



Food and Agriculture
Organization of the
United Nations



United Nations
Convention to Combat
Desertification

A multi-criteria assessment framework for **national drought planning**



A multi-criteria assessment framework for **national drought planning**

by

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2022

Required citation:

FAO and UNCCD. 2022. *A multi-criteria assessment framework for national drought planning*. Rome, FAO. <https://doi.org/10.4060/cc1276en>

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ISBN 978-92-5-136720-9

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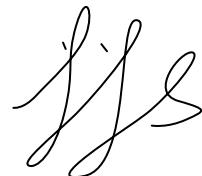
Foreword

The frequency and severity of droughts have been increasing at an unprecedented rate. The recognition of the need for a paradigm shift in drought management is neither new nor unknown. Integrated and proactive approaches in planning have recently come into sharper focus. Such approaches are essentially the made-to-measure mixes of management, financial, scientific, and technological measures that work towards drought risk mitigation. The assembly of the combined measures necessary depends on the environmental, socio-economic, and institutional context, and piecing together a coherent and effective plan requires advanced planning techniques.

The Drought Initiative, called by the Conference of the Parties (CoP) of the United Nations Convention to Combat Desertification (UNCCD), was launched in September 2017 with the aim to support the transition from reactive drought management to a proactive one. The Drought Initiative recognized that planning early is an essential condition of resilience. For that purpose, over 70 countries have been supported to develop and further refine their national drought plans. As a step further, reviewing the plans and showcasing the best practices are timely actions to enable their implementations.

This report draws on the overview of 31 national drought plans, validated and published under the Drought Initiative. It involves substantial knowledge resources that represent the latest advances of global policy and regulatory framework of drought risk management. With its explicit focus on the planning process of drought management, the report provides a fresh perspective on referenced planning mechanism. To this end, it introduces a rigorous assessment method to review national drought plans and sets up global benchmarks for drought planning.

The assessment is prepared by FAO with in collaboration with the UNCCD under the framework of the project “Enabling Activities for Implementing UNCCD COP Drought Decisions”, funded by the Global Environment Facility (GEF). The project is designed to support the operationalization of national drought plans according to the principles of integrated drought management.



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Acknowledgements

This knowledge product was produced within the framework of the “Enabling Activities for Implementing UNCCD COP Drought Decisions”, funded by the Global Environment Facility (GEF).

The product was prepared by Mohammed Ahmed Alkadir, Drought Policy Specialist, Land and Water Division (NSL), FAO; Eva Pek, Land and Water Officer, Land and Water Division (NSL), FAO; and Maher Salman, Senior Land and Water Officer, Land and Water Division (NSL), FAO.

Special thanks to Munazza Naqvi and Daniel Tsegai from the UNCCD for their valuable contribution during the review process of the report.

The authors gratefully acknowledge the support received from Lifeng Li, Director of Land and Water Division, and Sasha Koo-Oshima, Deputy Director of Land and Water Division.

Special thanks go to James Morgan, Land and Water Division (NSL) for the design of the report.

Abbreviations and acronyms

COP	Conference of Parties
FAO	Food and Agriculture Organization of the United Nations
GIS	Geographical Information System
IDRM	Integrated Drought Risk Management
NDP	National Drought Plan
SDGs	Sustainable Development Goals
SPI	Standardized Precipitation Index
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization



Setting the scene of the assessment

The Drought Initiative and planning process

Upon the request of the Conference of Parties (COP) at its thirteenth Meeting (COP13), the United Nations Convention to Combat Desertification (UNCCD) and appropriate institutions and bodies embarked on the implementation of the Drought Initiative. During 2018–2019, the Initiative focused on three actions: emphasizing drought preparedness in global agenda; supporting regional efforts to reduce drought vulnerability and risk; and developing a toolbox to boost the resilience of communities and ecosystems to drought. The Drought Initiative recognized the importance of early planning to achieve drought resilience. For this reason, the UNCCD rolled out its programme on supporting the development of comprehensive national drought plans (NDPs). The planning process aimed to enhance the countries' capacities by preparing well-targeted and tailored plans. To promote a long-term and sustainable approach that neutralizes the adverse impacts of drought events, the process promoted a paradigm shift from reactive and crisis-based management towards a proactive and risk-based one.



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The development of the NDPs involved over 40 countries in the first round, followed by another 30 countries in 2019. To create a globally consistent and all-encompassing planning mechanism, a generic model of national drought plan was prepared by the UNCCD Secretariat, building on the template for national plans, which was produced by the Integrated Drought Management Programme (IDMP) (WMO/GWP, 2014). The model guides the development of the plans for the participating countries. The model NDP produced by the UNCCD secretariat depicts an eight-step process together with a template and detailed guidelines on the formulation of the plans. The NDPs align well with the countries' priorities, policies, strategies, and plans, as well as with international commitments such as the Sustainable Development Goals (SDGs), United Nations Framework Convention on Climate Change (UNFCCC), UNCCD, and other binding and non-binding international agreements. Guiding principles were set out to ensure that the NDPs deliver better on the expectations. The principles include but are not limited to the followings:

- Broadly outlined structure to provide flexibility to future changes.
- Inclusive and equitable contribution to all regions, groups of the population, sectors, while reflecting on regional differences in drought characteristics, vulnerability, and impact.
- Strong adherence to the SDGs.
- Demonstrated cooperation amongst all stakeholders, including agencies, national authorities and institutions and communities.
- Proven political commitment, supported by suitably prepared and efficiently functioning institution and governance.
- Preparedness at all levels, from individuals, communities, to relevant authorities.

What makes drought planning and management difficult is its “multi” nature, involving multiple sectors, themes, time horizons, spatial extents and units, and stakeholders. How each aspect is factored into the plans without compromising the significance of others becomes of vital importance. The above mentioned guidelines of the planning process lend themselves to address drought in very different ways. There is no bottom line to define the necessary action plan for drought risk mitigation, but there are realistic expectations of the planning process. Furthermore, even rigorously conducted and well-founded plans should be subject to regular inspections and retrofitting. Firstly, because plans must evolve together with the rapidly changing environment, and the emerging needs and requirements. Furthermore, plans must be updated according to the latest global standards and internationally accepted directions. Finally, the planning process must take advantage of the independent peer reviews, which can reveal the less obvious but possibly more debilitating issues. In turn, the technical content and delivered messages of plans will rest on the solid foundation of a rigorous planning process. Based on this, the planning process can become the passe-partout for achieving high impact. This is recognized in the model NDP and the recommended template includes a sub-section titled “Future updates and revisions”.

This multi-criteria assessment is prepared in line with this assumption with the objective to support the future review processes of drought management planning. It is acknowledged that NDPs are highly context-specific, therefore, their technical outcomes are not comparable across countries. The assessment aims to build a reference for the planning process, which must be translated into an NDP on an individual basis.

2

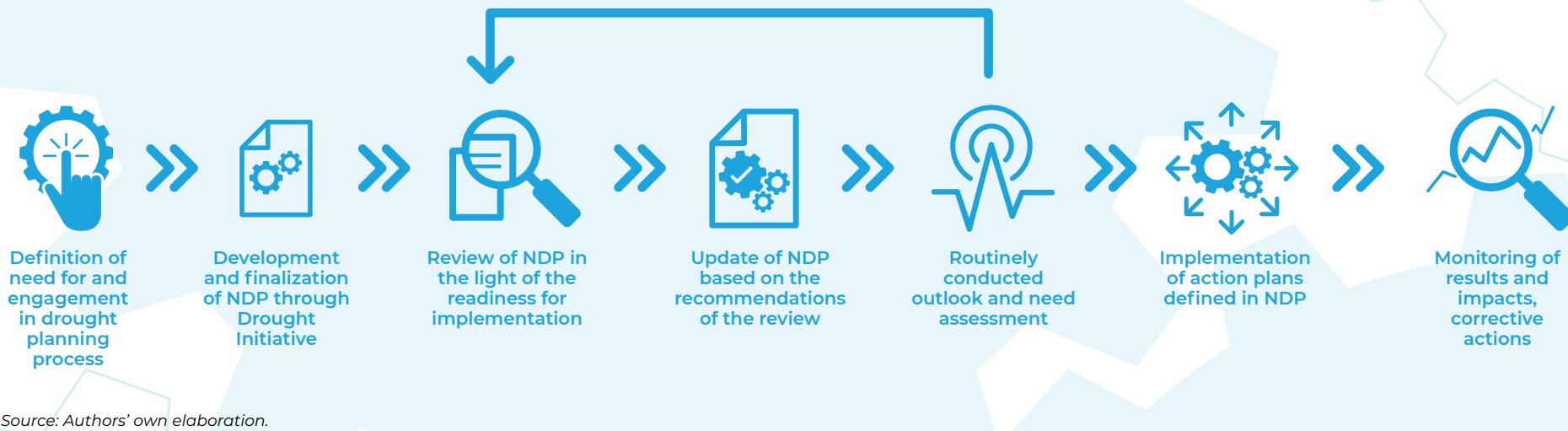
What to expect from the assessment?

The scope of the assessment

The multi-criteria assessment was stemming from the need to make the NDPs geared up for action. Enabling the implementation of the NDPs is fundamental for the transition from post-drought management to preparedness. Drought planning is somewhat different to other types of planning mechanisms. This is because drought does not occur every year, and action plans are not triggered frequently (Levine and Gray, 2017). The opportunity to post-assess the effectiveness of the plan and propose corrective measures is limited then. Regular ex-ante assessments and reviews are to overcome this particularity, so NDPs are sufficiently considerate by the time they reach ground. But to bear in mind: the objective is never to “make the plan”, but the incremental gains of regular revisions. This leaves an option to set-up an iterative process of NDPs reviews. The process starts from the engagement in a proactive planning and loops back to regular reviews.



FIGURE 1: ITERATIVE PROCESS OF THE REVIEWS

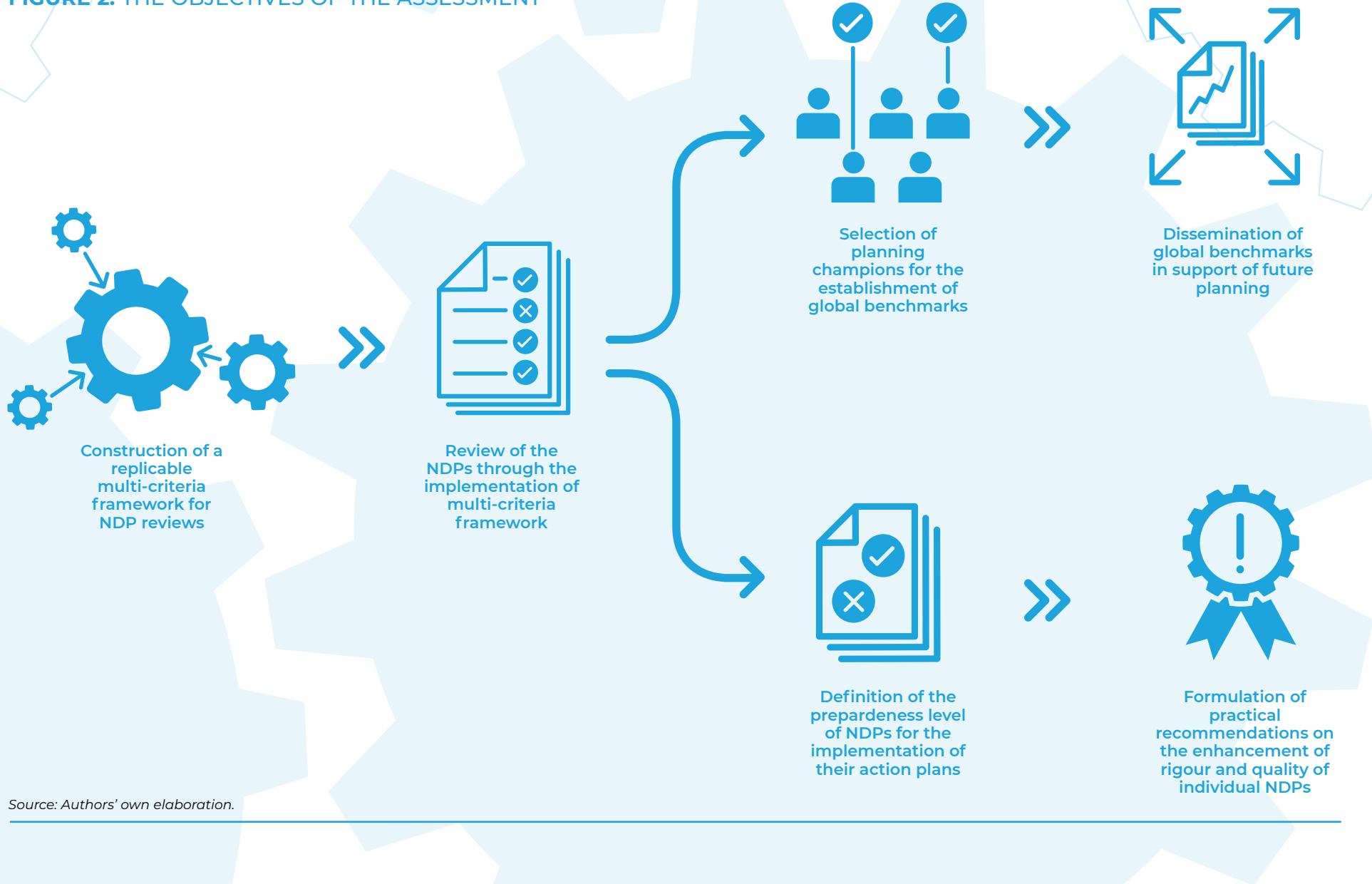


This assessment focuses on the phase of reviewing NDPs to understand the levels of readiness for implementation, and eventually results in a suite of recommendations for the enhancement of NDPs. The assessment does not touch upon the technical findings of the plans but aims to enhance the rigour quality of the NDPs. However, it is expected that the enhanced planning results will lead to a more elaborated definition of the action plans and their implementation modalities. To this end, the scope of the assessment is defined in 6 consecutive and interlinked objectives:

Within its scope, the assessment does not cover the following objectives:

- The review of resources used to complete the NDPs.
- The evaluation of the outcomes and findings of applied tools, methods and approaches in the NDPs.
- The appraisal of the feasibility and correctness of defined action plans in the NDPs.
- The ex-ante impact assessment of the NDP implementation.
- The recommendations on the monitoring and evaluation of the impacts of NDPs.

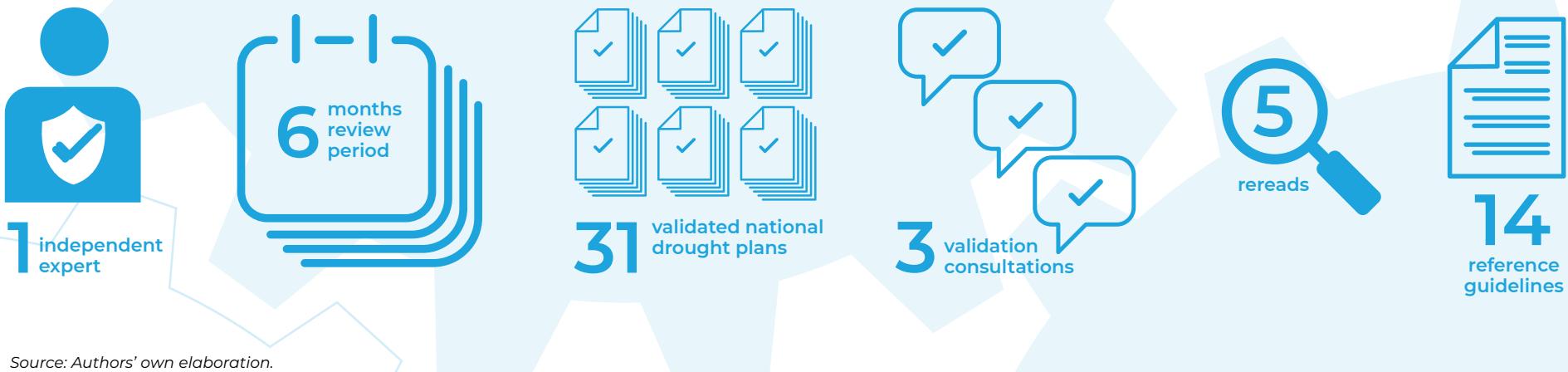
FIGURE 2: THE OBJECTIVES OF THE ASSESSMENT



Involved and required resources

The development of the framework and the implementation of the assessment are built on substantial resources. It involved both external (independent) and internal experts to conduct the work throughout a 6-months period.

FIGURE 3: THE INVOLVED RESOURCES OF THE ASSESSMENT



The assessment requires a prior knowledge of drought management, in particular that of the definitions of drought, the principles and pillars of integrated drought risk management (IDRM), the proactive drought management approach, and the 8-step process of drought planning. To gain enhanced understanding of these aspects, **Box 1** provides a non-exhaustive list of resources that can be explored.

BOX 1 | Recommended knowledge products

Drought Toolbox,

developed by UNCCD, FAO, Global Water Partnership, European Commission, National Drought Mitigation Center of University of Nebraska, UN Environment – DHI Centre, and World Meteorological Organization



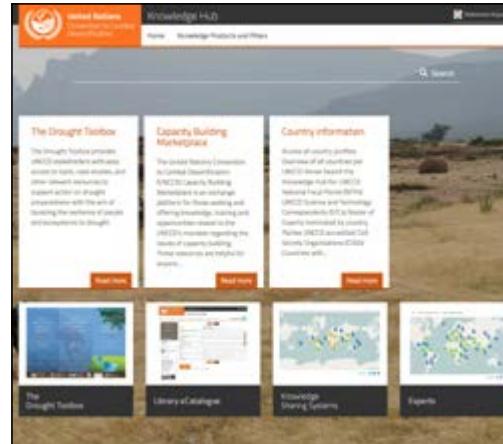
FAO's work on drought

developed by FAO

A screenshot of the FAO Land & Water page under the Drought section. The header includes the FAO logo and links for Overview, Land, Databases & Software, News, Events, Resources, and SOLAR 2021. The main content area is titled 'Drought' and features a photograph of people working in a dry field. To the left is a sidebar with categories like Water-Governance, Water-Management, Water-Quality, and Water-Power-and-Financing. The right side contains a list of publications, each with a thumbnail image and a brief description. Some titles include 'A rapid review of drought risk management resources', 'A rapid review of effective drought risk management and implementation and performance assessment approaches', 'Drought characteristics and management in the Caribbean', 'Drought risk Management - Toolkit', 'Assessing countries at risk from drought & Agriculture, Land and Water Concept Note', and 'Coping with water scarcity in arid, semi-arid and dry sub-humid regions'.

Knowledge Hub,

developed by UNCCD



Integrated Drought Management Programme

convened by World Meteorological Organization and Global Water Partnership

A screenshot of the Integrated Drought Management Programme website. The header includes the programme logo and links for Home, About, News, Events, Resources, and Contact. The main content area features a large image of a dry, cracked landscape. Below it are two sections: 'Drought and Water Scarcity' and 'Integrated Drought Management HelpDesk'. The HelpDesk section includes three buttons: 'Ask', 'Find', and 'Connect'. A detailed description of the programme's mission and objectives is provided at the bottom of the page.

Contribution to the implementation of national drought plans

The objectives of this assessment are aligned with the overall objective of the Drought Initiative:

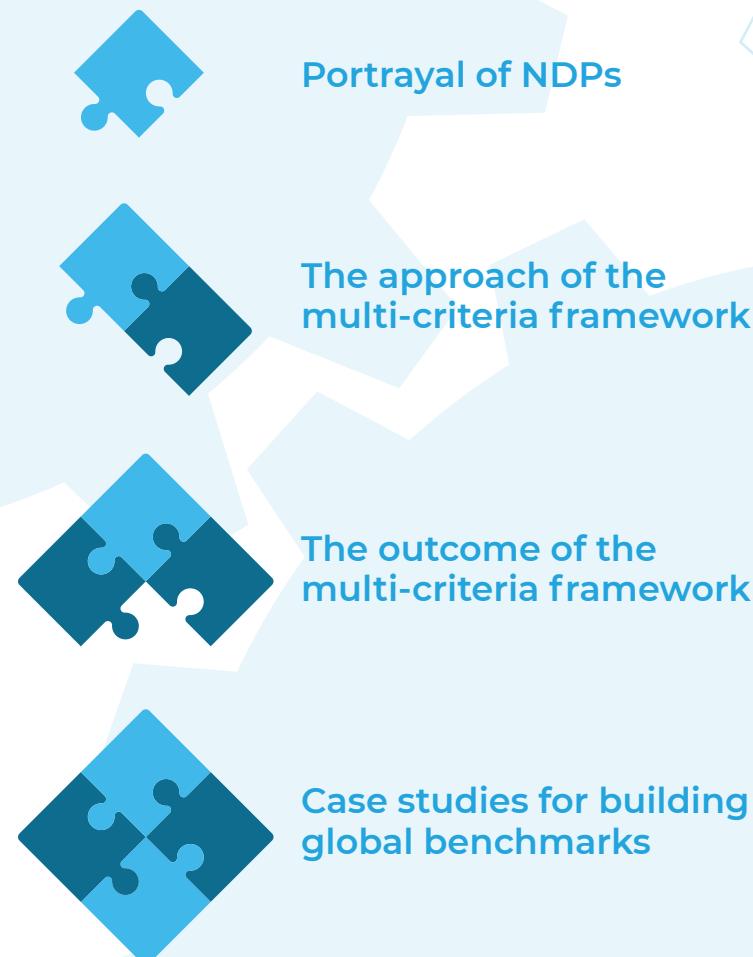
“to promote a paradigm shift in approach to the way drought is managed – from a reactive and crisis-based towards a proactive and risk-based one.”

The aim is to make the NDPs ready to be activated to reduce or neutralise the impacts of drought. To attain this goal, the assessment has the following contributions to the implementation of NDPs:

- Constructing a replicable multi-criteria framework for future reviews.
- Highlighting the unexploited potential of individual NDPs to enhance their effectiveness.
- Making recommendations on how individual NDPs can be improved towards the efficient implementation.
- Providing best practices (global benchmarks) on the planning process through the case studies of planning champions.

The enhancement of the plans together with showcasing best practices are expected to trigger a self-generating progress so that the implementation of NDPs can have a greater impact.

Figure 4: The roadmap of the assessment



Source: Authors' own elaboration.

The roadmap of the assessment

The assessment is phased into four sections:

Portrayal of NDPs: The assessment starts off with a limited situation analysis to provide an overview of the NDP landscape. It answers the following questions:

- What is the status of the planning process within the Drought Initiative?
- What are the key messages of the NDPs?
- What is the geographical pattern of the involved NDPs?

The approach of the multi-criteria framework: In the next step, a multi-criteria framework is crafted to provide the basis for the review of the NDPs. It involves the presentation of the reference documents to gauge the rigour of the country-specific planning process. The weighted multi-criteria framework is annotated to explain how the assessment is conducted. It answers the following questions:

- Which documents are selected for reference purposes?
- What are the reference documents about?
- What is the significance of these documents in good planning practices?
- How are these reference documents used to support the assessment?
- What are the criteria to be used for the assessment of NDPs?

- How can the criteria be weighted to support the structural balance and put sufficient emphasis on the different aspects of the NDPs?

The outcome of the multi-criteria framework: Subsequently, the implemented multi-criteria framework leads to the definition of the preparedness level of NDPs and the summary of practical recommendations to enhance the plans. To pave the way for a case study approach, the rationale for the selection of countries as global benchmarks is added. It answers the following questions:

- What do the results of implemented assessments tell about the overall preparedness level of the NDPs?
- What are the general observations to enhance rigour and quality of the set of NDPs?
- Who are the planning champions?
- What are the criteria to select case studies?
- What are the next steps to set up global benchmarks of the planning process?

Case studies for building global benchmarks: The assessment results in good practices on planning and showcasing some NDPs to support countries with successful exemplary planning techniques. It answers the following questions:

- What are the key strengths and limitations of the selected case studies?
- What are the further steps to make the NDP ready for action?

Alternative purposes

This document is constructed in a way that its chapters can be used alone or in combination. Beyond the overall objective, the following alternative purposes are served:

- The portray of the NDPs is a screenshot of real-time status of the submissions to the Drought Initiative. At its core, it investigates the synthesis of the messages delivered by the plans that help understand the commonly perceived challenges.
- The approach of the multi-criteria framework is described and explained to the extent that such framework can be used for further assessments. More and more countries feel the need to prepare or update their national plans to improve preparedness. What should be considered is thoroughly detailed in the chapter, so countries can make a stocktaking of the listed criteria before embarking on the work.

■ The outcome of the multi-criteria framework carries the lessons learnt. The general observations and takeaways support the enhancement of the national plans, at both preparation and upgrade phases. Pitfalls to be avoided are clearly depicted, so future plans are not required to undergo reviews beyond the routine process.

■ The case studies are presented through the demonstration of the development process. This shows not only the outcomes, but also the actions taken to bring the plans up to the required level.

Readers are expected to use this assessment as a supplementary material to the existing knowledge resources. The assessment is the first issue of a volume that aims to provide support to the implementation of the action plans of NDPs. It serves as a knowledge product for improved understanding of drought management planning through the integration of the recommendations and the reproduction of the presented approach. It supports the process of peer-to-peer learning within the Community-of-Practice on drought management.

3

Portrayal of National Drought Plans

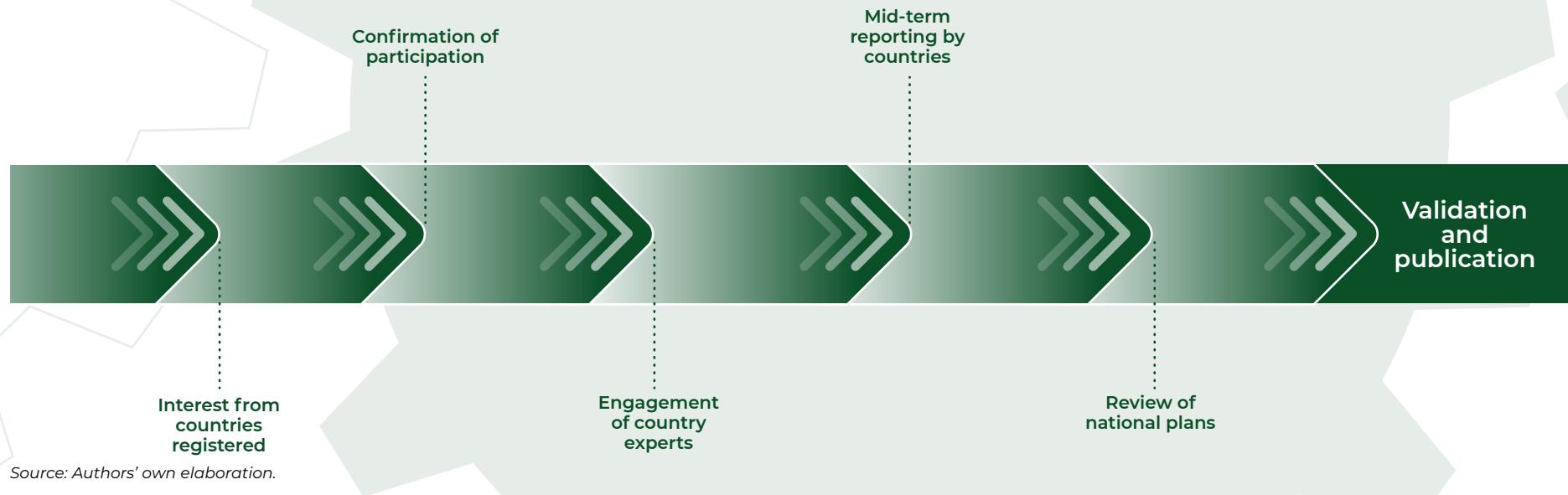
Participation under the microscope

The Drought Initiative was initiated in 2018. The selection of participating countries was based on three criteria (UNCCD, 2022):

- Existence of an effective data acquisition system that provides data on climate, water and soil parameters. Requirement on data availability also involved the definition of socioeconomic and hydrological indicators to support the analysis of the magnitude, the spatial extent, and potential impacts of droughts.
- Demonstrated commitment at country level, including the engagement of national experts to support the data collection and facilitate the stakeholder consultations.
- Strong political commitment to promote the adoption, dissemination, and the effective use of the formulated NDP.



FIGURE 5: STEPS OF THE DROUGHT PLANNING



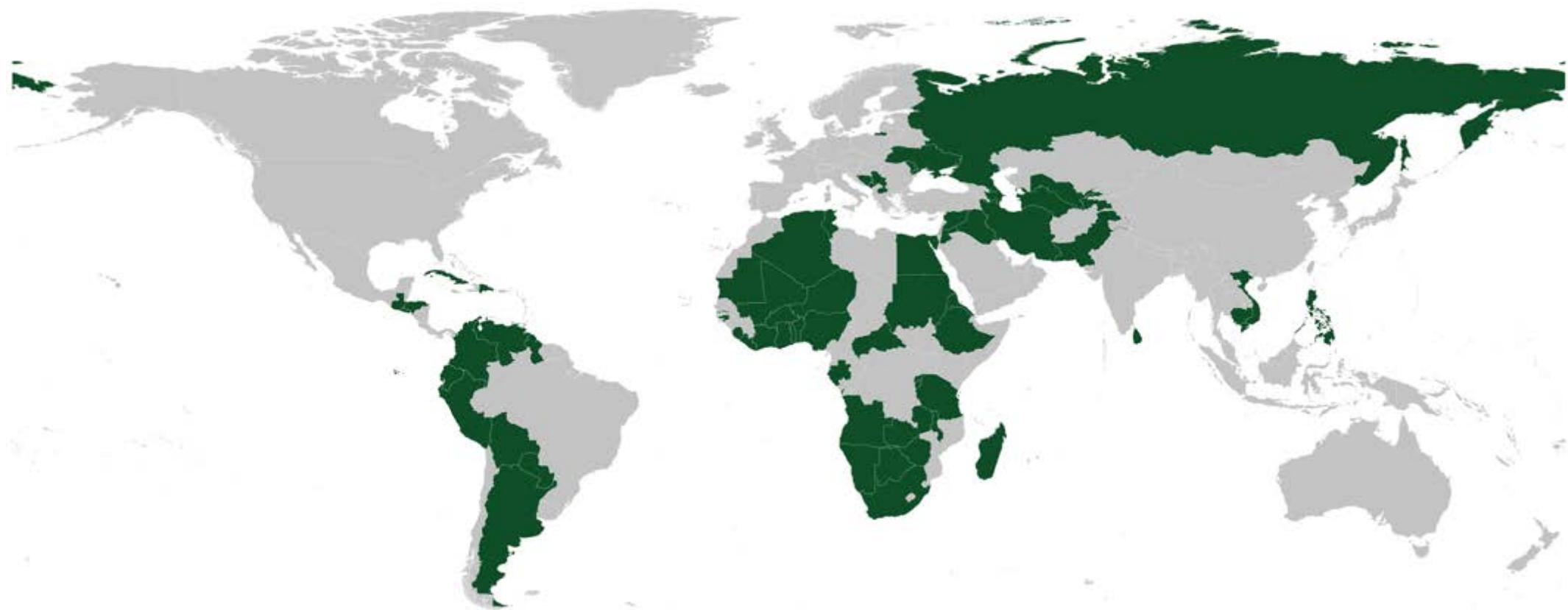
The call for application received 44 requests for participation in the first round, and 27 in the second round.

From over 70 participating countries, 31 validated NDPs are published and provide valuable information on the results of the planning process. However, the unpublished NDPs are also ready for implementation, and participating countries are virtually equipped to operationalize their plans.

Delivered messages

Some persistent issues are flagged in the submitted NDPs (Tsegai, 2019). Their common occurrence suggests that knowledge sharing at global level is a powerful tool for showcasing proven solutions. The similarity can benefit the countries encountering the same problem if pathways of knowledge transfer are established and operated. As a direct consequence, the transition timeline of proactive drought management can be shortcut. These common issues are grouped together into three thematic windows: drought management approaches, drought impacts, challenges of policy implementation.

FIGURE 6: MAP OF THE PARTICIPATION IN THE DROUGHT INITIATIVE AS OF EARLY 2021

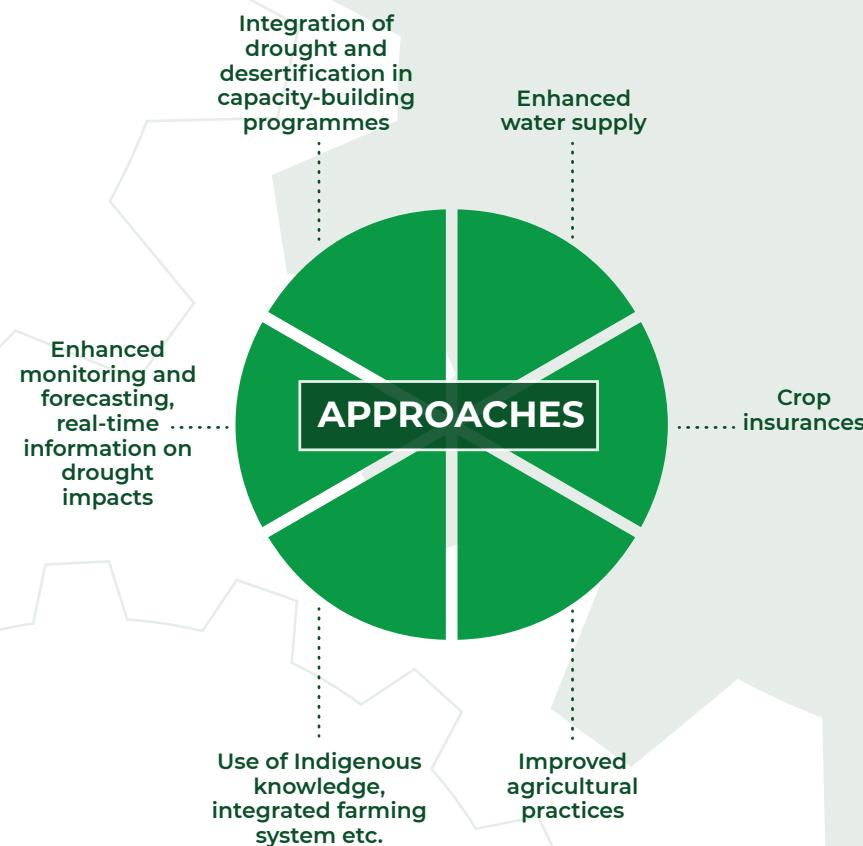


Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Source: The World Bank Group modified with data from this study, 2022.

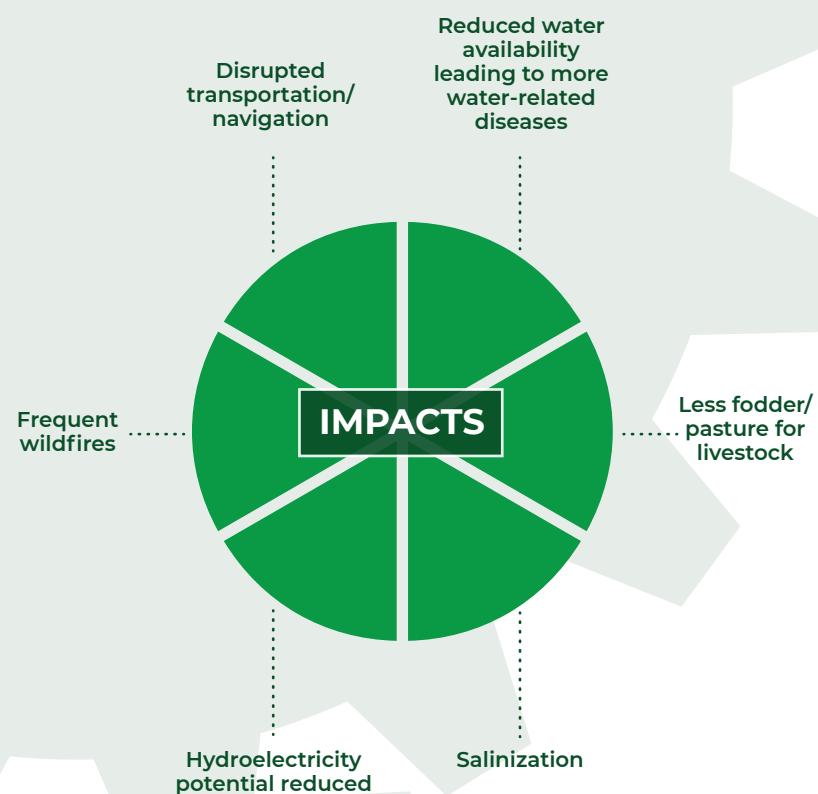
Final boundary between the Sudan and South Sudan has not yet been determined.

FIGURE 7: APPROACHES OF DROUGHT RISK MITIGATION



Source: Authors (based on Tsegai, 2019).

FIGURE 8: MOST FREQUENT IMPACTS OF DROUGHT



Source: Authors (based on Tsegai, 2019).

FIGURE 9: MOST FREQUENT CHALLENGES OF POLICY IMPLEMENTATION



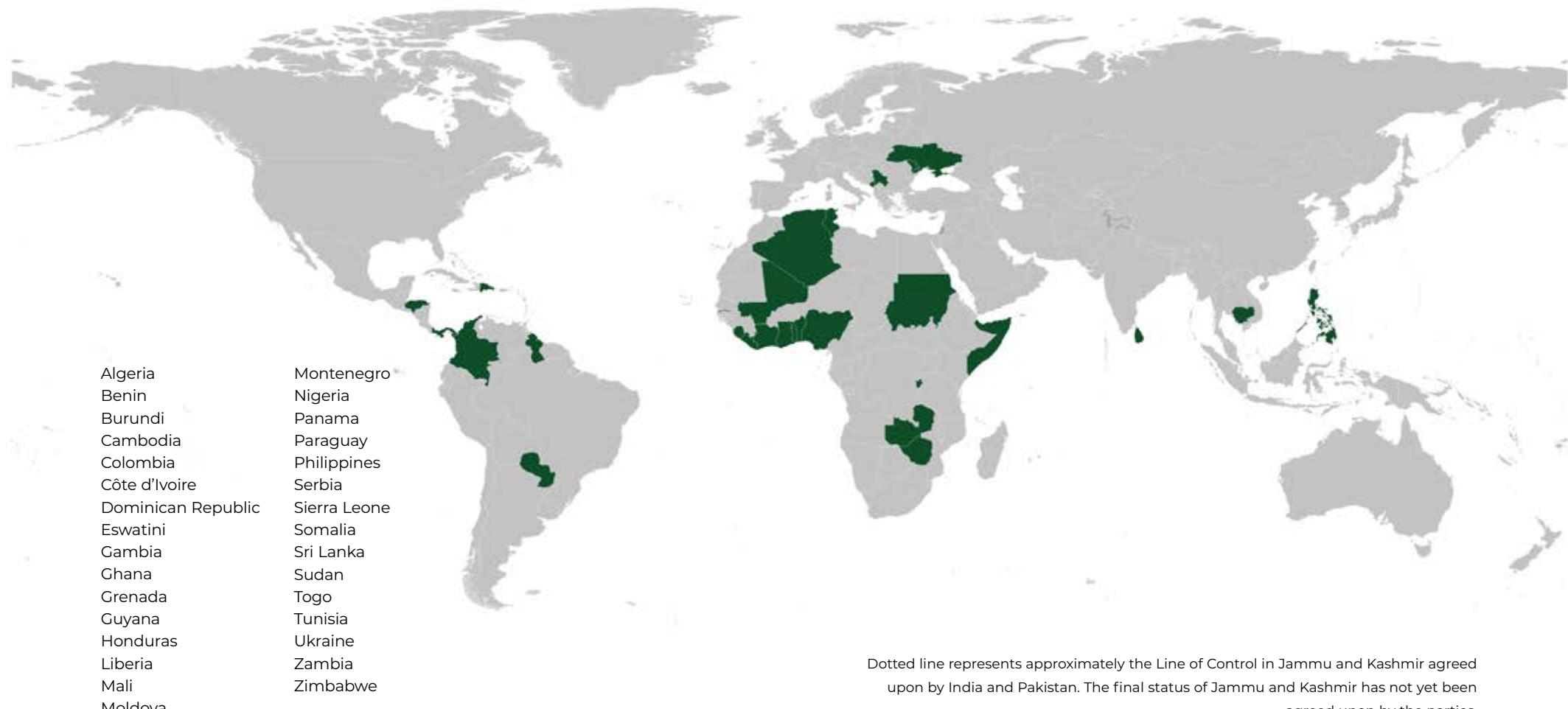
Geographical distribution

While the geographical representation of the participation in the Drought Initiative is balanced, the published plans are less evenly distributed amongst regions. The majority of the published NDPs are from Africa and Latin America and the Caribbean, with only a handful of cases in Asia and Europe. The pool of validated and published NDPs cover four regions of the UNCCD Annexes, namely Africa, Asia, Latin America and the Caribbean and Central and Eastern Europe.

Building on the classification of the UNCCD Annexes, further sub-regions are defined within the regions to leverage the geographical similarities in areas where ample number of published NDPs are available:

- Africa: (1) Sub-Saharan Africa, and (2) North Africa.
- Asia: (3) Asia and the Pacific.
- Latin America and the Caribbean: (4) Central America and the Caribbean, (5) South America.
- Central and Eastern Europe: (6) Central and Eastern Europe.

FIGURE 10: MAP OF THE VALIDATED AND PUBLISHED PLANS AS OF EARLY 2021



Source: The World Bank Group modified with data from this study, 2022.

Final boundary between the Sudan and South Sudan has not yet been determined.

4

The assessment framework

Reference guidelines

The adverse impact of drought in terms of social, economic, environmental, stability and overall development is mostly understood by all. Such adverse impact is also widely researched by the academia, international community, and mandated agencies such as the UNCCD, FAO, WMO, and other partners. To address the challenge, significant efforts have been made since the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of Action, adopted in 1994 (World Conference on Natural Disaster Reduction, 1994). The international community has been working on the design of drought related policy frameworks, guidelines, knowledge hubs, websites and tools, models; and on the implementation of programs and projects on the ground. Such comprehensive and long-time efforts have laid the foundation for advanced knowledge resources to support national planning processes and their implementation in the framework of the IDRM. This assessment leverages the rich pool of documented knowledge resources.



The assessment approach is built on reference guidelines, from which guiding principles and requirements of drought planning were extracted and collated. The selected documents are flagship publications in the field of IDRM. Using reference guidelines is the main instrument to keep the criteria framework objective and grounded in an internationally endorsed standard. There are several reasons why these guidelines are used in conjunction with the model NDP:

- Building on several resources provides complementarity and an integrated overview of the reasonably achievable content of the NDPs.
- Putting sufficient emphasis on the different aspects of NDPs requires the involvement of targeted guiding documents.
- Responding to the rapidly changing policy environment and the evolving challenges can be addressed only if NDPs are drawn from as many resources as possible.

The model NDP is positioned at the heart of the assessment. Thirteen additional reference guidelines are used to complement it:

- Drought Resilience, Adaptation and Management Policy Framework
- Drought Resilience, Adaptation and Management Policy: Supporting Technical Guidelines
- Strategic Framework for Drought Risk Management and Enhancing Resilience in Africa

- Gender Guide of the UNCCD
- National Drought Management Policy Guidelines: A Template for Action
- Hyogo Framework for Action
- Sendai Framework for Disaster Risk Reduction.
- Framework for the Assessment of Benefits of Action/Cost of Inaction (BACI) for Drought Preparedness
- Drought Risk Reduction Framework and Practices: Contributing to the Implementation of the Hyogo Framework for Action
- The Sphere Handbook
- Integrated Drought Management Program: website and toolboxes
- Handbook of Drought Indicators and Indices
- Drought Impact and Vulnerability Assessment: A rapid review of practices and policy recommendations

Overview of guidelines

Understanding the objective and the relevance of the reference guidelines is fundamental for building up the assessment approach. The more incomplete information that can be laid bare, the better. **Box 2** to **15** provide a quick insight into the syntheses of the reference guidelines. They portrait modified and unmodified citations of the guidelines along with short explanations and alignment with the multi-criteria framework.

BOX 2 | The model NDP

The model NDP provides instructions for the national plans. The model NDP was formulated based on a 10-step process, originally developed by University of Nebraska (Wilhite et al., 2000).

FIGURE 11: 10-STEP PROCESS OF DROUGHT MANAGEMENT PLANNING



Source: Wilhite et al., 2000.

The 10-step process was slightly modified to match the requirements only of the planning phase. The final 8-step process was included in the model NDP. The key elements of a national drought plan span through the pillars of IDRM: early warning and prediction, vulnerability mapping, preparedness and mitigation, response, and communications. As per the model NDP, the national plans should outline the following:

BOX 2 (continued)

- What the country needs to do to assess and minimize the adverse effects before, during and after the drought?
- How the country monitors which populations are affected and communicates with the stakeholders about the expected or ongoing drought?
- What the country needs to do after drought to reduce future impacts, including the review of actions before and during drought, as well as the effectiveness of the drought plan?

FIGURE 12: RECOMMENDED TABLE OF CONTENT OF THE PLANS



Source: UNCCD, 2018.

BOX 2 (continued)

Relevance to the assessment:

This reference serves as a model to guide governments, practitioners, and national experts throughout the process of developing their national drought plans. The step-by-step process and the table of content presented in the document is used as a reference by countries. Therefore, all the criteria used in the assessment of the NDPs are generated from the structure of the model NDP. This helps to ensure consistency and comparability among the NDPs considering the varying contexts of countries. Therefore, all the topics listed in the structure of the Model NDP is fully reflected in the multi-criteria framework.

BOX 3 | The drought resilience, adaptation and management policy framework

The Drought Resilience, Adaptation and Management Policy Framework takes an integrated, multi-pronged approach to reducing risks and impacts of drought (Crossman, 2018). Organized around six cross-cutting goals, the Framework identifies pragmatic actions for countries to better prepare and respond to drought. It guides the design and implementation of drought policy at national to sub-national level.

The objectives of the Framework are mapped into the three key pillars of drought risk reduction to demonstrate the links between the framework and the pillars. The Framework extends the pillars by presenting specific and practical actions available for nations to reduce risk of not only drought but also the declining stock of natural capital within land and water systems. By taking an integrated approach, a drought management policy that applies the Framework actions will increase social and ecological resilience to insecurity concerning food, energy, and water, and it will protect biodiversity. The Framework, therefore, aligns with international and multi-lateral agreements, as well as the Rio conventions.

Relevance to the assessment:

Part 4 of this reference presents the actions that reduce exposure and vulnerability and increase resilience and transformations. It describes how to prepare for, respond to and recover from drought. It guides the process of transferring and sharing drought risks, which are also linked to mitigation and response actions. Therefore, the recommendations and implementation actions are used during the evaluation of the main criteria related to response actions and required interventions at different stages of drought events.

BOX 4 | The drought resilience, adaptation and management policy: Supporting technical guidelines

These technical guidelines review and present technical information for implementing the three key pillars of drought risk reduction policy and management plans (UNCCD, 2019). In addition, they provide support for the 10-step process of drought management planning and implementation. To ensure that the technical guidelines contain the latest advances in science and policy, a large body of scientific literature and the key drought policy documents were consulted. In its first chapter, the document provides an inventory of the key indicators used to monitor and forecast drought onset, duration, severity, and impacts. It outlines the basis of drought forecasting, monitoring, early warning, and communication of drought warnings. In the second chapter, it outlines the vulnerability assessment approaches. In the third chapter, it provides technical recommendations and examples on how impacts of drought can be mitigated. The key contribution of the document is its guidance on the appropriate selection of tools and methodologies across the three key pillars.

Relevance to the assessment:

The Guidelines inform the multi-criteria system related to indices and indicators, types of drought, risk and vulnerability assessment formula, communication, and responses. The guidelines also provide information on how to reduce exposure and increase resilience to drought and recommendations related to some of the IDRM pillars.

BOX 5 | The strategic framework for drought risk management and enhancing resilience in Africa

The Strategic Framework for Drought Risk Management and Enhancing Resilience in Africa is an initiative of the UNCCD, WMO and FAO (2018). It presents a strategic framework as a blueprint for building effective drought risk management networks and enhancing resilience to drought at continental, regional, national and community levels. The overarching goal of the proposed framework is to develop drought risk management strategy for Africa to enhance resilience. It also inspires African countries to develop short, medium, and long-term drought mitigation and adaptation measures. The proposed Framework is centred on African countries, integrating regional institutes under leadership of the African Union, in collaboration with the international community. The strategic framework includes the following six elements that address goals and objectives outlined above:

BOX 5 (continued)

- Drought policy and governance for drought risk management;
- Drought monitoring and early warning;
- Drought vulnerability and impact assessment;
- Drought mitigation, preparedness, and response;
- Knowledge management and drought awareness; and
- Reducing underlying factors of drought risk.

Relevance to the assessment:

The proposed elements of the strategic framework and their guiding principles have strong linkages with the three pillars. Therefore, the document contributes to most basic criteria of the NDPs and spans across the multi-criteria system. However, it informs the necessary alignments of NDPs only in the context of Africa.

BOX 6 | The gender mainstreaming in drought management

As disasters affect men and women differently, addressing varying needs of men and women in drought preparedness initiatives is necessary from the perspective of human rights (UNCCD and UN Women, 2019). This assumption is also supported by an economic viewpoint since it results in more efficient and cost-effective disaster risk reduction measures. By reducing systematic inequalities and empowering women, gender-responsive drought approaches induce transformation to meet the needs of men and women equally. In support of the paradigm shift in management types, a gender-responsive approach is an instrument to improve the pre-disaster situation by increasing the resilience of both men and women and promoting more equitable social relations. Gender-responsive approaches in drought preparedness are much required to unlock the crucial role of women as actors in drought-risk management initiatives. The document informs on the following:

BOX 6 (continued)

- Drought disasters in the context of gender;
- Gender-based differentiation in disasters and vulnerability - implications for women versus men from various regions;
- Cases studies about woman as agents of change in drought affected semi-arid region and pastoralist women as community leaders for drought resiliency;
- Gender entry points in the development of a national drought management policy;
- Ten actions to ensure a gender-responsive approach throughout integrated drought risk management planning process; and
- Tools and resources.

It also discusses the importance of gender mainstreaming right in the planning process through the equal participation of women and men in the task force and implementing stakeholders. It raises the awareness on the gender mainstreaming throughout the three pillars of drought management.

Relevance to the assessment:

This reference provides guidance on the need for gender-responsive NDP design. It raises several relevant issues such as the importance of considering gender aspects in the associations of taskforce and committee, the need for engaging women and men in the overall process and decision-making, the stocktaking of differential challenges, and the needs and priorities of men and women. Topics such as why gender matters, gender mainstreaming in the NDP, gender entry point in the policy formulations are linked to the basic and additional criteria covered in the NDPs. Furthermore, the document lists resources that could be referred by experts while considering gender aspect in NDP preparation and disaster risk management.

BOX 7 | The national drought management policy guidelines: A template for action

The publication is part of the Integrated Drought Management Tools and Guidelines series, being compiled by the Integrated Drought Management Programme (WMO and Global Water Partnership, 2014). It addresses the needs of practitioners and policy makers. The purpose of the policy development and planning process described in the document is to provide a set of generic steps or guidelines for the development of overarching principles of a national drought policy to reduce risk. It indicates the policy to be implemented at the sub-national levels (i.e., provincial or state) through the development and implementation of drought preparedness plans that follow the framework or principles of the national drought policy. Among other things, it narrates and provides practical guidance for the ten steps of drought planning.

Relevance to the assessment:

This document thoroughly elaborates the 10-step process that provides an outline for the planning. The document is linked to the additional criteria of the introduction of 10-steps processes in the NDP. It is also linked to the drought risk and impact assessment, mitigation, and responses activities of the NDPs.

BOX 8 | The Hyogo framework of action: Building the resilience of nations and communities to disasters

The Hyogo framework for action is the key instrument for implementing disaster risk reduction, adopted by the Member States of the United Nations (United Nations, International Strategy for Disaster Reduction, 2007). Its overarching goal is to build resilience of nations and communities to disasters, by achieving substantive reduction of disaster losses. The Framework offers five areas of priorities for action, guiding principles and practical means for achieving disaster resilience for vulnerable communities in the context of sustainable development. These are:

- Ensuring that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
- Identifying, assessing, and monitoring disaster risks and enhancing early warning.
- Using knowledge, innovation, and education to build a culture of safety and resilience at all levels.
- Reducing the underlying risk factors.

BOX 8 (continued)

- Strengthening the disaster preparedness for effective response at all levels.

Relevance to the assessment:

This document details the priority actions that cover all types of disaster including drought. Among others, the main priority actions include the necessity of strong institutional basis for implementation; identification, assessment and monitoring of disaster risks and early warning systems; use of knowledge, innovation, and education to build a culture of safety and resilience at all levels. These aspects feed into the main criteria related monitoring and impact assessments, involvement of the most vulnerable groups, and communication and response actions. It also informs additional criteria related to the organizations and responsibilities.

BOX 9 | The Sendai framework for disaster risk reduction

The Sendai framework was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015 (United Nations Office for Disaster Risk Reduction, 2015). The Sendai Framework is the successor instrument of the Hyogo Framework. It aims to substantially reduce the disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries. The framework outlines seven targets and four priorities for action to prevent new and reduce existing disaster risks: understanding disaster risk; strengthening disaster risk governance to manage disaster risk; investing in disaster reduction for resilience; enhancing disaster preparedness for effective response, and “Building Back Better” in recovery, rehabilitation, and reconstruction. The guiding principles of the implementation of the Sendai Frameworks are the following:

- Primary responsibility of States to prevent and reduce disaster risk, including through cooperation;
- Shared responsibility between central Government and national authorities, sectors and stakeholders as appropriate to national circumstances;
- Protection of persons and their assets while promoting and protecting all human rights including the right to development;

BOX 9 (continued)

- Engagement from all of society;
- Full engagement of all State institutions of an executive and legislative nature at national and local levels;
- Empowerment of local authorities and communities through resources, incentives and decision-making responsibilities as appropriate;
- Decision-making to be inclusive and risk informed while using a multi-hazard approach;
- Coherence of disaster risk reduction and sustainable development policies, plans, practices and mechanisms, across different sectors;
- Accounting of local and specific characteristics of disaster risks when determining measures to reduce risk;
- Addressing underlying risk factors cost-effectively through investment versus relying primarily on post disaster response and recovery;
- ‘Build Back Better’ for preventing the creation of, and reducing existing, disaster risk;
- The quality of global partnership and international cooperation to be effective, meaningful and strong; and
- support from developed countries and partners to developing countries to be tailored according to needs and priorities as identified by them.

Relevance to the assessment:

The defined priorities and the guiding principles of the Framework are linked to and contributes to additional and main criteria related mainly to the organizations and responsibilities, and secondly to mitigation and response actions.

BOX 10 | The framework for the assessment of benefits of action/ cost of inaction (BACI) for drought preparedness

This working paper draws from the work of World Bank on benefits of action and costs of inaction for drought preparedness and mitigation (Venton et al., 2019). It suggests a methodological framework for the assessment of benefits of action and costs of inaction as a tool to support a shift in drought policy and programs from crisis management to a risk management approach. By proposing an initial framework, it integrates also the 10-step process for developing drought strategies. In this way, the methodology embeds the assessment of benefits of action and costs of inaction in the overall development of a drought risk management strategy. The document is a first approach to guide stakeholders to ask the right questions at the different stages.

Relevance to the assessment:

Chapter 2 of the paper discusses why there has been a lack of action on drought risk management, and chapter 3 summarizes some of the current tools and approaches to drought risk management. Both aspects are related to the issues covered in the NDPs such as understanding of drought and its impact, and thus informs the importance of the NDP, as well as the tools of drought risk management linked to vulnerability and risk assessment.

BOX 11 | The drought risk reduction framework and practices: Contributing to the implementation of the Hyogo framework of action

The Secretariat of International Strategy for Disaster Reduction, in cooperation with the National Drought Mitigation Center (University of Nebraska) and other partners, has developed this Framework based on contemporary thinking and practice in many countries (United Nations Secretariat of the International Strategy for Disaster Reduction, 2007). It is prepared with the aim of guiding the implementation of the Hyogo Framework of Action in respect to drought. The document elaborates a framework for understanding drought and vulnerability to drought and provides guidance on actions to reduce the risks associated with drought.

It discusses the main elements for a drought risk reduction framework and practices, including:

- Policies and governance for drought risk reduction;
- Drought risk identification, impact assessment, and early warning;
- Drought awareness and knowledge management; and
- Effective drought mitigation and preparedness measures.

Relevance to the assessment:

The Framework has an overall reference to the NDPs, as it covers multiple subjects such as understanding disaster risk and risk governance, investing in risk management, or enhancing disaster preparedness. Such information is overarching and spans across the additional and main criteria of the assessment.

BOX 12 | The Sphere handbook

The Sphere handbook is prepared to determine and promote standards by which the global community responds to the plight of people affected by disasters (Sphere Association, 2018). It has core humanitarian principles that also consider the right and dignity of people affected by disaster. Its aim is to improve the quality of the humanitarian responses and to be accountable for the taken actions. It provides a set of universal minimum standards in core areas of humanitarian assistance. The handbook includes minimum standards in key response sectors:

- Water supply, sanitation and hygiene promotion (WASH);
- Food security and nutrition;
- Shelter and settlement; and
- Health.

Relevance to the assessment:

The Handbook has partly overarching and partly content-specific relevance to the criteria framework. From the perspective of the direct content, the most important references are the quality, quantity, and source of water; the capacity covering the gender aspect and role of communication in the humanitarian response. Such guidance is linked to the drought response actions, gender and vulnerable group considerations, and communication aspects included in the multi-criteria framework.

BOX 13 | The Integrated Drought Management Programme (IDMP) HelpDesk

In 2013, WMO and the Global Water Partnership launched the Integrated Drought Management Programme to address drought issues more effectively (WMO and Global Water Partnership, 2022). The Programme provides advice and guidelines to communities, countries and regions affected by drought through an online HelpDesk. Among others, it provides a repository of information on drought related guidelines, tools, and libraries. The Programme works with a wide range of partners with the objective of supporting stakeholders at all levels. It provides policy and management guidance through globally coordinated generation of scientific information and best practices for IDRM. The Programme is a contribution to the Global Framework for Climate Services, especially with regards to its priority areas of disaster risk reduction, water, agriculture, and food security.

Relevance to the assessment:

Information by the HelpDesk is provided on:

- What should be monitored;
- Why it is monitored;
- How the assessment of impacts is done; and
- What are the short term, medium term and long-term measures taken.

This information is linked to and contribute to most of the basic criteria of the assessment. The website has an overarching role in informing the assessment criteria.

BOX 14 | The handbook of drought indicators and indices

This publication is part of the Integrated Drought Management Tools and Guidelines Series, compiled by the Integrated Drought Management Programme (WMO and Global Water Partnership, 2016). The purpose of the document is to cover some of the most commonly used drought indicators and indices, which are being applied across drought-prone regions. It provides technical guidance for advancing monitoring, early warning, and information delivery systems in support of risk-based drought management policies and preparedness plans. The indicators and indices are related to meteorology, soil moisture, hydrology, remote sensing and composite or modelled ones. It provides knowledge of the followings:

- Definition of indicators and indices;
- Approach for monitoring and guiding early warning and assessment;
- Selecting appropriate indicators and indices; and
- Resources of indicators and indices.

Relevance to the assessment:

The handbook has an explicit reference to the main criteria related the first pillar of IDRP, more specifically to indicators and indices, early warning and forecasting and impact assessments. The repository of the indicators and indices helps select the best fitting options to the country context.

BOX 15 | The drought impact and vulnerability assessment: A rapid review of practices and policy recommendations and its alignment to the framework

This review, by title, is in support of the second pillar of IDRM, namely the impact and vulnerability assessment (UNCCD et al., 2019). The document is a stocktaking of existing mechanisms for impact and vulnerability assessment. It details the definitions, application fields and strength of available methods and approaches at different levels (from sub-national to country level). The document emphasizes that different contexts require different approaches. The review includes global case studies and draws on consultations with relevant institutions.

Relevance to the assessment:

The review contributes to the main criteria related to the second pillar of IDRM, more specifically to the drought impact assessment, risk and vulnerability assessment.

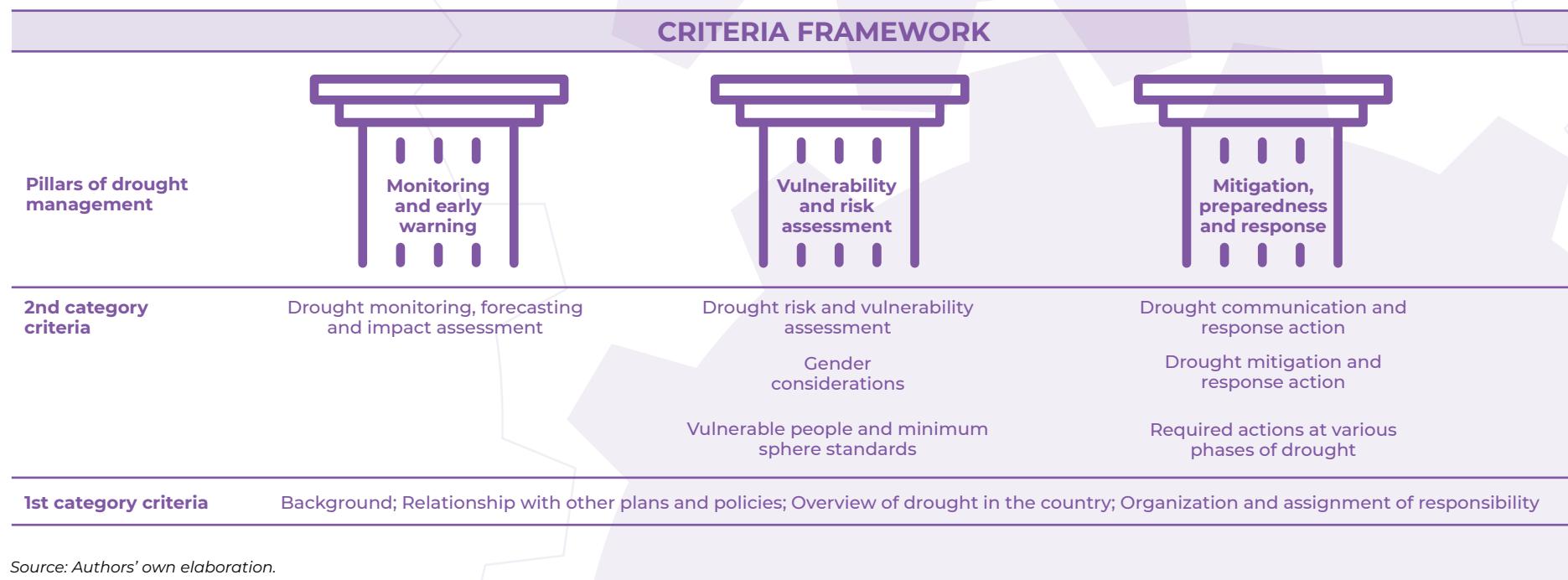
Weighted multi-criteria framework

The construction of a multi-criteria framework was based on the consistent review of the reference guidelines and the first-hand reading of the 31 validated and published NDPs. Most criteria reflect the sections and the sub-sections recommended by the model NDP. The reference guidelines provided information on how these sub-sections should be elaborated and substantiated. Moreover, some extra criteria and sub-criteria are added to make the assessment more circumspect. At the same time, the fast-track screening of the NDPs helped understand what is reasonably attainable from these criteria. To enhance the objectivity of the assessment and shift the qualitative analysis to a quantitative one, 12 basic criteria were used to gauge the readiness of the NDPs. Weight was assigned to each criterion, based on the relevance of the criterion to the robustness of the plan.

Criteria categories

The 12 main criteria, shown in [Figure 13](#), are classified in two categories. The first category is made up of four additional main criteria that are intended to contextualize the NDPs and provide the necessary background information. The weights of the four criteria are set at 5 percent per each. The second category, composed of 8 main criteria, are directly linked and contribute to the three pillars of integrated drought management. The score of the 8 main criteria in the second category is used to measure the readiness of the plans to implement the proposed actions. The weights of the 8 criteria are set at 10 percent per each.

FIGURE 13: MAIN CRITERIA OF THE MULTI-CRITERIA FRAMEWORK



Definition of sub-criteria

Based on the model NDP and reference guidelines, the 12 criteria were disaggregated into sub-criteria due to several reasons, displayed in [Table 1](#). Firstly, definition of more precise sub-criteria can mitigate the risk of overlooking important narrative or information. Also, sub-criteria are more likely to detect the incomplete content, so concrete recommendations can be drawn to enhance the NDP. Each NDP was screened against the sub-criteria, based on multiple rounds of reading. Likert-scales with varying ranges were used to assess each sub-criterion, and the results were standardized to match the weight of individual sub-criterion to the overall weight of the

main criterion. NDPs that clearly outline and respond to the requirements of the sub-criterion received the highest score. Missing information on the sub-criterion resulted in zero score, thus reducing the achievable final score. The individual scores of the sub-criterion are aggregated into a final score. The deviation from the maximum achievable score from the 8 main criteria (80) indicates the volume of required work to enhance the NDP. The compliance with four additional main criteria is measured to understand the missing background information for the key messages. [Table 1](#) details the main criteria and the corresponding sub-criteria. The definition of sub-criteria is complemented with the assigned weight.

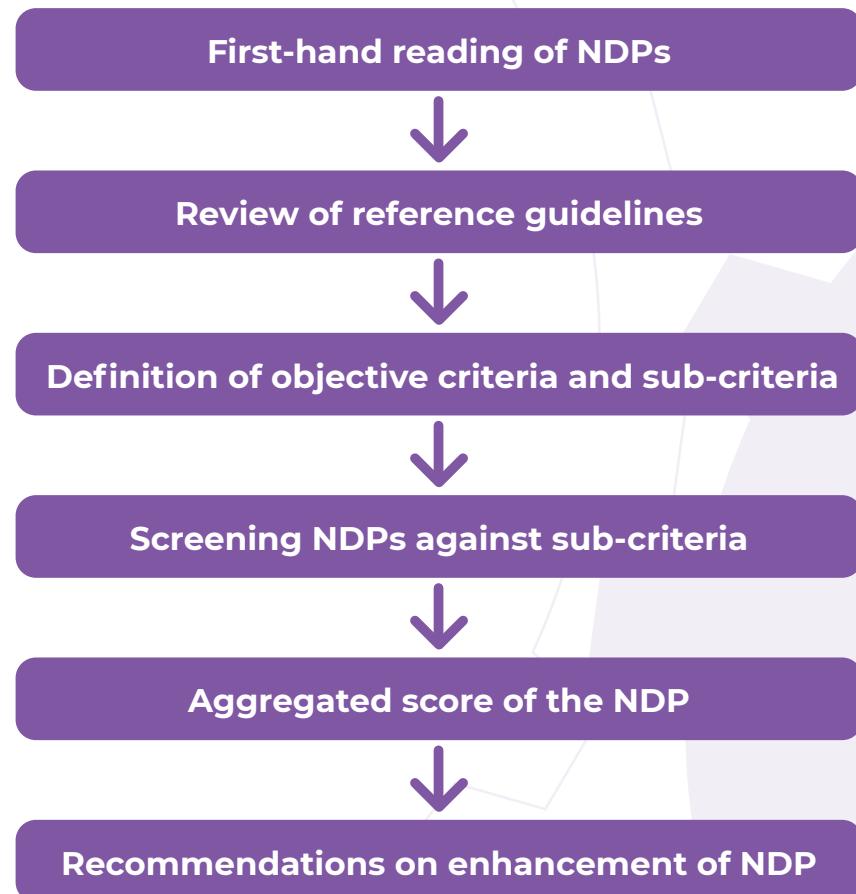
TABLE 1: THE MULTI-CRITERIA FRAMEWORK AND DEFINITIONS

Additional criteria								Main criteria				
1.Background	2.Relationship with other plans and policies	3.Overview of drought	4.Organization and assignment of responsibilities	1.Monitoring, forecasting and impact assessment	2.Drought risk and vulnerability	3.Gender consideration	4.Vulnerable people and sphere standard	5.Drought communication and response action	6.Drought mitigation and response action	7.Recommendations and implementation actions	8.Required actions at various stages	
Sub-criteria	Purposes, scope, goals, and objective	National water laws	Historical occurrence	Organizational overview	Drought indices	Drought risk and vulnerability assessment	Membership of taskforce	Vulnerable people consideration	Drought communication protocol	National water resource monitoring and impact assessment	Priority implementation actions	Pre-drought
	Introduction of 10-step process	Mitigation strategies and planning	Understanding of drought	Assignment of responsibility	Drought monitoring, forecasting and data collection	GIS-based mapping	Reflection in NDP basic contents	Sphere standard consideration	Declaration of drought condition	Development of new and alternative water resources	Future updates and revision	During drought
	Importance of NDP	Drought impact by sector		Drought severity in all relevant sector	Drought risk areas and/or locations			Communication and coordination guidelines	Water conservation practice, public education, and awareness creation			Post-drought
	Access to safe water			Drought impact assessment methodology				Drought response actions	Prioritization of water supply for all people at affordable price			
									Legislation and land use planning			

Source: Authors' own elaboration.

Wrap-up of the approach

FIGURE 14: FLOWCHART OF THE ASSESSMENT METHOD



Source: Authors' own elaboration.

5

The outcome of the assessment framework

Results of ranking

The results show a varying degree of the readiness for implementation. Achieved scores range from 5.4 to 51.2, but even the highest performing NDPs would benefit from certain recommendations. As a further support to the review of the NDPs, the creation of country “tiers” is a step to distinguish groups with different levels of required revision. The grouping is based on the factors: the achieved total score and the number of non-scored sub-criteria.

FIGURE 16: CRITERIA RANGES OF COUNTRY TIERS

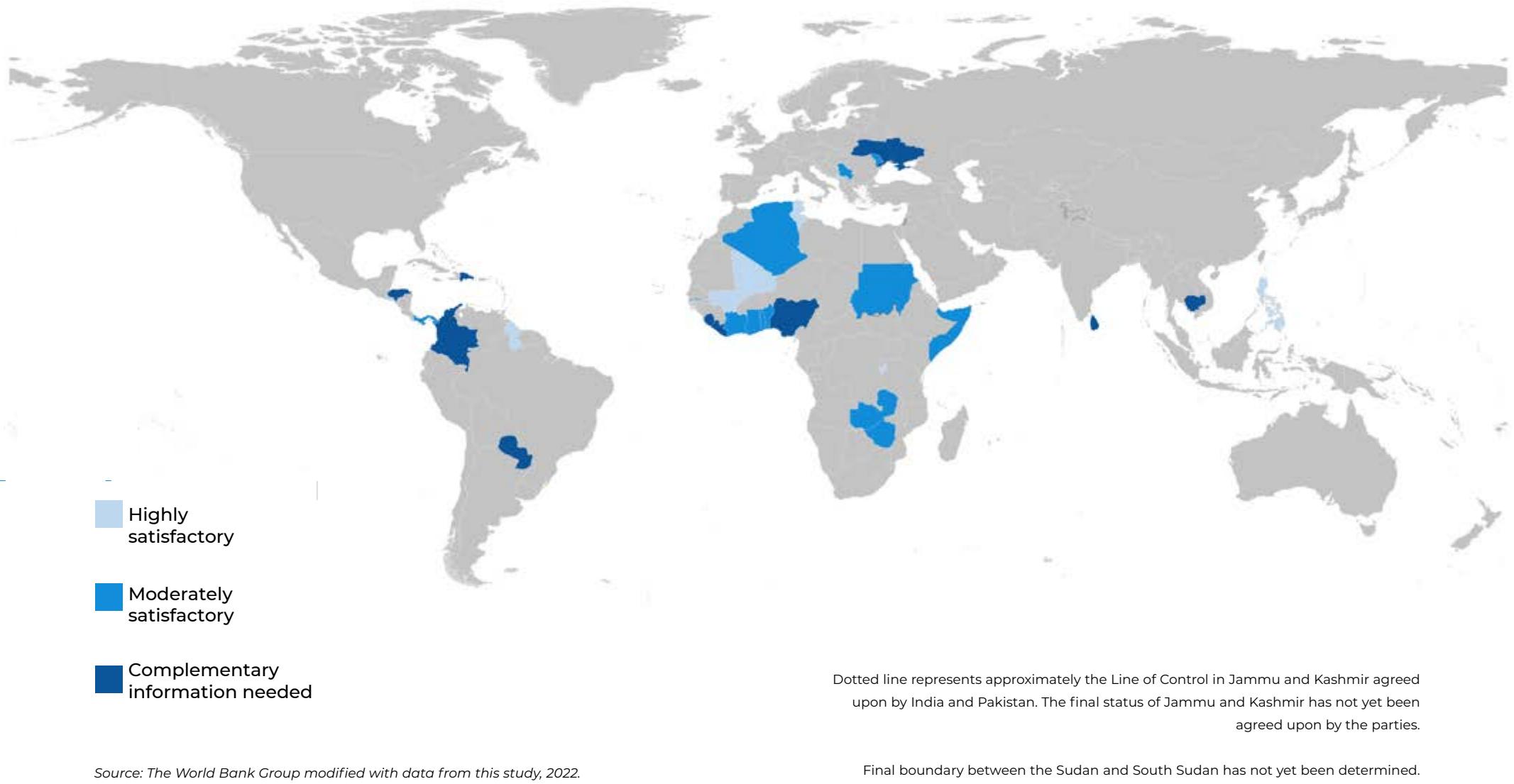


Source: Authors' own elaboration.

Applying this logic, 6 countries are lumped into the 1st tier, 14 countries in 2nd tier, and 11 countries in the 3rd tier.



FIGURE 17: MAP OF COUNTRY TIERS BASED ON THE OUTCOME OF THE ASSESSMENT



The gap canvas

Beyond the country-specific observations, there are commonly occurring shortcomings that apply to many NDPs. The gap canvas depicts such shortcomings and provide overarching recommendations as reference for future reviews.

BOX 16 | Recommendations on improving the consistency of chapters

The logical order of the 10-steps approach and the recommended template of the NDP structure are established to achieve a comprehensive and all-encompassing document. High-level cohesion has numerous merits, such as established logical relationships amongst sections (i.e., findings of risk and vulnerability assessment reflected in response actions), readability, and well-grounded rationale for findings and action plans.

Identified issue: The link between chapters and sections are often insufficiently articulated, which impairs the cohesion of the document. The consistency amongst chapters and sections should be improved.

Recommended actions to improve consistency:

- Referring forward and backward: sections and chapters that have reference at each other can create a logical relationship and support the soundness of the statements.
- Wrap-up of chapters: a brief summary of the chapters can highlight the information which are taken forwards.
- Sequenced structure: gradual build-up of the information across sections can highlight the evolution curve of the document.
- “All-roads-lead-to-Rome”: chapters and sections consistently moving towards the final action plans can enhance the robustness of the recommended actions. Orphaned statements and findings which are not reflected in the action plans can trigger uncertainties.

Relevant reference guidelines: the model NDP; Drought Resilience, Adaptation and Management Policy Framework; National Drought Management Policy Guidelines; Integrated Drought Management Program.

BOX 17 | Recommendations on the adherence to model NDP

The model NDP describes the required content in detail. It has a versatile and flexible guidance that can be applied in different contexts. The model NDP, however, is not meant to limit the provided information to the recommended approach and template. The model NDP highlights that the steps can be adjusted based on the country situation.

Identified issue: The interpretation and recommended structure of the chapters of the model NDP are ambiguous. The uncertainties around the common understanding of the requirements should be eliminated.

Recommended process to leverage the model NDP:

- Assessing the relevance: the relevance of the recommended chapters is context specific, therefore pre-assessment of the required details per chapters can help comply with the requirement of NDP and adjust its content to the particularities of the country's context.
- Zero tolerance: each step of the approach and chapter of the recommended structure has its own rationale. No chapter can be overlooked and eliminated.
- Additions fit to purpose: some contexts require additional information, which are not indicated in the model NDP. These additions should be added without compromising the requirement of the model NDP.

Relevant reference guidelines: the model NDP; National Drought Management Policy Guidelines.

BOX 18 | Recommendations on gender mainstreaming

Importance of gender mainstreaming cannot be stressed strongly enough. Women are affected differently and are often more vulnerable to drought. Gender-responsive planning is required by the model NDP, and a suite of reference guidelines provide further information on gender mainstreaming. No plan can be considered completed without sufficient emphasis on women.

Identified issue: Gender mainstreaming is almost entirely silent in the NDPs. Neither dedicated sections nor holistic mainstreaming is found in the most of the NDPs. The absence of gender mainstreaming contradicts with the principle of planning process: “equitable for all regions, population groups, economics and social sectors”. Therefore, gender should be more emphasized in all plans.

Recommended revision for gender mainstreaming:

- Full gender assessment: the preparation of targeted gender assessment is an integral part of a robust plan. The gender component should not be an ad-hoc auxiliary but a consistently mainstreamed aspect of the NDPs. A full gender assessment as background study can help understand where gender-related information should be in-built across the document.
- Vehicles towards gender equality: empowerment of women require targeted approaches, methods, tools, and resources. Situational analysis and generic overview of the status of women are not sufficient to move NDPs towards gender mainstreaming. Wherever differentiated means are required, these should be clearly explained.
- Harnessing women’s knowledge: women should not be perceived only as a vulnerable stakeholder group, who are hit hardest by drought. They carry substantial potential to be part of the solutions, so harnessing women’s knowledge and experience can be integral part of the defined action plans and strategies

Relevant reference guidelines: Gender Guide of the UNCCD, Hyogo Framework for Action; Drought Risk Reduction Framework and Practices: Contributing to the Implementation of the Hyogo Framework for Action; Humanitarian Sphere Standard.

BOX 19 | Recommendations on the integration of vulnerable groups

Definition of vulnerable groups is context specific. Yet, all countries have vulnerable stakeholder groups, for whom they are accountable. The need for differentiated approaches and targeting strategies for different vulnerable groups is already well-understood. The principles of developing NDP refer to the equitable gains for all population groups. To achieve this, vulnerability appears as a multidimensional definition.

Identified issue: The majority of NDPs investigates vulnerability from the perspective of the exposure to drought. They do not differentiate the varying degree of drought impacts on vulnerable groups.

Recommended revision for considering vulnerable groups:

- Improved awareness: the sufficient consideration of vulnerable groups requires the explicit definition of such groups. Rigorous assessment of the situation of vulnerable groups in the context of drought can help raise awareness and gear NDPs towards a more inclusive planning mechanism.
- Targeted approaches: different vulnerable groups require different means to build resilience. Group-specific stocktaking can make NDPs more powerful in eliminating systematic inequalities.
- The power of youth: youth groups hardly surface in drought planning processes. Nevertheless, proactive drought management is increasingly relying on modern technologies, science, and innovations. Youth has a clear entry point through the participation in modern approaches.
- Mobilizing Indigenous knowledge: Indigenous knowledge has enormous potential to build resilience, and this potential can be enabled through the mobilization of traditional communities. Consideration of the Indigenous knowledge and the power of informal learning can amplify the impact of the NDP. Also, leveraging the Indigenous knowledge can improve the affordability of the action plans, where there is no need to “reinvent the wheels”.

Relevant reference guidelines: Hyogo Framework for Action; Drought Risk Reduction Framework and Practices: Contributing to the Implementation of the Hyogo Framework for Action; Humanitarian Sphere Standard.

BOX 20 | Recommendations on the minimum expected content

The expected content of the chapters defined by the model NDP is somewhat flexible. The planning guidelines appreciate the different contexts of the countries, which might require modified narratives. The minimum content is still reasonably expected to respond to the requirements of the planning mechanism.

Identified issue: The NDPs put different emphasis on different chapters, and generally important information become compromised frequently.

Recommended process to comply with the expected minimum content:

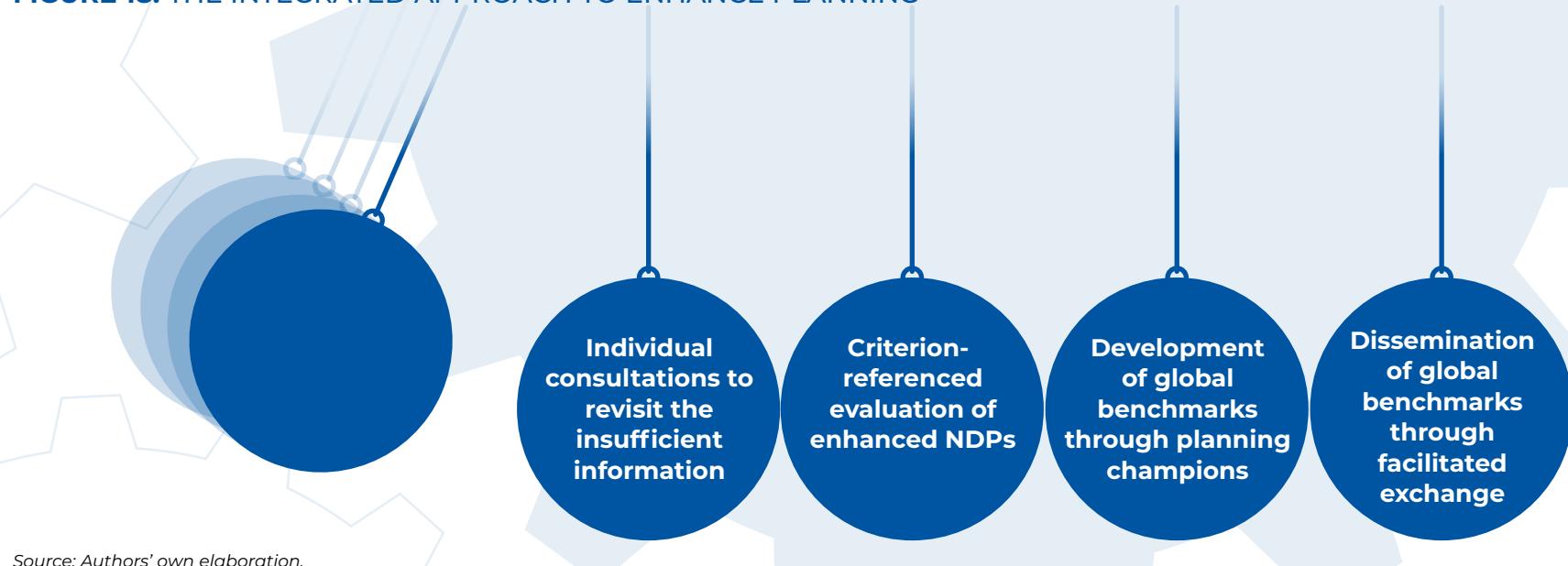
- Art in the details: even subordinated and less relevant sections should be rigorously addressed. An outline of the expected content of the sections should be crafted to ensure that no detail is overlooked.
- Multidisciplinary approach: some chapters require the involvement of multiple disciplines and their representations. Wider consultation with diverse stakeholders can help understand the minimum required content and emphasize on sub-section. Minimum content should be advised by relevant counterparts.
- Benchmarks: using global benchmarks per section can provide sufficient reference to a solid planning mechanism. Benchmark documents usually involve indicators to measure the compliance with the expected level of information. Transferring such indicators or using them as reference can further improve the rigour.

Relevant reference guidelines: the Model NDP, Integrated Drought Management Program; Drought Resilience, Adaptation and Management Policy Framework; Strategic Framework for Drought Risk Management and Enhancing Resilience in Africa; National Drought Management Policy Guidelines: A Template for Action; Drought Resilience, Adaptation and Management Policy: Supporting Technical Guidelines; Gender Guide of the UNCCD; Hyogo Framework for Action; Sendai Framework for Disaster Risk Reduction; Humanitarian Sphere Standard; Framework for the Assessment of Benefits of Action or Cost of Inaction for Drought Preparedness; Drought Risk Reduction Framework and Practices: Contributing to the Implementation of the Hyogo Framework for Action; Handbook of Drought Indicators and Indices.

Moving national drought plans forward

The individual screening of NDPs outlines the sections that require enhancement. If recommendations are duly taken, the NDPs can be considered ready for implementation. To achieve impact at scale, an integrated approach is constructed ([Figure 18](#)).

FIGURE 18: THE INTEGRATED APPROACH TO ENHANCE PLANNING



The roll-out of the integrated approach starts with the selection of countries to provide basis for case study development. Three aspects are considered during the country selection:

- All regions represented: the representations of the 6 defined sub-regions are required to establish benchmarks that support a reasonable geographical balance.
- Several case studies per sub-region: at least 2 case studies per region are desirable to address the different settings within the same geographical scope.
- Highest performance: countries achieving the highest score are more advanced to support the fast-tracked establishment of global benchmarks.

6

Building global benchmarks – repository of case studies

To build up a large enough body of best practices in IDRM, participating countries must collaborate and nurture common interest. Peer-based learning is a fundamental instrument of the Community-of-Practice in drought management. There is no single “universal” plan that can be transferred from one place to another. But this baseline should not discourage the participating countries and result in a paradoxical turn away from making mindful comparisons. Only the objective should be repurposed, and the scope of peer learning should be the uptake of knowledge on the methods, techniques, and approaches of planning. Understanding where certain NDPs put emphasis can be inspiring for those who have overlooked important aspects so far. Highlighting the strengths of outstanding NDPs and outlining the best practices can, thus, help the NDPs move to complete their objectives. The case studies presented are built on country specific NDPs. Beyond the best practices, the case studies explain the recommendations stemming from the multi-criteria assessment. The implemented recommendations can make the NDPs oven-ready, and with alignment to other national priorities, the NDPs can be considered a robust instrument to improve preparedness.



This makes the report a living document that provides a synthesis of three selected case studies. However, the presentation of the case studies is neither final nor completed. The aim is to increase the number of case studies and dive deep into the process of enhancing NDPs.

Enhancing the National Drought Plan of Guyana

Overall performance

Guyana is one of the 31 countries that have participated in the Drought Initiative and successfully published its NDP (Co-operative Republic of Guyana 2020). The stakeholder validation of Guyana's NDP was conducted virtually in June 2020. The purpose of the NDP is to facilitate the proactive, coordinated, and effective planning towards preparedness, mitigation, adaptation, response, and recovery activities. The NDP aims to implement the three pillars of IDRM at national level. The guiding principles of the NDP include the following: preparedness, scientific assessment, timely decision-making, effective stakeholder participation, flexibility, effective information management and communication, and effective monitoring. The objectives of the NDP are defined in line with the physical, socio-political, environmental, and economic characteristics, briefly wrapped up as in Figure 19.

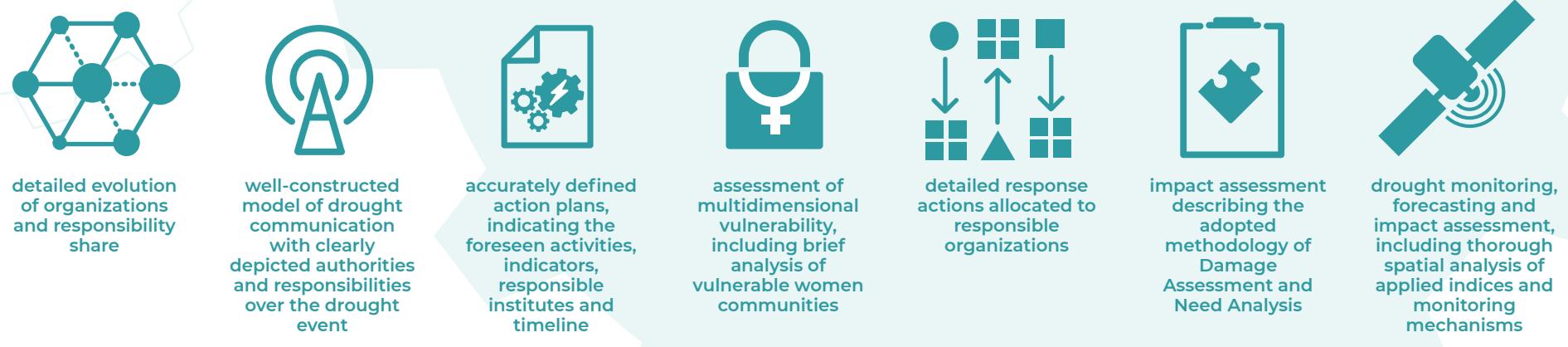
FIGURE 19: OBJECTIVES OF THE NATIONAL DROUGHT PLAN OF GUYANA



Source: Authors, based on Guyana's National Drought Mitigation and Adaptation Plan.

Based on the assessment, the NDP of Guyana proved robust and exceptional from many perspectives. The NDP excelled in several criteria thanks to the prudent planning mechanism (Figure 20).

FIGURE 20: IDENTIFIED STRENGTHS OF THE NATIONAL DROUGHT PLAN OF GUYANA



Source: Authors' own elaboration.

Aside from some desirable additions, the aggregate balance of the assessment outcome is positive. Most sub-criteria reached over 80 percent of the maximum score, and only one main criterion requires reconsideration (Table 2).

TABLE 2: THE ASSESSMENT RESULTS OF THE NATIONAL DROUGHT PLAN OF GUYANA

Monitoring, forecasting and impact assessment				Drought risk and vulnerability					
Drought indices	Drought monitoring, forecasting and data collection	Drought severity in all relevant sector	Drought impact assessment methodology	Drought risk and vulnerability assessment	GIS-based mapping	Drought risk areas and/or locations			
100%	100%	80%	100%	54%	80%	100%			
Gender considerations		Vulnerable people and sphere standard		Drought communication and response action					
Membership of taskforce	Reflection in NDP basic contents	Vulnerable people consideration	Sphere standard consideration	Drought communication protocol	Declaration of drought condition	Communication and coordination guidelines			
0%	71%	82%	0%	96%	80%	100%			
Drought mitigation and response action					Recommendations and implementation actions		Required actions at various stages		
National water resource monitoring and impact assessment	Development of new and alternative water resources	Water conservation practice, public education and awareness creation	Prioritization of water supply for all people at affordable price	Legislation and land use planning	Priority implementation actions	Future updates and revision	Pre-drought	During drought	Post-drought
80%	83%	67%	67%	100%	79%	83%	0%	0%	0%

Global benchmark

The demonstration of existing mechanisms that can be leveraged during the implementation of the action plan is a unique attribute of the NDP of Guyana. Such existing mechanism is the Drought Monitoring Bulletin operated by the Hydro-meteorological Service, which is compliant with WMO standards and is released with a monthly frequency: “Guyana uses the Standardized Precipitation Index (SPI), adopted by the WMO as the global standard to measure droughts. SPI was developed primarily for defining and monitoring drought.” It is used to “determine the rarity of a drought

at a given timescale of interest for any rainfall station with historic data.” Currently, the Hydro-meteorological Service maintains a rainfall network of 180 current and/or historical rainfall gauges and 5 weather stations placed strategically across Guyana (Table 3). This facilitates the collection and fitting of historic rainfall data to a gamma distribution to compute the country’s drought index. It is worth noting that, in 2009–2010, the Caribbean Institute for Meteorology and Hydrology adjusted the SPI classification to ensure detection of drier conditions.

TABLE 3: REVISED SPI CLASSIFICATION USED FROM 2011

SPI Value	Category	SPI Value	Category
-0.50 to -0.01	Normal	0.50 to 0.01	Normal
-0.80 to -0.51	Slightly dry	0.80 to 0.51	Slightly wet
-1.30 to -0.81	Moderately dry	1.30 to 0.81	Moderately wet
-1.60 to -1.31	Very dry	1.60 to 1.31	Very wet
-2.00 to -1.61	Extremely dry	2.00 to 1.61	Extremely wet
Less than or equal to -2.01	Exceptionally dry	Greater than or equal to 2.01	Exceptionally wet

Little wonder, then, that the NDP has best performed in the main criteria on “Drought monitoring, forecasting and impact assessment”. To this end, the NDP thoroughly responds to all sub-criteria that fall under this main criterion such as drought indicators and indices, the current and aspired monitoring, forecasting and data collection approaches. The analysis evolves from the historical assessment of drought occurrence to draw lessons from past experiences. For the sake of completeness, the NDP highlights how the coordination of the existing infrastructure should be strengthened to achieve a fully functional monitoring and forecasting system. It also describes the desirable steps to improve the rigour of the system, such as the development of further indices differentiated by drought types, establishment of a system with near real-time acquisition, and standardized impact assessment.

Room for improvement

Some enhancements can benefit the NDP to provide a global benchmark for all criteria. The enhancements are also welcomed to roll out the implementation of the action plan. Three intervention points are suggested to

finalize the revision: pronounced gender consideration, definition of sphere standard, and required actions at different phases of drought.

Gender consideration in the membership of the taskforce

The reference guidelines stress that the NDP should be gender responsive. It needs to adopt a gender-responsive approach in drought preparedness, policy making and programming to activate women’s role in drought-risk management initiatives. As part of the 10-steps process, the recommendations advise on the required gender balance during the appointment of taskforce members. This gender entry point aims to increase the power of women in decision-making process and give sufficient supervision role over the implementation.

Like many others, the NDP of Guyana has no reference to the association of taskforce member. The retrofitting of existing institutional structure can be challenging; therefore, the following actions are recommended to address this gap:

- Prepare gender-sensitive stakeholder checklist;
- Identify gender focal points in all responsible organizations;
- Define the critical knowledge, with which women can contribute to the objectives of the NDP;
- Identify gender focal points based on the analysis and gender-differential knowledge;
- Prepare a responsibility matrix of female members, which covers all aspects of the NDP;
- Define the modality on how gender focal points are involved in the communication channel of the taskforce; and
- Prepare monitoring protocol on tracking the decisions of gender focal points.

Sphere standard consideration

Sphere standards are not explicitly emphasized in the guidelines and templates of IDRM. This gaping hole is well emphasized in the Humanitarian Sphere Standard. However, the need for introducing standards is all the more evident to practitioners, who are involved in the direct assistance at all stages of drought event. Similar to the rest of the NDPs, the NDP of Guyana has not yet mainstreamed the sphere considerations. Applying sphere standards in the NDP is not expected to meet considerable challenges but requires a prior understanding of what has been already existing and what should be further introduced:

- Review and map the facilities to meet the minimum standards in drought-prone and high-risk areas (water supply, sanitation and hygiene promotion, food security and nutrition, shelter, settlement and non-food items, health action);
- Assess how the protection principles and core standards can be fulfilled in communities in vulnerable areas, with special focus on those most vulnerable;
- Annex the relevant indicators to the NDP, as a protocol for the implementation of sphere standard during drought event; and
- Pilot the protocol made up of indicators using historical events and highlight the needs for improvement.

Required actions at various phases of drought

Like other disasters, drought disaster passes through three phases: pre-disaster, during disaster and post disaster phases. As one of the objectives of the preparation of the NDP is to promote proactive drought risk management, the pre-disaster phase gives the opportunity to plan and invest in drought disaster prevention, avoidance and preparedness interventions, including early warning. Likewise, there are activities that will be carried out during drought disaster such as rapid needs assessment, provision of water, food and non-food related supports based on needs. At post-disaster phase, interventions related to rehabilitation, recovery, and reconstruction (building-back-better) will be implemented. The NDP of Guyana includes a well-constructed action plan with detailed information on the implementation modality of the plan. It also elaborates on the drought response measures in a detailed manner. However, and in order to strengthen the

feasibility of the proposed measures, the defined actions must be phased as per the three stages of drought:

- Review the drought response measures and define their position across the three stages of drought;
- Define the pre-requisites of implementing each measure;
- Estimate the timeline of each response measure;
- Align the action plan with the response measures to understand the critical gaps;
- Prioritize early action but do not neglect post-drought actions; and
- Complement the “Drought Coordination Activities” with post-drought activities.

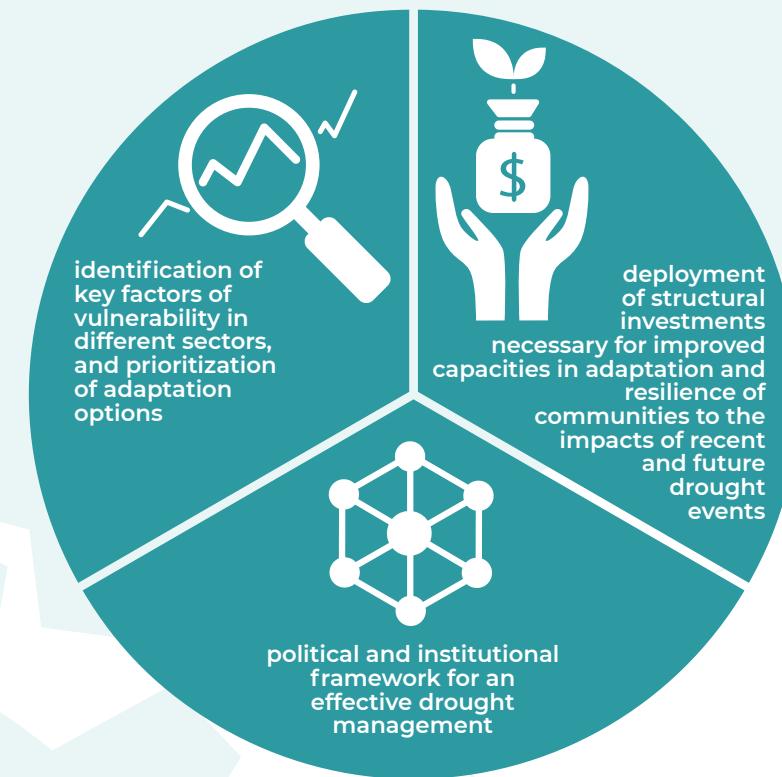
Enhancing the National Drought Plan of Burundi

Overall performance

Burundi has been experiencing severe droughts with considerable consequences on the socio-economic aspects (Republic of Burundi, 2020). Studies indicate that the Great Drought spanning from 1943–1944 turned into long-lasting famine and inflicted human toll. It was extraordinary drought that spread through the country with a major impact on agriculture. Having experienced a devastating history of drought events, the aspirations to avoid harmful consequences are amongst the national priorities in Burundi. The stakeholder validation of Burundi’s NDP was conducted in August 2020. The

NDP aims to construct a robust mechanism to overcome the challenges of drought and increase resilience of people, communities and the ecosystem. The NDP defines three objectives as shown in [Figure 21](#).

FIGURE 21: OBJECTIVE OF THE NATIONAL DROUGHT PLAN OF BURUNDI



Source: authors based on National Plan for Combatting Drought in Burundi.

Based on the assessment, the NDP of Burundi present several good practices and unique content, which serve as a model for other plans ([Figure 22](#)).

FIGURE 22: IDENTIFIED STRENGTHS OF THE NATIONAL DROUGHT PLAN OF BURUNDI (SOURCE: AUTHORS)



Source: Authors' own elaboration.

The overall performance of the NDP is highly satisfactory. Except two missing main criteria, the NDP meets the requirements Table 4).

TABLE 4: THE ASSESSMENT RESULTS OF THE NATIONAL DROUGHT PLAN OF BURUNDI

Monitoring, forecasting and impact assessment				Drought risk and vulnerability					
Drought indices	Drought monitoring, forecasting and data collection	Drought severity in all relevant sector	Drought impact assessment methodology	Drought risk and vulnerability assessment	GIS-based mapping	Drought risk areas and/or locations			
100%	50%	100%	88%	40%	80%	80%			
Gender considerations		Vulnerable people and sphere standard		Drought communication and response action					
Membership of task force	Reflection in NDP basic contents	Vulnerable people consideration	Sphere standard consideration	Drought communication protocol	Declaration of drought condition	Communication and coordination guidelines			
100%	86%	9%	0%	92%	88%	88%			
Drought mitigation and response action				Recommendations and implementation actions		Required actions at various stages			
National water resource monitoring and impact assessment	Development of new and alternative water resources	Water conservation practice, public education and awareness creation	Prioritization of water supply for all people at affordable price	Legislation and land use planning	Priority implementation actions	Future updates and revision	Pre-drought	During drought	Post-drought
67%	83%	67%	0%	100%	79%	83%	0%	0%	0%

Global benchmark

Among the main evaluation criteria, the gender considerations far outperformed the expected content. It well demonstrated the importance of decent gender balance in the drought task force. Here, it has highlighted the institutional framework for managing risks and disasters to give particular emphasis on the gender institutional mechanism. In addition, gender aspects are well captured in most of the topics covered in the NDP. The importance of gender agenda is mainstreamed through the entire plan and is reflected under topics such as drought monitoring and forecasting, risk and vulnerability to drought, communication and prevention measures, preparedness, and mitigation among others. Most importantly, gender consideration is pronounced right in the objectives of the plan, namely under the extended definition of the second objective: deployment of structural investments necessary for improved capacities in adaptation and resilience of communities, in particular of women, children and other vulnerable groups, to mitigate the impacts of recent and future drought events. Under the objectives of the National Drought Control Plan, the NDP has made exceptional presentation “In its National Gender Policy 2012–2025, the Government of Burundi has decided to strengthen its commitment to eliminate gender inequalities. Thus, the proposed measures are not simple adjustments designed specifically for women, but they support the long-term structural changes that are able to establish sustainable equity and equality between women and men at all levels of economic, political and social aspects”. The first guiding principle of the National Gender Policy refers to the necessary recognition of: (i) the importance of the equity and equality between women and men in the development; (ii) the cross-cutting nature of the gender aspect; and (iii) the endorsement of the National Gender Policy as reference framework.

Burundi has been actively promoting and advancing women’s participation in decision-making bodies, as well as the gender-mainstreaming into

national instruments such as the Constitution of Burundi and the Persons and Family Code. The NDP highlights the following facts:

- The National Platform for disaster risk prevention and management does not integrated gender aspect sufficiently, and it counts only two women out of 7 members.
- The community involvement and civil contribution remain poor.

The NDP includes gender-disaggregated statistics, and it takes account of the necessary measures and approaches to increase the role of women and other vulnerable groups.

The gender consideration spans across the plan document, and women are duly mainstreamed in each chapter from vulnerability assessment to the action plans, and the definitions of women in the management. The NDP is fully aligned with the National Gender Policy, and relevant recommendations are incorporated. The NDP is elaborated in a way that national and international instruments, guidelines, principles, and approaches are integrated.

Room for improvement

Three action points are recommended to complement the NDP. Such points would make the NDP up-to-date and ready for implementation: definition of sphere standards, prioritization of water supply for all people at affordable price and required actions at various phases of drought.

Sphere standard consideration

The NDP provides some information on the minimum humanitarian standards, but the narratives are patchy. The plan details the chapters in a stakeholder-disaggregated manner, with reference to women, youth, and

other vulnerable groups. The NDP also illustrates the historical occurrence of drought events and their recorded impacts. Such information can signal the efforts towards the systematic application of sphere standards. The sphere standard consideration is not elaborated as single-standing narrative and information, and this feature makes Burundi similar to other NDPs in which this aspect is silent. Therefore, a number of actions are required:

- Review and map the facilities to meet the minimum standards in drought-prone and high-risk areas (water supply, sanitation and hygiene promotion, food security and nutrition, shelter, settlement and non-food items, health action);
- Assess how the protection principles and core standards can be fulfilled in communities in vulnerable areas, with special focus on those most vulnerable;
- Annex the relevant indicators to the NDP, as a protocol for the implementation of sphere standard during drought event; and
- Pilot the protocol made up of indicators using historical events and highlight the needs for improvement.

Prioritization of water supply for all people at affordable price

Water availability is at the heart of drought preparedness. The early action requires the prior knowledge of water resources and their interaction with drought and its impacts. However, access to water cannot be selective or exclusive. Prioritization and definition of the water allocation rules during drought must, thus, be grounded on historical data and continuous monitoring. This can, then, lead to the conclusion how water supply should be distributed amongst people, and how cost of water should be minimized. Affordable price does not refer to the price of water, but rather the cost of

water service, i.e., conveyance, pumping, storage etc. Such infrastructure must be operated in a cost-effective way, and management cost should next exceed the solvency margin. The NDP must construct a strategy on how this issue will be resolved:

- Revisit the sub-chapter on the monitoring of water, and provide quantified analysis of the existing water resources in map format;
- Review the management practices of water for different purposes, i.e., potable, irrigation, livestock, industry etc., and define the main issues related to profitability;
- Provide scenario analysis of water use during drought, and define the most vulnerable communities; and
- Craft a strategy on inclusive water distribution during drought.

Required actions at various phases of drought

The NDP includes reference to different phases of drought and has explicit recognition of the phases. It iterates the importance to define the actions at each phase. The NDP also details the communication strategy pre-, during and post-drought, and depicts the responsible authorities at different phases. To complete the NDP, actions should be matched with the various phases. The following measures are proposed to achieve this:

- Review the narrative, and define the actions in bullet points as per the different phases of drought;
- Review the communication plan at each phases of drought, and match the authorities responsible for communication and implementation of actions;

- Define the pre-requisites of implementing each measure;
- Estimate the timeline of each response measure; and
- Strengthen the link between the phases of drought and roles of women.

Enhancing the National Drought Plan of Philippines

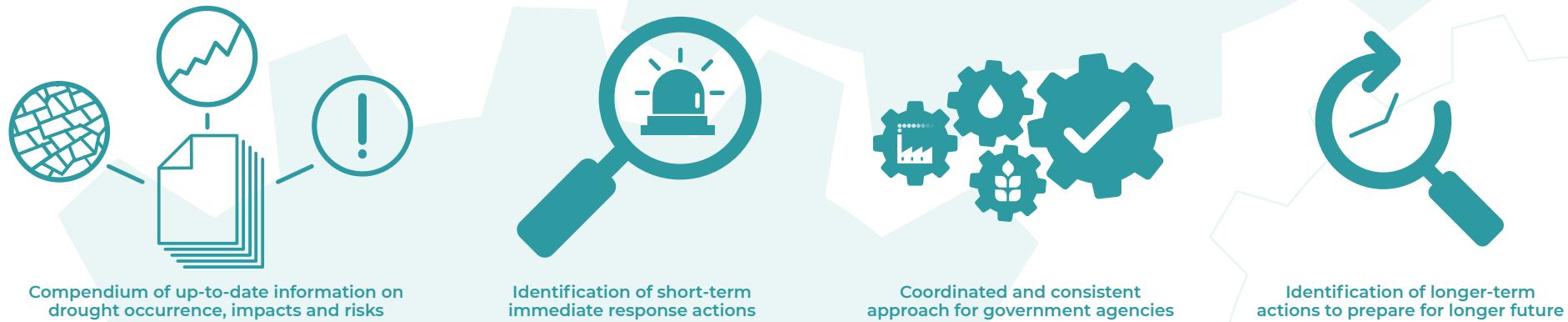
Overall performance

Unlike many tropical countries, the Philippines has been largely affected by recurrent droughts (Government of Philippines, 2019). Eleven major events have been recorded since 1968, averaging one considerable event

per 4–5 years. El Niño was the root cause of the high-magnitude events in 1982–1983, 1986–1987, and 1997–1998. The recent drought in 2015–2016 led to reported damages across 16 of the 18 regions in the Philippines. Accordingly, this event has been the most severe drought induced by El Niño so far. Drought vulnerability is compounded by insufficiently developed economy and underequipped subsistence agriculture. The multiple challenges and intensifying drought prompted decision-makers to participate in the Drought Initiative.

The NDP for the Philippines aims to document the risk of drought and outlines a series of approaches and actions, which the country can take to prepare for and increase resilience to drought. In its scope, the NDP of Philippines incorporate the three key pillars of drought risk reduction. The NDP defines four interlinked purposes (Figure 23).

FIGURE 23: PURPOSES OF THE NATIONAL DROUGHT PLAN OF PHILIPPINES



Source: Authors, based on National Drought Plan for the Philippines.

The multi-criteria assessment highlighted the strengths of the NDP of Philippines (Figure 24). Beyond the individual performance of the sections, one of the merits is the comprehensive and straightforward presentation of the plan as whole.

FIGURE 24: IDENTIFIED STRENGTHS OF THE NATIONAL DROUGHT PLAN OF THE PHILIPPINES



Source: Authors' own elaboration.

Almost all main criteria present moderately or highly satisfactory performance. The performance pattern is unique (Table 5). While investigating the compliance with requirements at main criteria level, the balance is positive. However, almost each main criteria have some sub-criteria that would benefit from additional information. In other words, the NDP has not overlooked any important information except gender consideration, and the provided baseline is all-encompassing.

TABLE 5: THE ASSESSMENT RESULTS OF THE NATIONAL DROUGHT PLAN OF THE PHILIPPINES

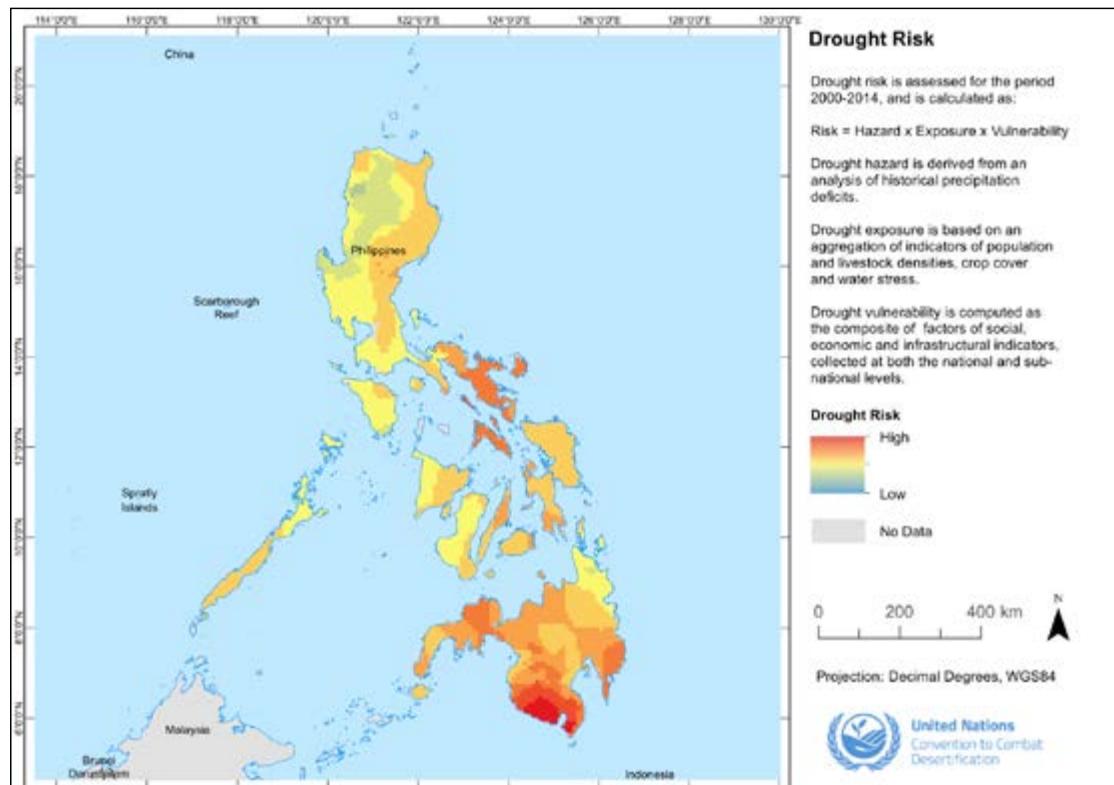
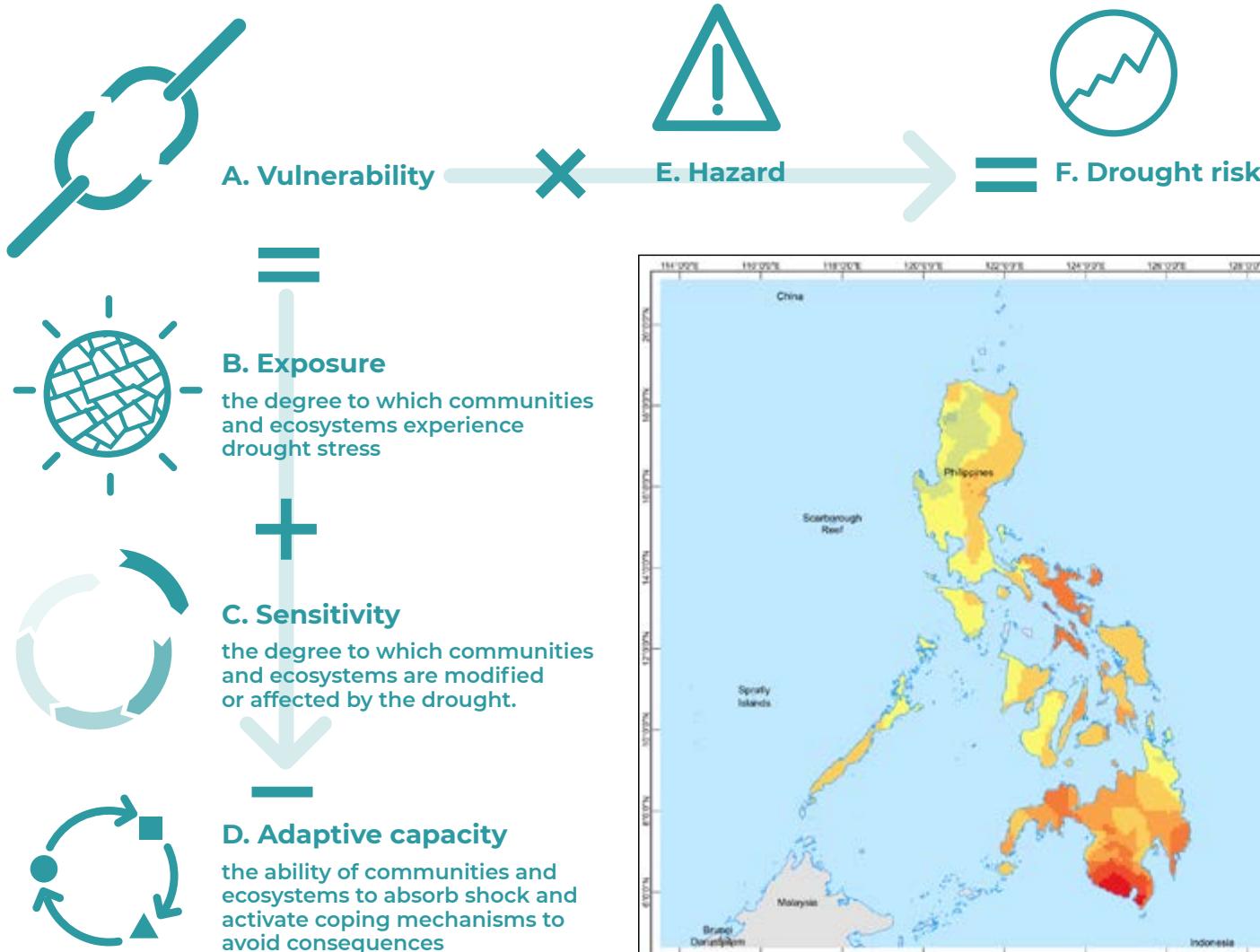
Monitoring, forecasting and impact assessment				Drought risk and vulnerability				
Drought indices	Drought monitoring, forecasting and data collection	Drought severity in all relevant sector	Drought impact assessment methodology	Drought risk and vulnerability assessment	GIS-based mapping	Drought risk areas and/or locations		
95%	100%	95%	0%	74%	52%	100%		
Gender considerations		Vulnerable people and sphere standard		Drought communication and response action				
Membership of task force	Reflection in NDP basic contents	Vulnerable people consideration	Sphere standard consideration	Drought communication protocol	Declaration of drought condition	Communication and coordination guidelines	Drought response actions	
0%	7%	64%	0%	88%	0%	80%	88%	
Drought mitigation and response action					Recommendations and implementation actions		Required actions at various stages	
National water resource monitoring and impact assessment	Development of new and alternative water resources	Water conservation practice, public education and awareness creation	Prioritization of water supply for all people at affordable price	Legislation and land use planning	Priority implementation actions	Future updates and revision	Pre-drought	During drought
67%	77%	67%	33%	100%	57%	77%	75%	67%
								Post-drought
								83%

Global benchmark

The content related risk and vulnerability assessment is critically important, as it directly relates to the second pillar of drought management. The NDP integrates this information from the angle of the theory. It, then, connects the theory with the ground-truth information and experiences. It also highlights risk assessment as a basis for setting priorities and developing actions, which together can prevent drought and mitigate drought impacts.

It links authorities with the responsibilities over risk assessment in order to emphasize on an inclusive targeting strategy. The section systematically presents the existing knowledge resources and results of previous research. The NDP builds the risk and vulnerability assessment around the definitions shown in [Figure 25](#).

FIGURE 25: CALCULATION OF DROUGHT RISK



Source: Authors based on the National Drought Plan for the Philippines, Government of Philippines, 2019; Carrao et al. 2016.

The risk and vulnerability assessment is supported by a suite of tools and methods, and historical data. It relies on GIS-based techniques and visual presentation. Several maps are prepared to investigate the risk and vulnerability starting from the key definitions of the drought risk: exposure, sensitivity, vulnerability, and hazard. The individual maps are integrated into a composite map, showing the drought risk. What makes this section outstanding is the disaggregation of analysis per sector. The vulnerability of agriculture sector is well-recognized in the NDP, and dedicated narratives investigates drought risk in the context of agriculture. The NDP explains the extreme vulnerability of agriculture through four indicators: access to irrigation, available soil-water holding capacity, average evapotranspiration, and average precipitation. The assessment highlights how easily agricultural productivity can devolve during drought.

Room for improvement

The comprehensive presentation of the NDP requires only one major correction related to the gender mainstreaming. Apart from the gender considerations, minor tweaks would make the plan more complete. Three action points are proposed to enhance the NDP: gender consideration, sphere standard consideration, prioritization of water supply for all people at affordable price.

Gender consideration in the membership of the taskforce

Gender-mainstreaming is a key, cross-cutting issue of all national priorities and plans, and NDP should not be an exception. Women integration should be approached from two different perspectives: women-disaggregated information and action plan, and women representation in the drought task force. Without sufficient emphasis on women, no NDP can be considered complete.

Similar to most of the NDPs, the NDP of the Philippines hardly touches upon gender considerations. Neither targeted information nor reference to the composition of task force is displayed in the document. Gender-related issues are mentioned only few times in the action plans, but no disaggregated statistics or information is presented in the background information. The revision of the NDP should follow the recommendations, which address the full gender-mainstreaming and women representation in the task force:

- Prepare complete gender assessment at national level, based on international and national guidelines;
- Align the NDP with national policies and strategies related to gender equality;
- Introduce gender-responsive approaches in the vulnerability and impact assessment;
- Define the role of women in the action plans, as well as the gain of women from proactive drought management;
- Mainstream women in all sections of the NDP;
- Prepare gender-sensitive stakeholder checklist;
- Identify gender focal points in all responsible organizations;
- Define the critical knowledge, with which women can contribute to the objectives of the NDP;
- Identify gender focal points based on the analysis and gender-differential knowledge;
- Prepare a responsibility matrix of female members, which covers all aspects of the NDP;

- Define the modality on how gender focal points are involved in the communication channel of the taskforce; and
- Prepare monitoring protocol on tracking the decisions of gender focal points.

Sphere standard consideration

Sphere standards are often overlooked during risk management, and even if some information is provided, this aspect is not contextualized and integrated. Sphere standards should be defined at all phases of drought (pre, during, and post). Like many other NDPs, the NDP of the Philippines has no reference to sphere standards, and these considerations should be built up from scratch. Therefore, the same protocol applies to the case of Philippines:

- Review and map the facilities to meet the minimum standards in drought-prone and high-risk areas (water supply, sanitation and hygiene promotion, food security and nutrition, shelter, settlement and non-food items, health action);
- Assess how the protection principles and core standards can be fulfilled in communities in vulnerable areas, with special focus on those most vulnerable;
- Annex the relevant indicators to the NDP, as a protocol for the implementation of sphere standard during drought event; and
- Pilot the protocol made up of indicators using historical events and highlight the needs for improvement.

Prioritization of water supply for all people at affordable price

The investigation of water availability is a critical issue in the Philippines, as imbalance between demand and supply is already forecasted in a very short

while. Adding to the difficulties, the management of water resources is fragmented, scattered across 31 agencies and governed by 7 legal frameworks. The NDP puts water resource management at the core of response actions. 5 out of 7 actions in response to drought are water related: rehabilitation of irrigation network, water rationing, intensification of leak repair programs, water quality monitoring, and water control through optimized hydropower generation. The current discord between the inefficient institutional set-up and the role of water in mitigation should be resolved through the following revision:

- Prepare analysis on water balance per sector, including urban, agricultural, and industrial water use;
- Define the hotspots of water-scarce areas, and differentiate human-induced and climate change-induced scarcity;
- Prepare an organizational chart of water management, preferably on an annotated map;
- Make recommendation on the reporting line, and define the communication means to connect the different authorities;
- Allocate responsibilities with specific scope of drought management;
- Collect information on the cost-benefit conditions of water supply as per management authorities;
- Match the outcomes of cost-benefit analysis with water-scarce areas; and
- Craft strategy on maintaining sufficient level of water service during drought.

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Annex 1: Detailed definitions of the multi-criteria framework

Background – additional criteria #1

Purposes, scope, goals, and objective

The logical framework of NDPs works towards the pre-defined purposes, scopes, goals, and objectives. In terms of purpose, the NDP discusses its dedication or devotion. It reflects on why it is needed to be in place. It sets out a guiding mechanism whereby government and stakeholders, both national and international, can effectively and systematically assess drought risks, vulnerabilities, and impacts, develop mitigation actions and programs as well as drought disaster response options/actions, including the mobilization of resources. In conclusion, it shows countries' preparedness to mitigate drought impact and make responses during drought disasters. In terms of scope, the NDP indicates what should be considered, and what is the extent of coverage. The scope indicates what the plan would cover in relation to drought and its adverse impact, detailing the geographical area, vulnerable communities and sectors, involvement of authorized institutions, and relevant stakeholders among others. The goal is the long-term positive impact that the plan intends to achieve. It is an achievable outcome that is generally broad and longer term and is expected to be shown after the NDP implementation. The objective of the NDP clarifies the path that is taken in order to attain the goal. It is a shorter term and defines measurable actions to achieve an overall goal.

Introduction of 10-steps process

The presentation of the 10-step process of planning mechanism is necessary to understand how the NDP considered the recommended planning steps. The model NDP suggested the reduction of 10 steps to 8 steps, which are considered mandatory during the planning. The demonstration of how the NDP complies with this process is key to understand the grounding.

Relationship with other plans and policies – additional criteria #2

National water laws The alignment of the NDP with national priorities, especially with water-related policies, strategies, plans, and laws is paramount. The alignment starts with the stocktaking of existing and foreseen national documents, which results in a list and synthesis of objectives. The alignment can be demonstrated through the assessment of the position/significance of drought in the given document. The alignment spans across the entire logical framework from means of action plan to goals and objectives. The alignment depicts how the NDP adopts the existing national documents. It also investigates the common focal points in the institutional arrangements.	Mitigation strategies and planning The NDPs take account of the existing impact mitigation strategies and planning results. The goal of the NDPs is not to craft a plan from scratch but to synthesize the knowledge and means in hands and make use of them. Most of the countries have already constructed different plans, strategies or policies on drought mitigation and planning. Leveraging and integrating the obtained results and recommendations into the NDP is a necessary step to make a comprehensive and integrated plan.
Importance of NDP Drought and drought risk management are positioned at different levels of the objectives and priorities of different sectors. The overall definition of the importance of the NDP is articulated as high-level objective and sector/ system-specific objective.	Access to safe water Access to safe water is a fundamental human right, and sufficient emphasis on this aspect cannot be overlooked. Review of the national progress on access to safe water is necessary to understand the existing situation and need for development. The situational analysis paves the way for the essential results of the planning, namely the action plan on drought mitigation and responses.

Overview of drought – additional criteria #3

Historical occurrence <p>Understanding the historical occurrence and trends of drought events provides lessons-learnt from the success and failures of drought management strategies. Description of the historical occurrence is a benchmark for future management strategies. Firstly, it provides an overview of the nature of drought events and their encountered impacts. It also shows valuable experience on what management issues should be strengthened in future to minimize the impacts.</p>	Understanding of drought <p>Definitions of drought are elastic. However, drought community has multiple and broadly stated definitions, i.e., meteorological, agricultural, hydrological, etc. Clarifications are required to understand how drought is perceived and which definition is applicable in the context of the country. Drought definitions are necessary to provide correct terminology across the document. Definitions aligned to the country context and historical occurrence make the NDP straightforward and well-grounded.</p>
Drought impacts by sector <p>Drought affects multiple sectors and systems at the same time. The sector-wise assessment of drought impact is required to understand the severity of the occurrence of drought. The presentation of drought impacts by sector describes the affected area (including ecosystems), communities, and economic activities. It gives a better understanding of the interconnectedness of drought impacts. It also showcases how drought impairs the productivity and performance of sectors. This multi-pronged approach establishes the priorities and the logical order of the action plan (UNCCD <i>et al.</i>, 2019).</p>	

Organization and assignments of responsibilities – additional criteria #4

Organizational overview <p>Drought must be managed through a multidisciplinary organizational mechanism. Good organizational setting responds to the “multi” nature of the drought and allows stakeholders to coordinate harmoniously. The concrete definition of actors and the establishment of reporting line are of key importance to manage drought across organizations with different mandates. The organizations of drought management involve stakeholders at all levels, from the grassroots to the high-level institutions. Organizational overview might involve non-conventional actors, such as academia and non-governmental institutes, to leverage all potential resources.</p>	Assignment of responsibility <p>Drought management involves many actors from different levels. While setting up the organizational hierarchy, the following questions are answered: who, where, when and what. Clearly defined responsibilities are mandatory to coordinate drought management. The definition includes reference to the alignment of responsibilities to streamline the roles and avoid redundancy. In most cases, responsibilities might be transferred to grassroots level.</p>
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Monitoring, forecasting and impact assessment – main criteria #1

Drought indicators and indices (score range: 0-2) <p>Indicators are meteorological, hydrological, or biophysical variables, such as precipitation, temperature, streamflow, groundwater and water storage levels, and soil moisture, describing the drought conditions. Indices are computed numerical metrics of drought severity, often using the combinations of meteorological, hydrological, or biophysical indicators. Indices provide quantitative information about the severity, timing, duration, and extent of a drought. Indicators and indices are applied to assess the drought event and eventually to trigger actions. Each country must define the indicators and indices, which are the most suitable to describe drought conditions in the country's context (WMO and Global Water Partnership, 2016).</p>	Drought monitoring, forecasting and data collection (score range: 0-2) <p>Data generation and collection are the prerequisites of early warning systems that aim to track, assess and deliver relevant, real-time or predicted information, concerning climatic, hydrologic and water supply conditions and trends. Early warning systems have generally both a monitoring (including impacts) and a forecasting component. The monitoring can include the integrated process of systematic data collection and process of parameters, i.e., precipitation, temperature, soil moisture, streamflow, snowpack, groundwater, impacts, etc. The forecasting function is incorporated to provide prediction of the probability of drought, using specified and context-tailored algorithms. Forecasting is paramount in increasing preparedness, as it gives lead time to stakeholders for responses, thus minimizing the drought impact risk (WMO and Global Water Partnership, 2016; United Nations Secretariat of the International Strategy for Disaster Reduction, 2007).</p>
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Drought severity in all relevant sectors (score range: 0-2)

Severity is the index to characterize the drought event based on duration, intensity, geographical extent, magnitude, affected communities, and other relevant parameters. Severity, called also ‘magnitude’, describes the accumulated deficit over the entire duration of the drought and its entailed impacts (Vogt et al., 2018). Severity considers both direct and indirect impacts on different sectors. Severity must be defined in clearly defined categories (i.e., the range from low to high) to measure the relative predicted damage. This can inform decision-makers on the magnitude of required intervention.

Drought impact assessment methodology (score range: 0-4)

Impact assessment methodologies are required to assess how droughts affect dimensions, sectors, areas, etc. (UNCCD et al., 2019). Drought is usually associated with several and distinct impacts that result from a reduction of water availability during a drought period or episode. Drought can directly affect a wide range of water-dependent users in different sectors. It has also spill-over or indirect effect on other sectors, i.e., on those who rely on hydropower. Therefore, the disaggregated, sector-wise assessment is required to obtain a comprehensive and complete impact assessment. Drought impacts can also be predicted if sufficient information is available prior to the occurrence, such as water availability, productivity of ecosystem, livelihoods, incomes, etc. Impact assessments must place emphasis on the rigor and appropriateness of the methodology to respond to context-specific drought event. As the definition of drought is dynamic and types of impacts vary widely, the approach and methodology framework must be clearly defined and correlated to the features of the application area.

Drought risk and vulnerability – main criteria #2

Drought risk and vulnerability assessment (score range: 0-5)

Drought risk is the likelihood of incurred damages and losses, often measured as the combined effect of hazard and vulnerability. Hazard is the likelihood of drought occurrence, calculated or predicted through the application of indices and indicators. The vulnerability is the degree to which a system is susceptible to or unable to cope and adapt (Carter et al., 2007; UNCCD et al., 2019). From the impacts of drought, vulnerability assessment derives the pre-existing factors, such as social, economic, political, physical and environmental factors that are superimposed onto, and exacerbate or mitigate such impacts.

Geographical Information Systems-based (GIS-based) mapping (score range: 0-2.5)

GIS-based analysis is a computerized method that analyses geographical data, such as vegetation, climatic parameters, land use, etc. It enables the understanding of drought vulnerable areas, observed impacts, and even risks by analysing the patterns and setting-up causal relationships. GIS-based approaches are preferred to make a comparative analysis spanning across the sub-national, national, or regional level, thus highlighting the geographical location of drought risk and vulnerability.

Drought risk areas and/or locations (score range: 0-2.5)

The geographical location defined by boundaries, where drought risk is suspected or observed, is the first step to map drought. The exact locations of droughts under different risk categories are the foundations of the NDP.

Gender consideration – main criteria #3

Membership of drought taskforce (score range: 0-3)

The defined balance in membership of drought taskforce between women and men must be clearly stated to understand whether women take roles, challenges and decisions as members. It also reflects on how women membership empowers actions geared towards the rights, access to and use of resources, learning, participation, decision-making, and resilience.

Reflection in the basic contents (score range: 0-7)

The degree of gender mainstreaming into the relevant narratives of the NDP can be assessed only if all parts of the NDP is gender-responsive. Each assessment, finding, intervention must be supported with gender-disaggregated information to make sure that women are duly represented. To make the NDP systematic and consistent from gender perspective, gender mainstreaming approach must be clearly described, and the approach must be reflected over the document.

Vulnerable people and sphere standard – main criteria #4

Vulnerable people consideration (score range: 0-5.5)

In order to maximize the coping strategies of those affected by disasters, mapping and acknowledging the distinct vulnerabilities, needs and capacities of specific groups are essential (Billing and Madengruber, 2005; Wolkin, 2019). While there are well-defined and universally accepted definitions of vulnerable groups, such as women, children, older people, disabled people, people living with HIV/AIDS, unaccompanied minors, and ethnic minorities, the term ‘vulnerable’ can be also relative in the context of the area and nature of the risk. It must be defined whether there is a policy that requires the execution of risk assessments and risk-reduction exercises for vulnerable people in NDPs areas.

Sphere standard consideration (score range: 0-4.5)

The minimum standards are defined by the Humanitarian Charter and Minimum Standards in Disaster Response (Sphere Association, 2018). The commitments should be described on how essential processes and organizational responsibilities to enable quality and accountability in achieving the minimum standards are guaranteed in case of drought event. All key response actions must be explained, and if available, the protocol of sphere indicators must be annexed.

Drought communication and response action– main criteria #5

Drought communication protocol (score range: 0-2.5)

The drought communication protocol provides information on drought-related disaster communication practices and procedures. This protocol is intended to provide guidelines for best practices. The purpose is to assist the communication-related activities, including communication within the community as well as the media and public. It is developed to provide guidance to officials with regards to delivering an effective, efficient, timely, comprehensive, and factual or reliable message before, during and after emergencies thus mitigating potential damages and health risks. All stakeholders should be aware of the communication mechanism to facilitate the emergency procedures.

Declaration of drought condition (score range: 0-2.5)

Disaster declaration is a formal statement by the nominated, responsible organization when the drought and its adverse impact as disaster is foreseen. Official declaration is called to alert all stakeholders, calls upon and propose the right interventions. Declaration must be triggered by certain conditions that indicate the high probability of the event. The responsible organization, triggers, communication channels, and outreach strategy are necessary information to support early action.

Communication and coordination guideline (score range: 0-2.5)

The scope of guideline reaches beyond the communication protocol, as it defines the strategy of harmonized communication and coordination to enact the implementation. It defines the allocated responsibilities amongst stakeholder to convey information and organize the multi-level coordination. This allows the provision of reliable and consistent information through a two-way communication in a timely and targeted manner.

Drought response actions (score range: 0-2.5)

The drought response actions are the backbone of the NDP, in which the preceding sections culminate. The framework of response actions to drought guides the interventions at each stage of the drought event. Response action framework is not equal to resilience, as it encapsulates the efforts, such as the provision of assistance or intervention to meet the essential needs of the vulnerable, affected communities and sectors (UNCCD, 2019). This involves both structural and non-structural measures, which can be used by decision-makers, sectors, and communities to reduce the impacts of drought. Priority must be given to policies and actions that diversify and modernize agriculture and broader economies, provides safeguards for land and water resources, improve understanding of drought risk, and build adaptive capacities. Many specific options are available for different economic sectors to rebalance supply and demand of water resources (based on different trigger levels), and better manage the land and biodiversity to enhance resilience to drought.

Drought mitigation and response action – main criteria #6

National water resource monitoring and impact assessment (score range: 0-1.5)

Account of national water resources, including the strategic reserves requires historical data and continuous monitoring. Most often, national water resource monitoring reflects on the water balance, contrasting the demand and supply. Scenarios are generated to measure the impact of drought on the account of water resources, under different trajectories. Impact assessment of drought on water resources shows the resilience and preparedness to mitigate the risk.

Development of new and alternative water sources (score range: 0-3)

The development includes the new construction, rehabilitation, upgrade of water infrastructure to improve access to conventional and alternative resources as strategic reserve. Development of water resources refers to the unexploited and available quantities.

Water conservation practice, public education, and awareness creation (score range: 0-3)

Provision of access to updated practices, knowledge and awareness is necessary to enhance water management and thus improve resilience, in light of the recent and future water balances. By more efficient water management, the probability of water scarcity and magnitude of drought impacts can be mitigated.

Prioritization of water supply for all people at affordable price (score range: 0-1.5)

The prioritization of water sources for multiple purposes to meet essential needs must be strategized without implying unreasonable cost. Increased cost of water would easily lead to a widening systematic inequality amongst stakeholders and communities. This would entail the risk of crowding out poor and vulnerable communities. Essential water demand must be satisfied equally for all, and prioritization of water supply must prove the approach to this.

Legislation and land use planning (score range: 0-1)

Policies and institutional mechanisms must be in place to enforce, account and protect land rights. The land planning provides different options, which includes the consideration of long-term economic, social and environmental objectives, thus potentially advising on risk-averse uses.

Recommendation and implementation actions – main criteria #7

Priority implementation actions (score range: 0-7)

Priority implementation actions refer to measures that are recommended to implement the NPDs in relation to the three pillars of drought management. The proposed priorities depend on the gaps and constraints identified for an implementation of the NPDs. They may be indicated for the short, medium, and long-term covering priorities in terms of political, institutional, and legal level; organizational and operational level; drought management action; financing; technologies.

Future updates and revision (score range: 0-3)

The iterative nature of planning requires the update, revision, and adjustment of plans according to the changes. Regular update and revision are vital to respond to rapidly changing conditions from both sides of cause and effect. It responds to the dynamics of drought and maintains the preparedness, while providing recommendations for future betterment.

Required actions at various phases of drought – main criteria #8

Pre-drought actions (score range: 0-4) Suite of pre-drought actions is required even before the onset of drought, which can be triggered by forecasting. The lead time to improve preparedness should entail several actions related to the mitigation of impacts. The actions should enhance the preparedness level under different, projected scenarios of disaster outcome.	During-drought actions (score range: 0-3) Suite of during-drought actions during the drought event should address the emerging needs and provide real-time response related to water and humanitarian issues.
Post-drought actions (score range: 0-3) Suite of post-drought actions should support the recovery and rehabilitation to strengthen communities and restore the losses. The action framework targets ‘at least as well off’ or ‘better off’ levels of conditions, compared to the pre-crisis period. Post drought action plan also includes evaluation of the pre-drought and during-drought actions to generate lessons learnt for future actions.	

The increasingly frequent and severe droughts prompted the global community to adopt more proactive and integrated approaches to reduce or neutralize the impacts. The paradigm shift called for an improved planning mechanism that puts emphasis on strengthening preparedness. In support of this process, the Drought Initiative, called by the Conference of Parties (COP) of the United Nations Convention to Combat Desertification (UNCCD), rolled out its programme on drought planning at national level. Showing the strong interest, 70 countries have already joined the programme to prepare their national drought plan.

The development of a multi-criteria assessment for the review of the plans is a necessary step to enable the implementation. This publication contributes to this overall goal from multiple objectives, including the presentation of a replicable framework to conduct regular reviews, the analysis of the submitted plans to identify the potential for further enhancements, the provision of recommendations on the options of enhancements, and the demonstration of case studies with successful planning methods to facilitate the global knowledge-sharing.

This publication is a knowledge product, prepared under the framework of the project “Enabling Activities for Implementing UNCCD COP Drought Decisions”, funded by the Global Environment Facility.



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