regional Climate Centres, the countries and organizations involved in SISSA seek to join efforts to improve the capacity of South American nations to manage drought-related risks pro-actively. SISSA is a multi-national, multi-institutional organization with participation of policy-makers, resource managers and individual and corporate decision makers from the targeted sectors. The SISSA’s mission is to provide data, information and knowledge to support decisions and policy-making in sectors sensitive to drought: agricultural production, hydropower generation and waterway transportation. To date, SISSA has compiled a regional database of daily climate data for the six member countries including over 300 conventional weather stations. Protocols for quality control for the data have been implemented. SISSA is developing a probabilistic characterization of historical drought events in the region, including univariate and multivariate descriptions of various event metrics (intensity, magnitude, duration).

coordination and builds capacity of institutions to manage drought in all its phases in the countries in the Danube river basin. The European Union (EU) has adopted a Water Scarcity and Droughts (WS&D) Communication in 2007. The Commission identified seven policy options to address the WS&D challenges in the EU. These options relate to (i) pricing the water; (ii) Allocating water and water-related funding more efficiently; (iii) Improving drought risk management; (iv) Considering additional water supply infrastructures; (v) Fostering water efficient technologies and practices; (vi) Fostering the emergence of a water-saving culture in Europe; (vii) Improving knowledge and data collection. A review of these done in 2012 proposed to address this at a river basin management scale and the Drought Management Plans should be part of the River Basin Management Plans (RBMP) under the Water Framework Directives. It further highlighted the need to consider climate change adaptation in the context of drought management and water scarcity. About 32% of the EU Member States have adopted these measures in their RBMPs.

(iv) Implementation through bilateral cooperation: Few countries have initiated bilateral cooperation programs to promote drought management measures. Germany has bilateral programs with several developing countries to facilitate policies, implementation, and institutional coordination frameworks and into respective national sectoral strategies (Box. 5). A portfolio of analysis for 2014-2018 revealed that out of 186 projects in the fields of climate change and agriculture, 40 of them are related to drought with an order book amounting to EUR 244.5 million. In the international cooperation of the Finnish government, policy harmonization, institutional coordination and implementation measures of drought management are addressed by linking it with food security, close cooperation with agricultural sector, climate, and biodiversity conventions. EU’s support for drought-related projects and programs in developing countries are integrated into partner countries national development

plans and policies and are often aligned with actions across multiple sectors, including environment, climate change, disaster risk reduction, desertification/land management, agriculture, infrastructure, water, etc. Over the period 2014–2019, the EU has invested around € 1,43 billion in overall disaster risk management-related projects and additional € 2,41 billion in projects with combating DLDD as a significant or main objective.

Box. 5 Germany's Bilateral Program

Germany's drought-related projects and programmes in developing countries are integrated into the partner countries' policies, implementation and institutional coordination frameworks and into respective national sectoral strategies. In case of lacking frameworks in partner countries, Germany fosters such frameworks. A portfolio analysis for 2014–2018 revealed that out of 186 projects in the fields of climate change and agriculture 40 are directly related to drought with an order book amounting to EUR 244.5 million. This portfolio analysis does not include other drought-related sectors such as infrastructure, water, social security, decentralization, emergency and disaster relief projects or projects carried out through NGOs. Of the 40 identified projects, most pursue more than one implementation measure related to drought. 20 focus on soil protection measures including agronomic, vegetative, structural measures, and management measures improving the resilience of agro-ecosystems. Most of the drought-related projects address subnational planning, many address national politics, and a few focus on research. All except two projects include capacity development measures at local, regional, or national level or a combination thereof.

2.4. Frameworks from International Agencies

Few submissions reported developing policy framework addresses all the above categories. Intergovernmental Authority on Development (IGAD) is a body currently comprising eight countries (Djibouti, Eritrea, Ethiopia, Kenya, Somalia, the Sudan, South Sudan, and Uganda) in the Horn of Africa. IGAD has developed a Sub-regional Action Program (SRAP) to complement national efforts in the implementation of the UNCCD among the partner countries in IGAD region. The Strategy provides a roadmap for ending drought emergence in the IGAD region and is a landmark of historic proportions that forms a logical step in the positive events now unfolding in the region. In Niger, the Strategic Framework-SLM identifies the priority actions on which investments must be made in Sustainable Land Management (SLM). The strategic framework-SLM deepens and complements the planning efforts of the action plan for

Policy, implementation measures & coordination towards addressing drought

- *While policies are federally initiated, they are collaboratively developed to offer guidelines at the regional, national, and sub-national level.*
- *Implementation measures (such as legislative forums) are being taken increasingly by countries to address drought risk management.*
- *The primary policies are supported by subsidiary policies from other ministries/sectors which helps to comprehend the drought response and preparedness.*
- *Many submissions highlighted the policies at the national or federal level, how these policies are translated and contextualized at micro-level seems to be a challenge.*

the “3N” Initiative, particularly the fight against land degradation and food insecurity. The

strategic framework-SLM in Niger and its investment plan 2015 - 2029 are adopted by the Government by decree n ° 2014-726 / PRN / MESU / DD of November 26, 2014.

3. Challenges & Opportunities to Respond to and Recover from Drought

The submissions highlighted different challenges, and opportunities faced by the countries and international organizations in their preparedness, response, and recovery from drought. Broadly, these are grouped as capacity building, education & awareness, financing, and external factors (Table 2).

Table 2. Challenges and Opportunities from Selected Submissions

Countries /Regions	CHALLENGES				OPPORTUNITIES
	Capacity Building	Knowledge Awareness &	Inadequate Financing	External Factors	
Botswana	District-level structures				
Argentina	Ability to respond				
Eritrea	Least adaptive capacity to respond				
Benin	Insufficient fundamental infrastructure				
Botswana					Political commitment
Hungary/ Ethiopia/ Angola/ Israel	Poor long-term integrated strategies Inadequate capacity in the assessment & monitoring				Potential for monitoring livestock movement
CILSS/ IDEAM	Institutional capacity; complex administrative structures		Weak financing mechanisms		
Guyana		Drought disregarded due to its slow onset			
WOCAT		Limited knowledge & decision-making tools			
Greece/ Bolivia/ Dominican Republic/ Croatia/ EU		Inadequate inter-institutional coordination	Inadequate financing (Croatia)		Common Agriculture Policy 2021-2027 (in Greece); potential for improved coherence and synergies between EU nations
Columbia/ Morocco/ CILSS			Inadequate & weak mobilization of financing		Climate Action Plan (Columbia)

Guinea/ partner countries supported by Finland/				Demographic factors, socio-economic status	Opportunities to improve resilience of agriculture & food security
Nicaragua				Environmental migration & conflicts	
Senegal				Overcrowding of livestock	Strengthened decentralized system
IGAD	Lack of shared data & indicators			Conflicts over land tenure	

DRAFT

3.1. Capacity Building

Limited capacity to undertake assessment: Botswana’s “inadequate capacity of District structures to undertake assessments” is a major challenge for drought preparedness. The country is making efforts to build capacity of the district structures to make assessments. They are planning to include gender, climate change, resilience, and HIV/AIDS in the assessment process by training of district officers on assessment methodologies and tools. Argentina reported “lack of capacity to respond”. Eritrea has the “least adaptive capacities to address the adverse effects of climate change”. Benin has “insufficient fundamental infrastructure (age-old equipment) and skills to model climatic phenomena”. Hungary highlighted harmonization of data and organizations and development of general drought plan as a major challenge. Israel highlighted poor long-term drought forecasting capacity. Ethiopia highlighted “lack of capacity in the assessment and monitoring” of drought, and inadequate budget being a major barrier for developing long-term integrated strategies. Angola reported “lack of long-term integrated strategies” that could focus on improved productivity of land and the rehabilitation, conservation, and water resources. This is complicated with shortage of an effective meteorological station network to identify the magnitude, spatial extent, and potential impacts of drought. CILSS highlighted inadequate institutional capacities, policies, and programs across their coordinating countries (Box. 6). Senegal identifies lack of consideration in the implementation of drought management program in the allocated budgetary resources.

Box. 6 Barriers and Challenges for CILSS

At the institutional level, the insufficiency of institutional capacities, policies and frameworks for the normalization of systems in the countries and at regional level, has not allowed the adoption of effective practices in terms of sustainable fight against the effects of drought. Likewise, the implementation of sectoral approaches in this fight, instead of an integral and holistic approach, has greatly limited the success of the actions undertaken.

At the strategic level, the lack of synergy in the implementation of environmental programs and policies, the weak capacity of national actors to defend the interests of the sub-region during major international negotiations, are notable barriers to be raised.

Inadequate Institutional Capacity: Lack of inter-institutional articulation, no clear policy specific to the issue of drought and turning drought into a policy issue (Columbia-IDEAM). Finland government from the angle of international cooperation highlighted “Low resilience, inadequate policies, and weak communication” in drought vulnerable countries”. Inadequate development and enforcement of policy tools and reactive drought response (in EU Member states; lack of drought strategies and financial resources among partner countries in development cooperation projects for the government of Germany are also elaborated. Bosnia & Herzegovina raised the issue of (i) Complex administrative and political structure, (ii) Weak institutional communication and cooperation, (iii) Weak economic situation, (iv) Agriculture is not attractive for people, (v) Lack of financial resources for drought measures (preparation, responding and recovering from drought as the most important one. WOCAT highlighted

limited knowledge and decision support tools and processes hampers sustainable land management in the region.

3.2. Limited Awareness and Education

Limited awareness on drought: In Guyana, drought is often disregarded partly because of its slow onset nature and lack of structural impacts. This, in turn, resulted in an under-appreciation of drought and its far-reaching impacts. In India, problems associated with drought are considered as a management issue. They call for careful monitoring of the symptoms of drought and early warning are key to effective management of the drought. Hungary has a challenge in the “integration of the Operational Drought and Water Scarcity Management System into the Hungarian legislation”.

Inadequate institutional coordination: In Greece, though they have a drought plan “lack of central coordination among all stakeholders” is a major challenge. However, they opined that the Common Agricultural Policy 2021-2027 offers an opportunity for responding to drought, as it is strongly environment - oriented. In Bolivia, there is still “no effective inter-institutional coordination when facing drought.” Dominican Republic calls to “strengthen inter-institutional coordination around drought”. Croatia emphasized “Lack of cooperation between relevant national institutions; no clear inter-institutional scheme of data, responsibility and communication flow; existing crisis-oriented drought policies support the adoption of reactive drought response that mainly deals with the treatment of drought impacts”. Inter-institutional coordination was highlighted as one of the barriers for the EU in their members states.

3.3. Inadequate Financing

In Croatia, drought causes the highest economic losses among all-natural hazards, but as of yet no strategic document on drought (e.g. drought action plan) exists.. While Columbia mentioned the need for large investments for climate financing, Morocco emphasizes on “dedicated fund” for drought management. Weak mobilization of financial resources by countries and from donors have been a barrier for the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) to strengthen their drought response. Weak financial resource mobilization by actors has been one of the challenges in Senegal.

3.4. External Factors

Anthropogenic factors: Socio-economic (Guinea), population growth (in partner countries by Finland government), environmental migration and conflicts (Nicaragua) were identified as some of the factors hampering drought management. IGAD highlighted resource-based conflicts and economic crisis as factors contributing to the drought challenge. IGAD also underlined the lack of shared data and definition of specific indicators, decreasing spatial mobility, and conflicts over land tenure. High price of farm inputs, high transaction & opportunity cost (among Germany's development cooperation countries) are also mentioned.

Overcrowding of Livestock: Senegal reports overcrowding of livestock prevents the preservation of fodder and water reserves which could mitigate the effects of drought. The country is planning to revise cultivating techniques with unconventional plough and tillage equipments which could enhance organic matter content in the soil, thereby reducing erosion and increasing capacity of the soil to retain precipitation.

3.5. Opportunities

Dictated by increased severity and frequency of droughts, momentum on drought preparedness is picking up at all levels in most regions. The Government of Botswana has been proactive in its endeavor to manage drought. There is political commitment to ensure that drought related issues are treated with urgency and accordingly. Even though the country has been experiencing droughts more often than it used to be, and more cases of malnutrition, no drought related mortalities have been reported. Senegal has integrated the sustainable land management with the Payment of Ecosystem Services in 2019, which provides an opportunity to strengthen decentralized institutions, involve non-governmental organizations and enhance cooperation among sectoral agencies. Columbia reports that opportunities exist “through the Climate Action Plan which would be a very good start for national drought control strategy.” Finland government highlighted from their experience in other countries “opportunities to improve the resilience of the agricultural sector and food security, to improve the livelihoods of farmers and to involve marginalized people” in a society to participate in drought preparedness. In EU members states, there is great potential to improve coherence and synergies at national and international level. There is increased awareness and scientific evidence in the magnitude of droughts, great potential for better water demand management, and enhanced action for climate change adaptation. Germany emphasizes that UNCCD’s new emphasis on drought bears several opportunities, especially ensuring agenda coherence, avoidance of duplication and maximization of synergies by fostering inter-sectoral approaches, strategies and frameworks at national and international level.

Addressing Challenges and Opportunities

- *Identify the capacities to be strengthened from within and externally to enable the partner countries for drought preparedness & monitoring in their region.*
- *Facilitate external and internal mobilization of financial resources to support countries efforts in drought management.*
- *Strengthen political will and institutional coordination from within and externally to address drought effectively.*
- *Enhance information and management tools for drought preparedness, response and recovery.*
- *Generate awareness on the importance of drought management and drought resilience.*

4. Drought Management Tools

4.1. Drought Monitoring and Early Warning

Most of the submissions relating the ‘Drought Monitoring and Early Warning’ focused on early warning tools.

Meteorological and climatic-based tools: Algeria has National, Soil, Irrigation and Drainage Institute (INSID) for climate watch and early warning units - and National Bureau of Studies for Rural Development (BNEDER) for crop yield forecast. Bolivia is developing the Monitoring and Early Warning System of Meteorological, Hydrological and Agricultural Droughts (SMAT MHA). The tool will allow manipulating multiple and different specific indexes for each type of drought (determined using different meteorological, hydrological models, data from various sensors in situ, satellite data, etc.). Slovenia under its Water Act/ has taken measures to prepare “selection of indicators to declare different degrees of drought intensity (thresholds)” related to areas exposed to drought damage. It is considered a complementary measure to prevent deterioration. It foresees to define areas that are exposed to the adverse impacts of drought, to develop indicators and define thresholds, together with defining different types and levels of drought intensity/water shortage. FAO has developed several tools for drought monitoring and early warning, drought risk mitigation measures, vulnerability and risk assessment, and emergency response and relief measures. Senegal has instituted at the sub-regional level with the CILSS specialized data collection and processing in the fields of climatology, hydrology and hydrogeology in their Ecological Monitoring Center. These structures are an integral part of the national system. In addition to spatial information, these structures have put monitoring devices in the field. The EU has been supporting a range of projects for the development/strengthening of Multi-Hazard Early Warning Systems (MHEWS) and hydrometeorological services, particularly in African, Caribbean and Pacific countries, including by supporting sustainable business models and partnerships between National Meteorological and Hydrological Agencies and the private and academic sectors.

Stakeholder-based management tools: While many submissions highlighted tools for monitoring the climate and agricultural-related factors, few countries have developed tools to reach diverse stakeholders, in addition to climatic and agricultural factors. Argentina has the Information and Early Warning System (IEWS) to establish a Regional Monitoring System that helps to reduce climate vulnerability and desertification. The system communicates the warning at different administrative levels and among farmers and stakeholders exposed by climate variability and drought. Columbia has developed The Agroclimatic Technical Tables (MTA) to integrate actors from the agricultural sector at the local level to inform, especially the small producers, about the expected changes in the climate of its region; how these can affect your crops and what they can do to reduce the negative impacts. Australia has set up an online tool - The National Drought Map - through collaboration between the Australian Government, industry groups, and the research and development sector. It brings together a multitude of data covering the social, environmental, and industry landscapes to provide easy access to spatial information on drought conditions. The EU has developed a comprehensive drought-monitoring tools for the member states (Box. 7).

The EU has developed several drought-related tools for the member states and other international partners. These include Copernicus Emergency Management Service, EU Drought Observatory and Global Drought Observatory, among others. Germany has developed several drought-monitoring tools: (i) Geospatial technologies provide a great potential to inform decisions during every phase of the disaster management cycle. (ii) Data tools and portals on meteorological data (precipitation, temperature, fire risk). (iii) Earth observation (crop production monitoring, yield forecasts, yield estimates, assessment of crop damage and loss caused by drought or flood) is used for crop insurances within the RIICE³ project with the objective to reduce the vulnerability of smallholder farmers engaged in rice production in Asia and beyond. (iv) An open source and Application Programming Interface (API)-based ICT platform called Network for Information on Climate (Ex) Change (NICE+) was developed within the closed Climate Change Knowledge Network in Indian Agriculture (CCKN-IA) project and is further adapted and scaled-up by ProSoil India. The objective is to promote the dialogue between different stakeholders with the aim of establishing links between climate change and sustainable development in agriculture. (v) Transitional aid is an efficient German instrument, which links humanitarian aid and development cooperation.

Box. 7 Drought Monitoring & Early Warning Tools for European Member States

The EU has been supporting a range of projects for the development/ strengthening of Multi-Hazard Early Warning Systems (MHEWS) and hydrometeorological services, particularly in ACP countries, including by supporting sustainable business models and partnerships between National Meteorological and Hydrological Agencies and the private and academic sectors. Humanitarian aid in response to drought are also a major support provided by the EU. For instance, in the Horn of Africa alone, the EU has mobilized €330 million between 2017 and 2019 for drought response alone.

The Copernicus Emergency Management Service (Copernicus EMS) provides all actors involved in the management of natural disasters, man-made emergency situations, and humanitarian crises with timely and accurate geo-spatial information derived from satellite remote sensing and completed by available in situ or open data sources. The Copernicus EMS consists of two components: a mapping component; and an early warning component.

The European Drought Observatory (EDO) was developed by the European Commissions' Joint Research Centre (JRC) following the requirements set out by the EC Communication on "Addressing the challenge of water scarcity and droughts in the European Union" (2007). EDO is currently supporting the European Union Emergency Response Coordination Centre (ERCC) through drought-relevant information such as maps of indicators derived from different data sources (e.g., precipitation anomalies, satellite-based vegetation conditions, modelled soil moisture and low-flow anomalies). Different tools, like Graphs and Compare Layers, allow for displaying and analyzing the information while the Combined Drought Indicator (CDI) gives an overview of the situation across Europe.

4.2. Drought Vulnerability and Risk Mitigation Measures

This was reported by five submission (8% (5/59)), which provides some of the significant insights in the attempt to collect and reach out to various stakeholders in its vulnerability

³ Remote Sensing-based Information and Insurance for Crops in Emerging Economies

assessment. Vulnerability and risk mitigation measures closely relates to the monitoring and early warning measures. Few submissions highlighted few risk mitigations. Eritrea had developed risk mitigation action program. Among countries supported through bilateral cooperation from Germany (GIZ, 2020), highlighted diverse vulnerability and risk mitigation measures. For instance, in Mekong basin countries – Cambodia, Laos, Thailand, and Vietnam, through German development cooperation the countries have developed excel-based risk assessment tool, which includes Integrated Water Quality and Quantity Simulation Model (IQQM) and the Soil and Water Assessment Tool (SWAT) plus socio-economic conditions. Similarly, in Niger basin the countries carry out institutional mapping, stakeholder analysis and mapping. Similarly, in Namibia and Pan-African countries have development vulnerability analysis and assessment tool.

The Botswana Vulnerability Assessment Committee (BVAC) uses different data collection methods from various sectors for the annual assessment which are used by the districts to collect data. For the verification assessment, the team also has a tool specifically for this exercise, which also monitors the progress made in the implementation of relief measures. The tools are reviewed annually before carrying out the assessments so that they take into consideration any emerging issues. Sudan, in collaboration with University of Juba, is in process of establishing GIS and Remote sensing center for monitoring and assessing land degradation and provision of forecasting information to farmers in close cooperation with the department of meteorology.

US has developed an interactive tool designed to compile and display impact information from a variety of sources across the U.S. in near real-time. The Drought Impact Report (DIR) launched in 2005 collects, quantifies, and maps drought impacts for the United States and providing access to the reports through interactive search tools. In this interactive tool, the users can also submit their own drought impact reports. The tool has several reports, with each report being visually distinct. As of the end of 2019, the database contains nearly 100,000 reports. In addition, the U.S. Drought Monitor (USDM) has been produced jointly since 1999 by the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA). The weekly map depicts parts of the U.S. that are in drought. Several climatological/hydrological inputs are utilized using a convergence of evidence approach to determine the severity of drought for any given location using a historical, percentile-based approach. Finally, they have the National Drought Mitigation Center's Drought Risk Atlas (DRA) which is intended to provide a wide range of decision makers with historical drought information and a web-based tool to visualize and assess their risk to drought. The atlas contains over 4,200 stations with data up through 2017, including sites in Alaska and Hawaii along with over 400 Snowfall Telemetry (SNOTEL) upper elevation locations.

The German Development Cooperation has developed diverse risk mitigation measures among their partnering countries. These measures are in the realm of biophysical interventions, socio-political components, and human development components.

4.2.1 Biophysical interventions

The biophysical interventions are land-based that forms the backbone to improve soil coverage, to improve the overall standing biomass, biodiversity, and landscape productivity and to restore the functional agro-ecological systems.

One of the strategies for biophysical interventions has been sourcing additional water sources and management of existing water resources. In Ethiopia and Somalia water sources are enhanced through tapping the ground aquifers and through construction of small-scale water collection/storage structures, respectively. In the Mekong basin, Namibia and Zambia has planned various demand management measures through recycling and reusing existing water, upgrading and refurbishing water infrastructure, and through catchment planning and protection measures.

Towards protecting pastoral communities, investments are made in rehabilitation of pastureland (Ethiopia), and promoting water use efficiency in livestock management and fodder production. In addition, digital disease monitoring (Kenya) and installation of predator-proof kraals to help avoid human wildlife conflict.

4.2.2 Socio-political interventions

To facilitate the vulnerability and risk mitigation measures, the German Development Cooperation has been offering training programs, and community initiatives. Training programs have been offered to facilitate drought disaster resilience and sustainability initiatives in Pan-African countries, training of extension workers in Kenya, training in human-wildlife conflict mitigation measures in Namibia, and towards training smallholder farmers to agricultural water management. In terms of community initiatives, the bilateral cooperation facilitates community-based land use planning along with the village communities (in Kenya and Somalia), and in the preparation of catchment management plans (Zambia).

Addressing Drought Related Tools

- *Develop comprehensive tool by relying on existing information and technology to monitor and warn against the drought.*
- *Apply artificial intelligence or mobile technology be applied for developing vulnerability and drought risk assessment*
- *Importance to development contextually relevant drought risk mitigation measures for countries.*
- *The gap on vulnerability & risk assessment is clear with only 8% reporting to employ such a method. It is a gap that could be addressed.*

5. Expert Opinion from IWG Members

The Intergovernmental Working Group members were elicited with their expert opinion on the key challenges and important instruments facing drought resilience among people and the ecosystems at various levels (global, regional, and national levels). Ten members made their submissions (Annexure. 3), which has been described below following the three pillars of drought risk reduction – early warning and monitoring, vulnerability and impact assessment, risk mitigation measures, and few cross-cutting themes.

5.1 Early warning and monitoring

This aims to track, assess, and deliver relevant information concerning monitoring and forecasting the hydrometeorological trends that would enable for timely information for drought risk management.

Planning for proactive management: There are inadequate tools and data for proactive drought risk forecasting. There is systemic failure to learn from the previous droughts, which could offer insights for proactive engagement.

Data gaps: In many cases, complex and obscure data rarely reach the local population. A translation device that will allow for the complex, obscure data and information surrounding predictions, warnings, and impact on drought to reach the people who are most affected is important. These are groups of people who have very practical, sometimes mystical knowledge of their environment that is often actually grounded in science. However, too often the data and information surrounding the impacts and warnings may not be understood or even accessible to the most vulnerable groups. Careful attention to craft communication and modes of communication that is relatable, on-the-ground and relevant will help increase the adaptability of vulnerable groups.

The instruments that experts highlight is the:

- (i) Strengthen early warning systems: There is a need to prioritize and strengthen early warning systems at all levels by for example,
- (ii) establishment of global/regional drought Center. Such a center can facilitate regional cooperation for monitoring, early warning and implementing drought mitigation measures.
- (iii) Strengthening and decentralization of drought monitoring and early warning systems to facilitate local implementation

5.2 Vulnerability and Impact Assessment

- Reference was made to the inadequacy of tools, guidelines, and funding capacity to understand and prioritize impact assessment for the vulnerable communities. Evidence-based assessment will enhance the understanding of drought well in advance.

- Inadequate compensation package for drought affected communities, who are often vulnerable members of the society. For instance, vulnerability of pastoralists inhibits the ability of the systems to recover. Governments response to drought is providing relief measures in the form of fodder and stock feed which in turn enables pastoralists to retain unsustainable stocking levels. This perverse incentive can lead directly to maladaptation to the emerging climate realities.
- Unsustainable water management practice: Cultivating with conventional plough and tillage equipment leads to diminished organic content in and on soils resulting in solid erosion and inability to retain moisture thereby increasing run-off and flooding. It is important to development sustainable irrigation system affected by drought.

5.3 Risk Mitigation Measures

Inadequate Knowledge to Invest for Drought Resilience: The key challenge is to make the best investments possible from scarce available resources, which will require an informed view of available investment opportunities along with effective implementation.

Unequal access to water: Unequal access to water and use of market instruments to allocate water are problematic for inclusive rights-based drought management. Paying for water makes powerful and rich people, urban areas and companies remaining to use water (also in an unsustainable way), while poor and marginalized people like farmers and pastoralists and especially women and youth are losing out.

Investment for Drought Resilience: The optimal amount and timing of these investments will depend on a number of factors that are country- and context-specific. These determinants include: (i) the availability of appropriate tools and strategies to build drought resilience (linked to our knowledge of exposure, vulnerability, changing drought risk, and the relevant sciences); (ii) the capacity of individuals and institutions to implement these investments (linked to levels of human, social, financial and physical capital); and (iii) people's motivation and willingness to do so (linked in many cases to the economic returns from agriculture, forestry, energy production, environmental services and so on). According to the reports received, items (i) – (iii) vary widely across countries and regions, and there may not be sufficient understanding or agreement on optimal levels of investment. Of course, drought resilience is only one of several dimensions of drought risk management, where there will be competition for funds for such programs as drought response, drought recovery and others.

Responsible and inclusive water management: Water should be given room to be taken up by the ecosystem in a natural way, make sure that the land and soil conditions are optimum for water retention throughout the year. Access to these sources based on an inclusive decision-making process that protects human rights to (drinking) water and food, takes into consideration the interests and power relations between water users, inclusive spatial planning in drought-sensitive areas should prevent the establishment of large-scale water users, and particular attention to the ecosystem's processes of retaining and storing water.

Participatory and inclusive land use/ water use groups should be established and formalized. These multi-stakeholder groups should have the capacities to understand, translate and communicate the circumstances of the ecosystems and information that is provided by the national service providers of climatic/ weather/ drought information. Such multi-stakeholder mechanism should also be explicitly enshrined in law and regulation.

5.4 Cross Cutting Topics

Enhancing Knowledge Dialogue: Generating profound knowledge dialogue between traditional knowledge and expert knowledge on natural local dynamics and possible responses to drought events will enhance linking scientific knowledge with local action. Also, educating communities about the impact of drought and how to cope with drought is important. Bringing the topic of drought in formal education helps to bring awareness, improves capability in implementing drought plans, policies and actions. A special focus should be given to local authorities, to enhance their capacities to engage inclusively with local communities and especially with marginalized groups like women and youth.

Institutional Coordination: Intersectoral coordination is key, however in many countries, roles related to drought are in different Ministries (Environment, Agriculture and others). In some cases, there is no clarity on which organization is the provider of the official information on drought, there is a need to conciliate the data generated by different entities (monitoring, vulnerability etc). Institutional Cooperation or coordination at all levels are not yet sufficient. There is a strong need to bring stakeholders together. Based on submission report from the countries, it is demonstrated that those who have established coordinating bodies have the highest-level priority/charge and assigned commensurate measurable outcomes. This type of robust governance structure is a framework would ensure ensure accountability. In effect, it allows for simultaneous bottom-up (vulnerable community and ecosystem) and top-down (government to stakeholder) flows through science (data) to decision (policy) to implementation (targeted stakeholder). Supporting Coordination at all levels, is essential for a successful management and preparedness on drought. In many countries, drought cuts across various sector such as tourism, water, biodiversity and agriculture, but these sectors are not well coordinated in preparing for and responding to drought. Drought is complex and requires multiple indicators to measure its impact (synergies at all level is ineffective, not coordinated and mostly not implemented).

Reducing over-reliance on International Experts: Over-reliance on developed country experts and resources, which at times do not perfectly address country/local issues.

Market-based Instruments: More attention might be paid to the use of market-based instruments such as for water rights, water storage regimes and water-related land-use practices. These instruments could include various forms of markets, insurance, and social safety nets. In some cases, the scope of introduction of these instruments might cross sub-national or national frontiers, such as when flows of stored water or other productive inputs

(stored seed, livestock) can move advantageously and voluntarily between regions with different levels of meteorological, agricultural or socio-economic drought.

Ecosystem and Drought: Tailor-made, ecosystem specific instruments are important and decisions about these instruments must be taken at the appropriate governance level. Second, introducing species adapted to drought in agriculture and forestry.

Land use interventions (agricultural and pastoral systems, infrastructure, urban projects) that encourage, and mimic natural processes must be favored and supported, e.g. agroecological farming, permaculture, agroforestry, traditional transhumance systems or rotational grazing systems utilizing fenced camps etc.

5. Summary of the Report

The report provides a review of the submissions made by countries, international organizations and regional groups on (i) policy and implementation frameworks, (ii) the challenges and opportunities, and (iii) drought-related tools for addressing drought. This is complemented with expert views from the IWG members on the key challenges and instruments for drought risk reduction. Broadly these submissions highlight the following:

1. Different submissions highlighted policy frameworks at national or Federal level. However, only limited submissions highlighted subsidiary policies (financial, social and agricultural) to strengthen the drought risk, and more so, on how these policies are implemented at micro-level.
2. The frameworks implementation is guided through legislations and institutional structures. This offers opportunities for exploring in-detail the effectiveness of its operation in addressing drought.
3. The challenges highlighted inadequate financing, poor institutional coordination, lack of political will and lack of institutional capacity as barriers, while socio-cultural context, climate change, population growth, inadequate information, migration, and conflicts as challenges.
4. Opportunities are also highlighted by the existing political commitment, existence of conducive frameworks and prevalence of severe and frequent drought providing opportunities for addressing drought under the Convention in the countries.
5. The submission applies meteorological- and stakeholder-based tools for assessment, monitoring and drought-risk mitigation.
6. Few submissions have developed interactive tools for vulnerability assessment, wherein the stakeholders (including farmers) upload information which is visually designed and mapped for easy communication and action.
7. There are opportunities to apply artificial intelligence and mobility tools for assessment and developing contextually relevant measures for drought early warning.

8. Careful considerations in developing indicators and enhancing knowledge dialogue between expert and local knowledge that is relatable, on-the-ground and adaptable for vulnerable population.
9. Adopt responsible and inclusive water management program.
10. Develop globally institutional framework that provides a clear mandate, set clear goals and actions.

The submissions provide opportunities for in-depth exploration on topics for developing a wider, holistic, and integrated perspective for an effective policy and implementation towards addressing drought under the Convention.

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Annex: Questionnaire

Introduction:

In September 2019, at the 14th Conference of Parties (COP) of the UNCCD, Parties decided to establish an intergovernmental working group (IWG), on effective policy and implementation measures for addressing drought under the UNCCD.

With the aim to inform the IWG, the COP invited Parties, international organizations, and stakeholders to make submissions on: (a) Policy, implementation and institutional coordination frameworks and implementation measures for addressing drought under the Convention: and (b) Barriers, challenges, opportunities and implementation measures as regards to responding to, and recovering from drought. Further the COP requested the UNCCD secretariat to create an inventory of existing drought-related tools, with the aim to share this information with all Parties.

- See also: Decision [23/COP.14](#) (par. 9 and 14)

You are invited to share your submission in the form below. Relevant information will be included in a compilation providing an initial input for the work of the IWG. Information regarding available drought-related tools will be shared for use by all Parties.

The form consists of four parts:

1. Your personal information
2. Information on frameworks and measures
3. Barriers, challenges and opportunities
4. Available tools

You can submit your information in any of the six UN languages (Arabic, Chinese, English, French, Spanish or Russian). Please make sure to include a link to further documentation with every item submitted. Also please provide your full contact details. Submissions without full contact details will not be included in the final compilation.

You can fill out this form multiple times if you want to share more than one submission.

If you have any questions related to this survey, please contact

- Jeroen van Dalen (Associate Programme Officer, Knowledge Management) jdalen@unccd.int
- Daniel Tsegai (Programme Officer, Drought) dtsegai@unccd.int

Form fields and description (4 pages):

1/ Your information

Field a: Your name

Field b: Your organization

Field c: Your country (optional)
[dropdown of country names]

Field d: Your email

Field e: Your role:

- UNCCD National Focal Point
- International Organization
- Other

2/ Policy, implementation and institutional coordination frameworks and implementation measures for addressing drought under the Convention

Field a: Text field: short description of the framework or measure (optional, maximum 150 words)
[open text, 5 lines, maximum 150 words]

Field b: Does this framework or measure address mostly (optional, only one option possible)

- Policy
- Implementation
- Institutional coordination
- Implementation measures
- Other (specify)

Field c: (optional) Country or region where the framework or measure is applied
[open text, one line]

Field d: Link to source, website or further documentation (optional)
[hyperlink]

3/ Barriers, challenges, opportunities you experience in preparing for, responding to, and recovering from drought

Field a: Text field: short description of the barrier, challenge or opportunity (optional, maximum 150 words)
[open text, 5 lines, maximum 150 words]

Field b: Does this relate mostly to: (only one option possible)

- Drought preparedness
- Drought response
- Drought recovery
- Other (specify)

Field c: Link to source, website or further documentation
[hyperlink]

4/ Drought related tools available in your organization, country or region

Field a: Text field: short description of the tool (optional , maximum 150 words)
[open text, 5 lines, maximum 150 words]

Field b: Does this relate mostly to (only one option possible):

- Drought monitoring and early warning
- Vulnerability and risk assessment
- Drought risk mitigation measures
- Other (specify)

Field c: Link to source, website or further documentation
[optional , hyperlink]

Example of a 4-page form:

https://knowledge.unccd.int/webform/contribute_a_case_study/

NOT FOR PUBLICATION: Text from decision, included for internal reference only

9. *Requests* the secretariat to compile an inventory of existing drought-related tools beyond the Drought Toolbox and make this information available to Parties.

10. *Decides* to establish an intergovernmental working group, subject to the availability of resources, on effective policy and implementation measures for addressing drought under the United Nations Convention to Combat Desertification, with a view to presenting its findings and recommendations to Parties for their consideration at the fifteenth session of the Conference of the Parties;

13. *Invites* Parties, international organizations, and stakeholders to make submissions on:

(a) Policy, implementation and institutional coordination frameworks and implementation measures for addressing drought under the Convention: and

(b) Barriers, challenges, opportunities and implementation measures as well as preparing for, responding to, and recovering from drought.

14. Requests the intergovernmental working group to present its findings and recommendations to Parties for their consideration at the fifteenth session of the Conference of the Parties

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