



DROUGHT, DESERTIFICATION, DISPLACEMENT AND MIGRATION

Can Nature Offer Part of the Solution?

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Madagascar Miza Tonety is a mother with 9 children. Because of the drought, she picks cactus fruits or brèdes to feed them.

Key Messages

- Drought, exacerbated by climate change and human impact, is an important contributing driver of migration and displacement, affecting particularly the poor and most vulnerable.
- Nature-based solutions, like agroforestry and sustainable agriculture, can be livelihood options that reduce the impact of drought and desertification while increasing people's well-being and resilience.
- Compounding crises – such as climate change, drought, migration – call for a holistic and integrated approach to resilience. Nature is one of the components to consider in this broader integrated approach, alongside social, economic, and political measures.
- Partnerships that involve multiple stakeholders, including environmental stakeholders, from governments to communities and local organizations, are needed to bridge science and local knowledge, remove policy barriers, provide finance, and drive systemic change at scale.

1. INTRODUCTION

Drought, exacerbated by climate change and human impact, is one of the causes of migration and displacement that, if not effectively addressed, will lead to greater socioeconomic and environmental vulnerability. This requires immediate action and profound change. Nature-based solutions, as part of a broader suite of options, can provide an efficient solution to reduce the impact of drought and desertification while increasing people's well-being. However, to date, the benefits of nature-based solutions have not been sufficiently recognized, whilst reactive, short-term methods are often resorted to.

To promote nature-based solutions that address drought and desertification, and that thereby contribute to reducing forced migration and displacement, we need to understand the root causes of these problems. In this context, it is important to understand exactly how drought and desertification are triggered and exacerbated, how they amplify the migration and displacement crisis among other drivers, how we can protect our soils using nature and sustainable land management, and what the needed economic, political, and social changes are to minimize current and future droughts and treat migration as an option rather than a must.

Natural droughts will continue to occur and might increase with climate change. But with nature-based solutions we can alleviate the anthropogenic factors and contribute to remediating drought, making it less severe and less frequent.

— Jonathan Davies, Global Drylands Coordinator, IUCN

This paper is the result of an event that took place on the 10th of November 2021 as part of the Development and Climate Days at UNFCCC COP26 (see information below). This paper will summarize the key points of discussion from the four expert panelists, representing environmental and humanitarian perspectives, from both practice and policy, in combating drought and desertification and associated migration and displacement.

“Drought, desertification, displacement and migration – can nature offer part of the solution”

An event at [Development and Climate Days](#) on 10th of November 2021

Speakers involved:

Louise Baker (*Managing Director, Global Mechanism of the UNCCD*)

Jonathan Davies (*Global Drylands Coordinator, IUCN*)

Ezekiel Simperingham (*Lead on Migration and Displacement, IFRC*)

Dr. Asha Mohammed (*Secretary General, Kenya Red Cross*)

Watch the recording [online](#).

This paper begins by talking about the effects of climate change and human activities on drought and desertification (Chapter 2.1). We then talk about migration and displacement and its impacts on affected communities (Chapter 2.2) and how drought and desertification are one of the drivers (Chapter 2.3). We then show how nature is a valuable tool in combating drought and desertification, including building on the example of work carried out by Kenya Red Cross (Chapter 3). Lastly, we discuss the necessary steps, best practices and lessons learned for implementing nature-based solutions as part of disaster risk management to address drought, desertification and related migration and displacement (Chapter 4).

2. DROUGHT AND DESERTIFICATION AS A DRIVER OF MIGRATION AND DISPLACEMENT

2.1 Drought and Desertification

Drought is a “prolonged dry period in the natural climate cycle that can occur anywhere in the world. It is a slow onset phenomenon caused by a lack of rainfall.” (WMO, 2022).

Land degradation is a “negative trend in land condition, caused by direct or indirect human-induced processes including anthropogenic climate change, expressed as long-term reduction or loss of at least one of the following: biological productivity, ecological integrity or value to humans.” (IPCC, 2019)

The difference between **desertification** and land degradation is geographic. Although land degradation can occur anywhere across the world, when it occurs in drylands, it is considered desertification. (IPCC, 2019)

Climate change is leading to an increase in extreme events and climate risks are becoming part of everyday life for an increasing number of people globally, especially for the poor and vulnerable. Climate change related rising temperatures and changing rainfall patterns lead to higher frequency, severity, and duration of droughts in many regions around the world. In 2020 alone, 18.2 million people were affected by droughts, making it one of the top three most common global natural hazards (alongside floods and storms) (CRED & UNDRR, 2021).

Besides climate variability and change, direct human activities, like unsustainable land and water management (monocultures, deforestation, unsustainable agricultural practices, exploitation of water resources etc.) lead to drylands becoming more arid and less productive (UNEP, 2017; IPCC, 2019). These two drivers, climate change and human activities are strongly intertwined, and increase the risk of severe socioeconomic and ecological impacts of droughts (UNDRR, 2021b). However, the damage and costs resulting from a drought are usually seriously underestimated due to widespread and cascading impacts, often not explicitly attributed to the drought (UNDRR, 2021b), migration and displacement being one of them.



Kenya Green belts in Dadaab refugee camp. © Kenya Red Cross

2.2 Migration and Displacement

As **climate migration** we understand: “The movement, within a State or across an international border, of a person or groups of persons, who are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, predominantly for reasons of sudden or progressive change in their environment due to climate change” (IOM, 2016)

As **disaster displacement** we understand: “Situations where people are forced or obliged to leave their homes or places of habitual residence as a result of a disaster or in order to avoid the impact of an immediate and foreseeable natural hazard.” (UNDRR, 2019).

Around 40.5 million new displacements were recorded in 2020 (see figure 1) (IDMC, 2021). In that year disasters, of which 98 per cent were weather-related events, triggered over three times more displacements than conflict and violence (IDMC, 2021). Many communities are affected by concurrent and consecutive disasters and/or the convergence of conflict and disasters leading to many people being displaced for a second or even third time, increasing and prolonging their vulnerability and leaving them with little time to recover before the next catastrophe strikes (IDMC, 2021; IFRC, 2021). Migration and displacement impose significant direct and indirect economic costs on developing countries, particularly low-income countries, as well as the host communities, places of origin and the society as-a-whole. This includes the costs and losses associated with health, shelter, education, security and livelihoods (Helgason, 2020).

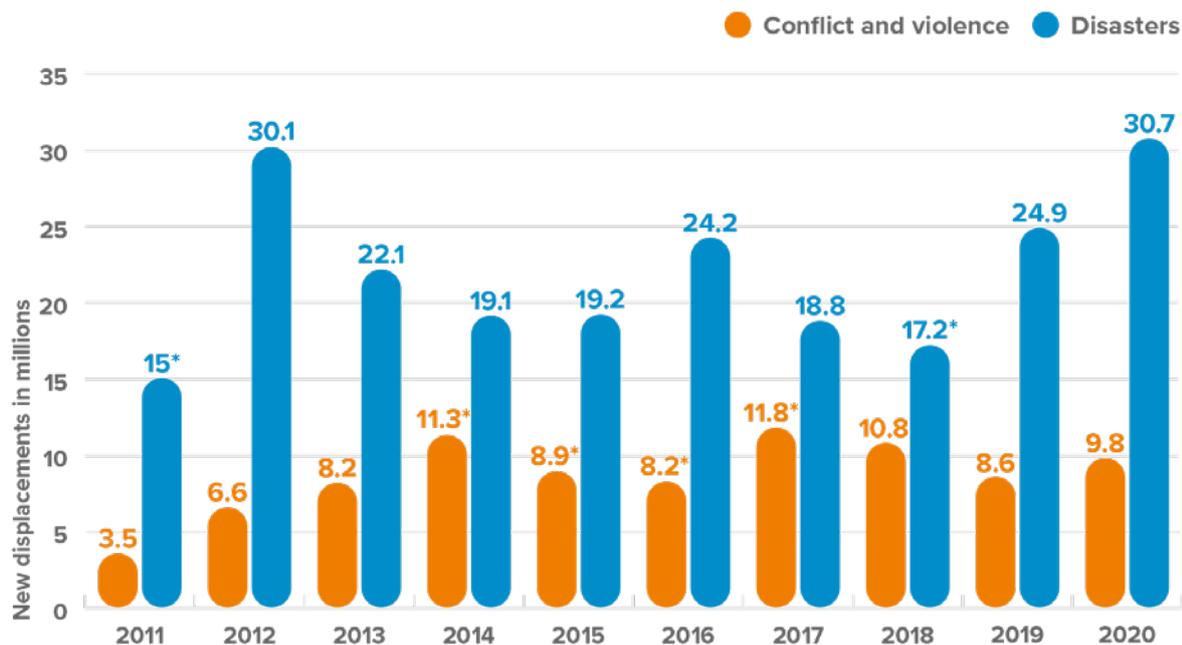


Figure 1: New displacements by conflict, violence, and disasters worldwide (2011-2020) Source: IDMC, 2021

2.3 Drought and desertification as a driver of migration and displacement

Climate change is leading to increases in the frequency and intensity of weather and climate risks, which in turn act as a driver of migration and displacement, alongside other drivers. These climate-related risks can be sudden-onset events (e.g. tropical storms, heavy rains, floods) or slow-onset ones (e.g. sea-level rise, salinization, desertification and drought) (FAO, 2017). These two types of climate-related risks create different forms of human movement.

Imminent risks lead to displacement, including on a large scale (CMS and Weerasinghe, 2021). Depending on recovery efforts and other factors, this can be short-term (CMS and Weerasinghe, 2021). At present, the vast majority of people who are moving because of the impacts of climate change are displaced within their own country (IFRC, 2021).

Desertification and drought on the other hand can lead to temporary, seasonal, or permanent migratory movements across international borders, spurred by the progressive depletion of living conditions, essential resources, and livelihood opportunities (CMS and Weerasinghe, 2021). It occurs at a smaller scale, and is generally less visible than displacement (CMS and Weerasinghe, 2021). Between the years 2008 to 2020, 2.4 million new displacements of people related to drought events were recorded (see figure 2).

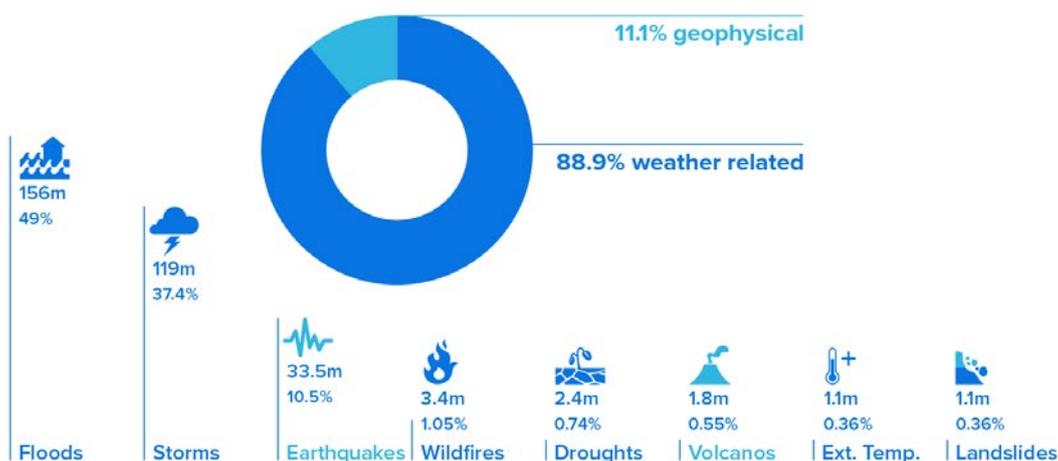


Figure 2: New displacements by disasters: breakdown by hazards (2008-2020) Source: IDMC, 2021

Climate change is not the only factor that drives displacement and migration risk (IDMC, 2021). Environmentally induced migration and displacement are interwoven with other drivers of migration and displacement. Climate change interacts with and exacerbates the drivers of human movement, forcing communities to face compounding crises (CMS and Weerasinghe, 2021; IFRC, 2021). Experts generally agree that decisions to move are affected by five broad categories of drivers: political, demographic, economic, social, and environmental (CMS and Weerasinghe, 2021). Within local populations impacted by the same environmental threats, vulnerability and likelihood to migrate are determined by a combination of factors, including socio-economic status, demographic characteristics (notably age and gender) and the migration, environmental, and resource management policies in place (IOM-UNCCD, 2019). Therefore, impacts of drought and desertification on migration and displacement depend not only on people's geographical exposure to risk, but crucially also on their pre-existing vulnerabilities, affecting particularly the poorest and most vulnerable (UNEP, 2017; CMS and Weerasinghe, 2021).

Summary of common misconceptions about migration and displacement:

“Persistent misconceptions surround disaster displacement, with serious implications for people, policy and responses. They include that

- disasters are natural, when human factors have a major role in how they play out;
- that disaster displacement is short-term, when in reality it often becomes protracted;
- that climate change will drive mass migration across borders when much displacement is small-scale and localized; and
- that small events are of little concern, when in fact they undermine people’s lives and threaten local development gains.”

— Source: IDMC, 2021

Although migration has historically been an important strategy for coping with drought and desertification, migration in its forced forms can also contribute to wider socioeconomic and environmental vulnerabilities (IOM-UNCCD, 2019). Poorly managed migration can increase vulnerability to climate risks, increase pressure on scarce natural resources, and exacerbate tensions between migrants and host communities over land tenure and resource rights (FAO, 2017). In this context, it is important to avert and minimize forced migration through policies that address its root causes, including drought and desertification (IOM-UNCCD, 2019), and reduce drivers of forced migration through livelihood options such as nature-based solutions.

“We have an opportunity here – we don’t have to wait until people move, we can and should work with communities now to identify risks, needs and to support communities to define their future based on their views and perspectives and make migration an option for them and not a forced decision.”

— Ezekiel Simperingham, Lead on Migration and Displacement, IFRC



Niger Women use spades and pickaxes to create slightly elevated crescents of dirt that will catch the rain, which then sinks into the ground, enabling grass they sow to grow and turn the now arid land into green pastures for cattle. © Mari Aftret Mørtvedt / Norwegian Red Cross

3. THE ROLE OF NATURE

Nature-based Solutions are „actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.“. (IUCN, 2016)

A natural hazard event such as a drought has the potential to turn into a disaster if the community or society is unable to cope with the impact, using its own resources (IUCN, 2016). Disaster risk reduction efforts, such as analyzing and managing the causal factors of disasters, can significantly reduce the likelihood of a natural hazard event turning into a disaster (Renaud et al, 2013). Nature-based solutions are a tool that can strongly support a community's risk reduction efforts.

“We are seeing farmers spontaneously adopting more sustainable land management practices globally. Many of them are motivated by the desire to revive their soils, which they see are barren of life and nutrients and parched. Sustainable farming practices increase soil life and soil carbon and they greatly improve soil moisture, and farmers become less exposed to drought and more resilient. The way farmers manage their land determines how water flows, and how it is stored, in those landscapes. Governments and businesses can develop incentives for sustainable farming that reflect the economic benefits of managing drought risks.

— Jonathan Davies, Global Drylands Coordinator, IUCN

Nature-based solutions “work with ecosystems, rather than relying on traditional engineering solutions, to adapt to and mitigate the impacts of climate change while improving sustainable livelihoods and protecting natural ecosystems and biodiversity” (IUCN, 2016). This can involve a range of different approaches and can often be used in conjunction with other, more conventional, measures (IUCN, 2016). The main advantages of nature-based solutions over conventional, “gray” infrastructure, which often has unintended negative environmental consequences, are the multiple benefits nature-based solutions provide and their cost-effectiveness (UNDRR, 2021a). Nature-based solutions are intended to support the achievement of society's development goals and ensure human well-being in ways that reflect cultural and societal values and enhance ecosystem resilience, capacity for renewal, and service delivery and are designed to address major societal challenges, such as climate change, disaster risk, food security, water security and health (IUCN, 2016).

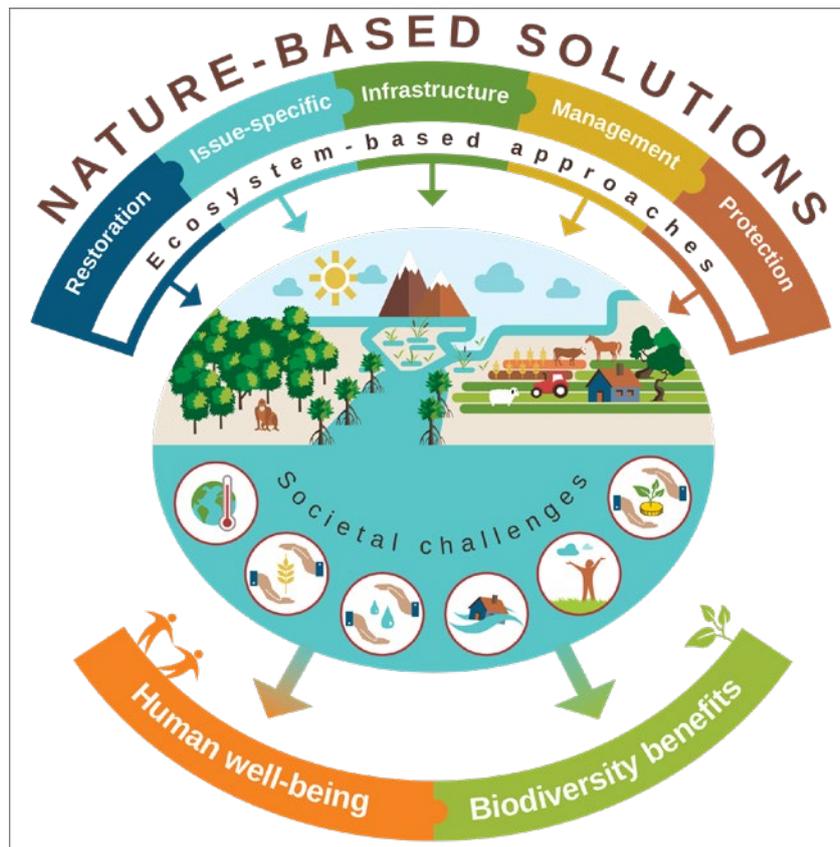


Figure 3: Nature-based solutions simultaneously support human well-being needs and biodiversity benefits through actions of protection, restoration, and sustainable management. Source: IUCN, 2016

Nature-based Solutions can have a part to play in contributing to addressing, directly and indirectly, causes of drought and desertification and related displacement and migration. We have solutions to dealing with drought, such as agroforestry, sustainable agriculture, and sustainable land management, which also increase community resilience. These solutions can directly contribute for example to land, water and plant conservation, thereby strengthening the food and water security of local communities. However, the value that working with nature can bring to addressing and reducing climate-related disasters and related forced migration and displacement, is often overlooked.

Examples of nature-based solutions to reducing the risk of drought

- **Agroforestry** is “the collective term for land-use systems and technologies in which woody perennials (e.g. trees, shrubs, palms or bamboos) and agricultural crops or animals are used deliberately on the same parcel of land in some form of spatial and temporal arrangement” (FAO, 2018).
- **Sustainable Agriculture** “conserves land, water, and plant and animal genetic resources, and is environmentally non-degrading, technically appropriate, economically viable and socially acceptable” (FAO, 1998).
- **Sustainable land management** is “the use of land resources, including soils, water, animals and plants for the production of goods to meet changing human needs while ensuring the long term productive potential of these resources and the maintenance of their environmental functions” (UNCED, 1992).

“The Kenya Red Cross is promoting integrated programming to disaster risk management, which includes nature-based solutions, to improve community resilience to climate-related disasters.”

— Dr. Asha Mohammed, Secretary General of Kenya Red Cross

The Kenyan Red Cross is active in the field of environment and climate change adaptation, helping to address the interlinked challenges of disaster risk, sustainable development, and climate change. The main objective is to protect communities and improve the capacity of vulnerable populations to adapt to increasingly climate change, whilst strengthening livelihoods and the local economy. Kenya Red Cross has pursued and promoted holistic approaches to disaster risk reduction that integrate climate change adaptation and environmental management approaches, including nature-based solutions. This has entailed leveraging partnerships and investing in expertise, bringing in environmental and climate expertise into the organization. Examples include:

- **Climate smart agriculture approach in Garissa County.** The project aimed to build resilience through disaster management and climate change adaptation. Specific activities included:
 - » Creating and enhancing innovative approaches, methodologies and activities that address climate change issues and disaster risk.
 - » Addressing food insecurity issues resulting from climate change and climate variability as well as supporting farmers through climate-smart agriculture.
- **Establishment of green belts around the Dadaab refugee camp.** The Kenyan Red Cross established green belts in environmentally degraded areas requiring intensive ecological rehabilitation in the immediate vicinity of the camp. This approach prevents destruction by livestock, allows for the establishment of natural vegetation as a source of livelihoods, and promotes stakeholder ownership. A total of 12 greenbelts and 3 orchards totaling 104 hectares were established and over 200,000 native trees were planted. Native trees are preferred due to their adaptability to harsh environmental conditions and benefits to the local community. The work in refugee camps is done with refugees and the host community, building capacity so that they can continue some of this work in the camp, and if refugees return home, they can continue to apply their skills there. Some of these approaches in more detail:
 - » **‘Green belt’ enclosures:** The green belts are a mixture of agroforestry practices. Indigenous trees, fruit trees and vegetables are planted within the same plot of land. Natural regeneration is also promoted.
 - » **Tree nurseries:** Producing tree seedlings of indigenous tree species and some exotic species
 - » **School fruit orchards:** Fruit trees are planted in a fenced off section of the school compound. The school children help care for the trees and the fruits supplement their diet. The orchard is also used as a learning center.
 - » **Tree planting around homesteads:** Each homestead is given tree seedlings to plant and manage.
 - » **Fodder grass planting:** Alfalfa grass has been planted on about 34 hectares to provide fodder for the community. The grass is maintained using a pivot irrigation method supported by a five million liter water pan that has been constructed.

4. THE WAY FORWARD

We are facing increased climate change, increased drought and desertification, and an increase in related migration and displacement. These complex and interwoven challenges need integrated solutions, where nature has a part to play. This section identifies some initial proposed next steps, best practices and lessons learned in addressing drought and desertification as a cause of migration and displacement, and the role nature can play.

Compounding crises call for a holistic and integrated approach to resilience. It is not a simple causal link between drought and someone's movement. We need to better understand, and tackle, the complex factors of migration and displacement. If the causes are interlinked, so too can the solutions be interlinked. Nature is one of the components to consider in this broader integrated approach, alongside social, economic, and political measures.

“It is not enough to just look at one aspect of migration and displacement. If we look at the broader picture of vulnerability and resilience there are many aspects that influence it. From urbanization to different levels of population growth, human rights issues, political structure and systems in place, levels of governments, ability to have support at the local level etc. This calls for a holistic approach.”

— Ezekiel Simperingham, Lead on Migration and Displacement, IFRC

Partnerships that involve communities and local organizations can connect key stakeholders and drive policy engagement to reduce vulnerability and increase resilience. Relevant actors and stakeholders need to plan and implement programs that work with nature together. Regular funding and partnerships can help increase knowledge and insights by linking science to local and traditional knowledge, taking much-needed action on gender equality and youth inclusion, and actively working with governments to break down silos, remove policy barriers, and drive systemic change at scale.

“An integrated approach to this issue is critical. We cannot look at this as a solely siloed issue. We need to bring different perspectives and levels of expertise together. We need to connect horizontally but also vertically.”

— Ezekiel Simperingham, Lead on Migration and Displacement, IFRC

“This issue needs the effort from all relevant actors. [Referring to Kenya Case Study:] Local communities, local organizations, refugees and host communities, scientists and technical people to support in guidance.”

— Dr Asha Mohammed, Secretary General, Kenya Red Cross

Proactive multi-stakeholder planning. When it comes to building resilience to drought, it is important to work proactively, planning before a disaster occurs rather than reacting to risks that have happened. Looking ahead disaster risk should be reduced, and livelihood resilience strengthened, with nature playing a role. This should involve various ministries and stakeholders to take action before disaster strikes.

We need to move to more proactive planning for drought e.g. early warning systems, national approaches and integrated planning across ministries. Currently a siloed approach is used in response to droughts happening. We need to think: what are we going to do better next time?

— Louise Baker, Managing Director, Global Mechanism of the UNCCD

It highly depends on where you live and how resilient your society and government are. In certain jurisdictions (e.g., Australia) they hit the worst drought ever, but they are not as vulnerable to drought. Systems are available to compensate people, deaths can be prevented. We need to make sure that these support systems are available everywhere.

— Louise Baker, Managing Director, Global Mechanism of the UNCCD

Compounding crises call for a holistic and integrated approach to resilience, where nature has a key part to play. We have many of the solutions available that we need to deliver at scale and successfully build drought resilience – including nature-based solutions. Partnerships and proactive multi-stakeholder planning is required, including environmental stakeholders, from governments to communities and local organizations, to drive systemic change at scale. Together, we can strengthen communities’ resilience against drought and desertification and associated migration and displacement.

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SOURCES

- CMS and Weerasinghe, S. (2021) 'What We Know About Climate Change and Migration', (February).
- CRED & UNDRR (2021) '2020 The Non-Covid Year In Disasters', p. 8. Available at: <https://www.undrr.org/publication/2020-non-covid-year-disasters>.
- FAO (1998) *Dimensions of need*. Available at: <https://www.fao.org/3/u8480e/u8480e00.html>
- FAO (2017) 'Migration, Agriculture and Climate Change: Reducing Vulnerabilities and Enhancing Resilience', pp. 1–20.
- FAO (2018) 'Committee on Agriculture – Update on the Global Soil Partnership, including the International Code of Conduct for the Use and Management of Fertilizers', *Science*, (July), pp. 2–3.
- Helgason, K. (2020) 'The economic and political costs of population displacement and their impact on the SDGs and multilateralism', *DESA Working Paper*, (167).
- IDMC (2021) 'Global Report on Internal Displacement 2021: Internal displacement in a changing climate', *GRID 2021*. Available at: <http://www.internal-displacement.org/global-report/grid2019/>.
- IFRC (2021) 'Displacement in a changing climate', pp. 1–60.
- IOM-UNCCD (2019) 'Addressing the Land Degradation – Migration Nexus: The Role of the United Nations Convention to Combat Desertification', pp. 1–50.
- IOM (2016) 'Warsaw International Mechanism United Nations Framework Convention on Climate Change Action Area 6 on Migration Displacement and Human Mobility Warsaw International Mechanism Executive Committee call for submission Action Area 6: Migration, Displacement a'.
- IPCC (2019) *Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. doi: 10.1002/9781118786352.wbieg0538.
- IUCN (2016) *Nature-based Solutions to address global societal challenges*.
- Renaud, Fabrice G. Sudmeier-Rieux, Karen Estrella, M. (2013) *The role of the ecosystem in disaster risk reduction / edited by Fabrice G. Renaud, Karen Sudmeier-Rieux, and Marisol Estrella*. Tokyo, Japan: United Nations University Press.
- Tallaksen, L. and Van Lanen, H. (2004) 'Hydrological drought: processes and estimation methods for streamflow and groundwater', *Developments in Water Science*, 48.
- UNCED (1992) 'United Nations Conference on Environment and Development, Rio de Janeiro, Brazil', in.
- UNDRR (2019) 'Disaster Displacement: How to Reduce Risk, Address Impacts And Strengthen Resilience'.
- UNDRR (2021a) 'Nature-Based Solutions for Disaster Risk Reduction – Words Into Action', p. 132.
- UNDRR (2021b) *Special Report on Drought 2021*.
- UNEP (2017) *Frontiers 2017 – Emerging Issues Of Environmental Concern, UN Environment*.
- WMO (2022). Retrieved online on 4th February, 2022 <https://public.wmo.int/en/resources/world-meteorological-day/previous-world-meteorological-days/climate-and-water/drought>