

– Drought Risk Management –
Practical experience from the German Development Cooperation

list of contents

List of acronyms	4
List of figures	5
Part 1.: Introduction.....	6
1.1. Drought related projects of German Development Cooperation.....	6
1.2. Survey design	7
1.3. Survey constraints	7
Part 2.: Project Frameworks	9
2.1. Relevance & target areas	9
2.2. Target groups & sector focus	10
2.3. Cooperation & inter-sectoral focus	11
Part 3.: Drought Risk Management Tools	13
3.1. Preparedness	14
3.1.1. Monitoring and early warning	14
3.1.2. Vulnerability and risk assessment	16
3.1.4. GIZ-sample project: Zambia	18
3.2 Mitigation measures	19
3.2.1. Biophysical and infrastructural interventions	19
3.2.2. Socio-political interventions	22
3.2.3. GIZ-sample project: Ethiopia	24
3.3. Response and recovery	25
3.3.1. Re-active measures	25
3.3.3. GIZ-sample project: African Risk Capacity	26
Part 4.: Summary and Outlook	27
4.1. Summary of findings	27
4.2. Voices from the field and new questions	28
Annexes	29
Annex 1: Project overviews	29
Annex 2: Questionnaire	32
Annex 3: Glossary	39

list of acronyms

AA	German Federal Foreign Office
AWARE	Accelerate Water and Agricultural Resources Efficiency
AU	African Union
BMU	German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety
BMZ	German Federal Ministry for Economic Cooperation and Development
CBD	Convention on Biological Diversity
CDI	Combined Drought Index
CRM	Comprehensive Risk Management
DIE	German Development Institute
DRM	Disaster Risk Management
EC	European Commission
EU	European Union
FAO	Food and Agricultural Organization
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IGAD	Intergovernmental Authority on Development
IDMP	Integrated Drought Management Programme
IOD	Indian Ocean Dipole
IGAD	The Intergovernmental Authority on Development
IWG	Intergovernmental Working Group on effective policy and implementation measures for addressing drought under the UNCCD
KfW	Kreditanstalt für Wiederaufbau (here we refer to the KfW Development Bank)
MARISCO	Management of vulnerability and risk at conservation sites
NBA	Niger Basin Authority
NGO	Non-Government Organization
SADC	South African Development Community Reduction
SFDRR	Sendai Framework for Disaster Risk Reduction
SEWOH	Special Initiative "One Word - No Hunger"
SMDI	Soil Moisture Deficit Index
SPI	Standardized Precipitation Index
SRI	Standardized Runoff Index
UNCCD	United Nations Convention to Combat Desertification Reduction
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VAM	Vulnerability Assessment
WFP	World Food Programme
WRM	Water Resource Management

list of figures

fig. 1.: Overview table	9
fig. 2.: Drought relevance	10
fig. 3.: Project focus	11
fig. 4.: International knowledge exchange	12
fig. 5.: Drought risk management focus	13

Part 1.: Introduction

1.1. Drought related projects of German Development Cooperation

Droughts are becoming more frequent and more intense worldwide. The effects of droughts on the population are highly dependent on environmental and socio-economic factors. Developing countries are therefore particularly hard hit.

The GIZ sector project *Soil Protection, Desertification, Sustainable Land Management* is supporting the German Federal Ministry for Economic Cooperation and Development (BMZ) as German National Focal Point to the United Nations Convention to Combat Desertification Reduction (UNCCD). In a survey conducted in May 2020 the project gathered practical experience from German development cooperation on drought risk management and drought-related tools. This information shall feed into the recently created Intergovernmental Working Group on effective policy and implementation measures for addressing drought under the UNCCD (IWG).

Building on the results it is furthermore planned to:

- develop knowledge products to showcase practical experience from partner countries of German development cooperation
- feed information into the process of the 2021 Special Report on Drought as part of the Global Assessment Report on Disaster Risk Reduction under the United Nations Office for Disaster Risk Reduction (UNDRR);
- foster knowledge transfer among projects of German development cooperation.

To gather practical experience from partner countries, bilateral projects funded by BMZ, the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) and the German Federal Foreign Office (AA) that are implemented through GIZ and the KfW Development Bank in partner countries were contacted and asked to fill out an online questionnaire.

A portfolio analysis done by GIZ identified projects operating in drought prone areas. Building on this analysis and elaborating and further exploring with colleagues from GIZ, KfW and the funding agencies 69 projects in partner countries of the German development cooperation were pre-selected. 27 of which replied, equaling a response rate of 39%. This response rate during COVID-19 lockdown and in such a detailed survey, leads to the conclusion that the topic is relevant to many projects. Although civil society organisations are key for drought management and resilience building, this survey focused solely on bilateral projects. Therefore, initiatives funded through mechanisms of development cooperation that directly engage civil society actors, alike any NGOs that are working on the ground in the respective countries are not part of this report.

Since drought is relevant to many sectors, yet there is no sector explicitly responsible for drought, drought-related projects had to be identified manually and with the help of many for the survey. Decisive pre-selection criteria were: partner countries of development cooperation; rural context; and arid, semi-arid, or drought-prone regions.

Development cooperation only makes up a fraction of drought-related measures in affected countries. This report can therefore only serve as one of many puzzle pieces to enrich the work of the UNCCD and UNDRR with practical experiences. Being by no means representative or comprehensive in its nature, this survey is nonetheless, to the best knowledge of the authors, the first of its kind that exclusively focuses on the multiple dimensions of droughts in development cooperation. The survey was implemented for 39 days, from 02.04.2020 - 11.05.2020.

1.2. Survey design

The survey was structured according to the drought risk management tool developed by the UNCCD, the Drought Toolbox, composed of the following threefold structure: 1. Monitoring and Early Warning; 2. Vulnerability and Risk Assessment; 3. Risk Mitigation Measures.

Furthermore, questions targeting general facts about the individual projects' frameworks, forms of cooperation, research and migration were included. A total of 38 questions were there to be answered, often in the form of multiple-choice, but also with ample opportunities to provide more nuanced insights through writing. All survey questions are included in Annex 2.

In accordance with European data protection standards, the survey was answered anonymously and references to individuals involved were deleted before being processed. Reference to the GIZ and KfW-internal project numbers allows identifying the project as such.

1.3. Survey constraints

Before we get to the results, we want to briefly pause and critically reflect on some inherent constraints to the survey design and implementation.

First, despite the anonymous layout, we cannot exclude the possibility of bias, since the survey was conducted by an independent third party operating outside of the German Development sphere. In addition, there are no built-in mechanisms to cross-reference the validity of the answers, beyond general project descriptions available on the web.

Secondly, regarding structural layout and content of the questions asked, it is noteworthy that "recovery and response" activities as part of a holistic drought cycle management setup received less attention in comparison to proactive measures. This is understandable from the point of view of longer-term bilateral projects, traditionally operating outside of the recovery dimension. Although the German development cooperation also supports interventions mainly focusing on response and recovery such as humanitarian aid as well as transitional development assistance.

Another constrain is related to the omission of questions targeting measurable outputs as well as the negative impacts of drought risk management originating from political frameworks and power constellations, regardless of scale. There is also no differentiated analysis of conflict lines related to project implementation, be it economical, political or social, enabling us to see more clearly the socio-political fault lines in combating droughts effectively.

Lastly, on a technical level, there have been notable computing difficulties related to two answer fields in one question (C.10) that focus on the role of capacity building, social protection/risk transfer schemes as one form of drought-related measures, making it difficult to come to a concluding statement there. In combination with user-interface complications for one respondent, a programming error as well as a compatibility issues can explain more than 90% of *error notifications*, cells without clear output values assigned to them.

Part 2.: Project Frameworks¹

In the following main body of the survey analysis, we will first look at the project framework, which includes target areas, drought relevance, focus groups, sectoral focus as well as modes of collaboration. In a second step, we will move to a closer analysis of specific drought risk management tools that are being employed.

2.1. Relevance & target areas

Responses have come in from numerous countries across the globe. Two factors likely drove the notably high response rate for projects situated in Africa. Firstly, no other continent receives more focus (and monetary allocations) through German development assistance. Secondly, the overwhelming majority of contacted projects have been situated in Africa, Americas and Oceania not being surveyed.

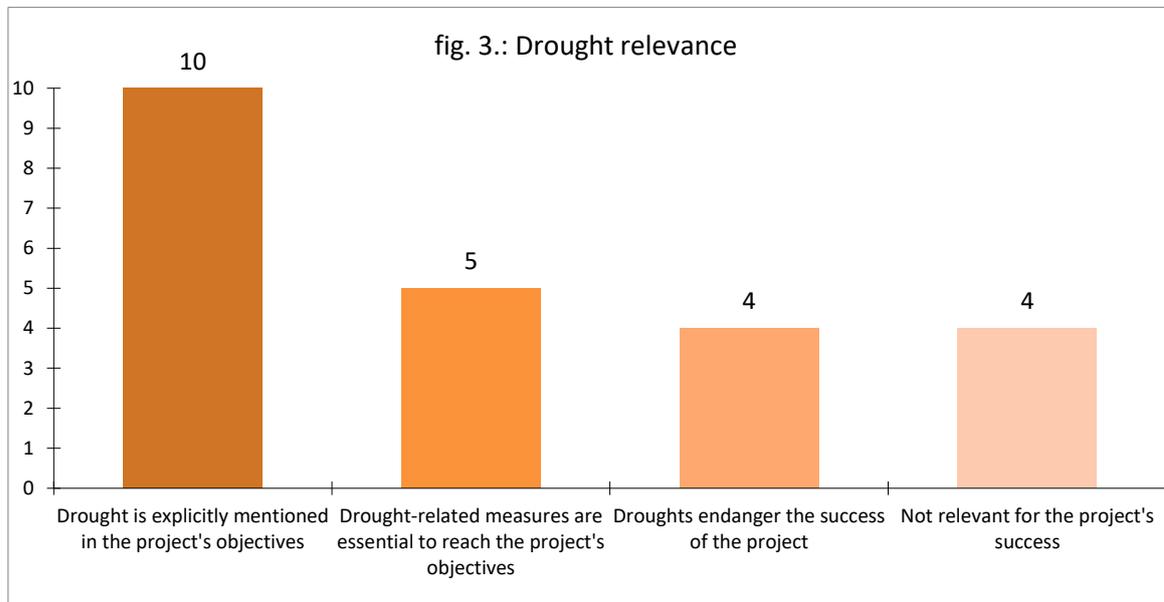
Northern Africa	Sub-Saharan Africa	Europe	Asia
Morocco	Burundi	Albania	Cambodia
	Chad	Kosovo	Laos
	Djibouti	Montenegro	Thailand
	Ethiopia	North Macedonia	Turkmenistan
	Kenya		Uzbekistan
	Mali		Vietnam
	Mozambique		
	Namibia		
	Niger		
	Nigeria		
	Somalia		
	Sudan		
	Zambia		

fig. 1.: Response country overview (including bilateral projects operating in one single country each as well as regional programmes operating in more than one country)

It is important to mention that the country responses listed for Europe and most of Asia came in the form of regional associations, operating in a trans-boundary manner, such as the Mekong River Commission. In addition, also one GIZ support project for the Intergovernmental Authority on Development (IGAD) responded to the questionnaire, an organization of states in Northeast Africa based in Djibouti.

¹ answers from question: 2 -9, 32-38

In terms of drought-relevance: Although drought is not part of the objectives of one third of the replying projects, it can still jeopardise the success of the projects. Only 16% of the projects operating in drought-prone areas reported that droughts would have no impact on the success of their project. On the contrary, 46% of all projects explicitly mention countermeasures on droughts as part of their mission objectives, for more than 80% of all projects drought are explicitly mentioned in the projects objectives.



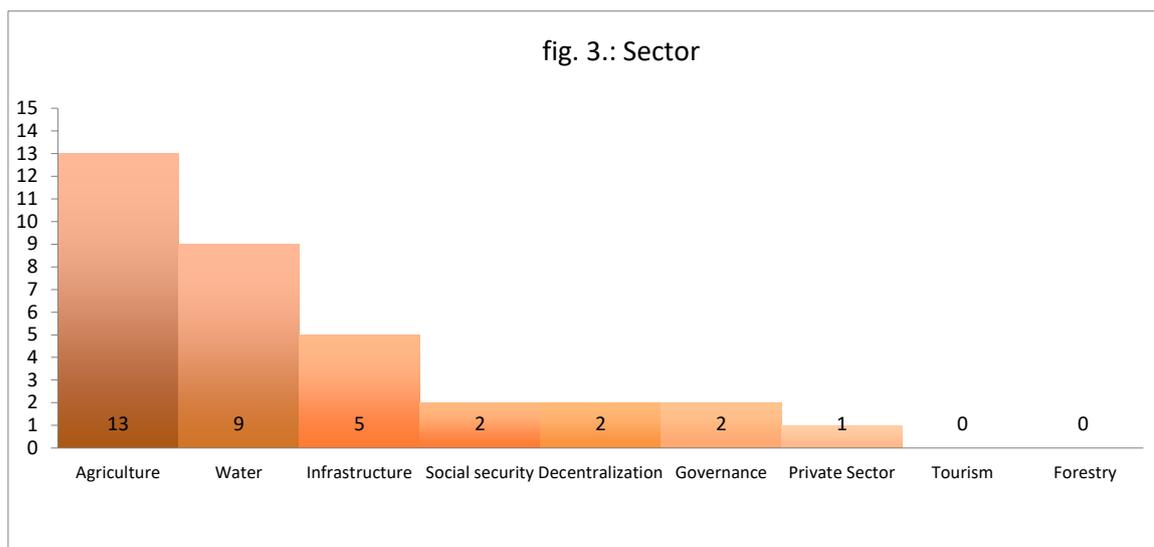
To ask more precisely, what is the primary focus of those fifteen projects that directly engage with droughts in one way or another? Nine of these projects focus on implementation measures on the ground in the broadest sense. Two deal with finance aspects and four with the implementation of institutional coordination of frameworks. We will get more background information on them in the next main chapter of this report.

2.2. Target groups & sector focus

According to the available sampling, subsistence farmers compose the primary target group of German development cooperation, followed by policy-makers and civil society organizations. The private sector plays a rather marginalized role in the surveyed projects.

Projects are operating on all levels: from local, subnational and national (six projects each) as well as international level (4 projects). However, most projects operate with focus of at least two levels. None traverses all spatial categories, from the very local to the international. Only one project marked three spatial categories as their operational range, from international to national to subnational/district level.

When it comes to sectoral focus, there is a clear emphasis on agriculture, with thirteen projects operating in that field. It is closely followed by the water (nine) and infrastructural sector (five). All projects engaged in drought management (15) are at least operating in two sectors simultaneously.



2.3. Cooperation & inter-sectoral focus

What about inter-sectoral issues? As for gender, to start with, almost 50% of the projects with drought objectives incorporate gender-sensitive components. Digital tools are used by almost one third. Direct reference to disaster risk mitigation measures are utilized by 25%. However the greatest, cross-sectorial connectivity is found in measures for climate change adaptation and mitigation with 90% of those projects with a specific drought-focus. According to this survey, little attention is given to human rights. One responder added *short-term employment schemes* for farmers and another one *cross border collaboration with IGAD*.

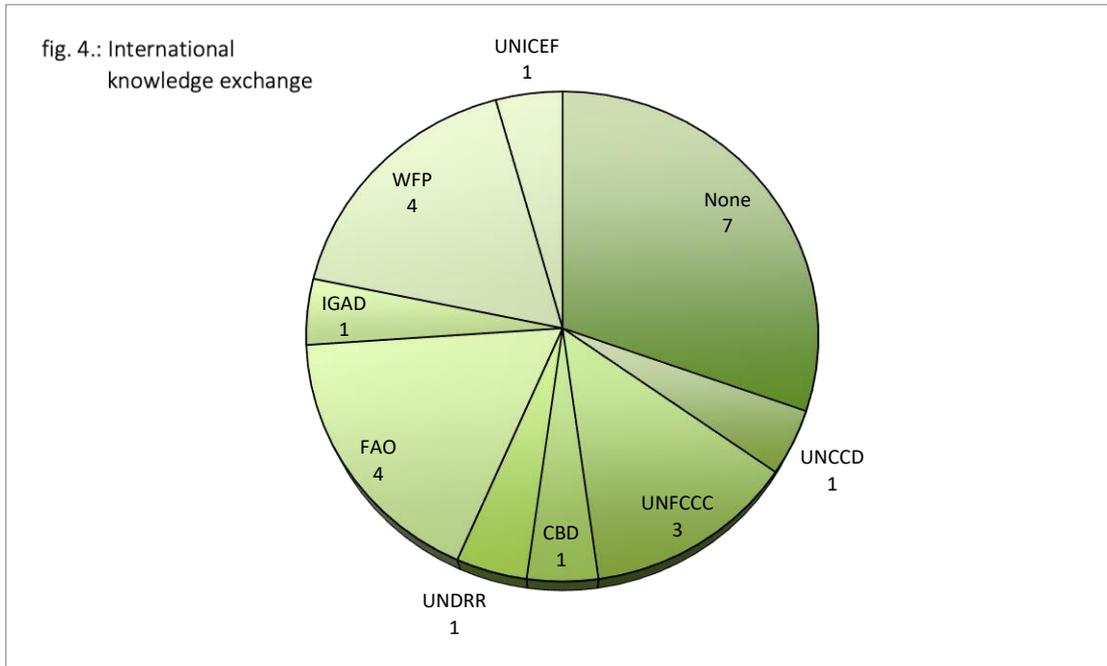
Asked about what kind of entities they collaborate the most, those projects with specific drought focus have a wide spectrum of interfaces, with an average of three to four different collaboration partners from various fields. To be more specific: eleven collaborate with NGOs (73%), seven with multilaterals (46%), five with research institutes (33%), five with self-help groups (33%), five with regional organization (33%), as well as five with others (with special refers to IGAD for those projects operating in northeast Africa). In most cases national or international research organizations are active in the same geographical region as the German development project.² In addition, almost every other project also fosters exchange with projects working in the same field. Predominantly, these are other GIZ or World Bank projects as well SEWOH initiatives.³

When it comes to sharing information and exchanging experiences with internationally operating organizations, the following graph gives a comprehensive overview. It clearly shows the lack of exchange between projects working in partner countries and the global policy level.

² Full list of entries: Asian Disaster Preparedness Center, Center for International Forestry Research, Ethiopian Water Technology Institute, Integrated Rural Development and Nature Conservation, International Livestock Research Institute, Kenya Agricultural and Livestock Research Organization, Namibian Chamber of Environment, Namibia University of Science and Technology, Permanent Interstate Committee for Drought Control in the Sahel, The Mekong River Commission.

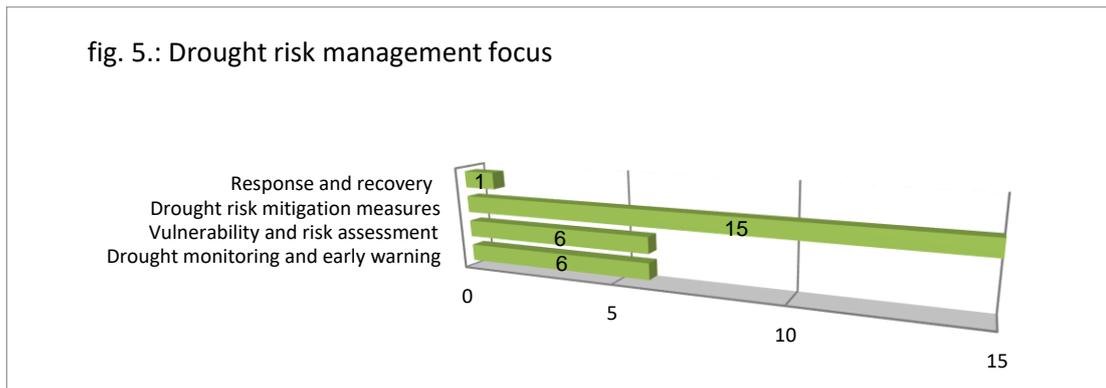
³ Full list of entries: Drought Resilience and Sustainable Livelihoods Program (African Development Bank), Netherlands Development Cooperation, Regional Development and Protection Programme (European Union), Regional Pastoral Livelihoods Resilience Project (World Bank), SEWOH, World Bank.

Almost one third of all projects do not report and provide information to international frameworks and conventions (such as UNDRR, CBD, UNCCD or UNFCCC). Although most of the project work in the agriculture and water sector more information is shared with UNFCCC than with UNCCD or even CBD.



Part 3.: Drought Risk Management Tools⁴

The following chapter provides an overview of the four pillars of a comprehensive drought cycle management approach and how the surveyed projects position themselves within. It is important to note that this third part of the report only covers those 15 projects for which droughts are part of the project's objectives or essential for reaching the project's objectives, as these are the projects actively implementing measures related to drought. All other projects were asked to skip this section in the survey.



As we can see in the graph above all fifteen projects engage in drought risk mitigation measures. Furthermore, six engage in early warning as well as risk assessment (40%).

But not even half of the projects are engaged in vulnerability and risk assessments as well as drought monitoring and early warning. Unfortunately, the reason for this gap is not clear from the survey. It is not known whether vulnerability and risk information is available and used for planning of measures or not.

Only one project (working on drought risk insurance) is also focusing on response and recovery besides drought risk mitigation measures. This can be explained by the target group of the survey, as it is mostly focusing bilateral projects in partner countries with a longer-term perspective.

For now, let us start with a more in-depth analysis of what kind of tools the various projects employ in terms of proactive risk mitigation.⁵

3.1. Preparedness

⁴ answers from question: 10 - 31

⁵ Asked how many projects do know GIZ's own Comprehensive Risk Management Plan (CRM), about 50% of those engaging directly with drought are aware of the in-house tool, while none of the other projects was aware about the available planning tool.

3.1.1. Monitoring and early warning

There is a wide spectrum of early warning and monitoring experiences stemming from German development cooperation. This ranges from complex transboundary settings, like for example along the Mekong River, where existing flood and drought management centers were given assistance in improving and expanding their capacities, all the way to the creation of new competence centers, like for example in Morocco, called 4C Maroc⁶. In this particular case the center proved to be an essential component for the national adaptation plan as well as risk management infrastructure, monitoring droughts, amongst other climatic phenomena. The table below highlights numerous projects, their intervention tools, as well as challenges and identified opportunities for further improving the project's effectiveness.

Context	Interventions	Challenges	Opportunities
Ethiopia (Strengthening drought resilience)	This usage of satellite imagery, funded through EU sources, helped to identify aquifers	-	This "groundwater mapping" exercise has since then been expanded all over Ethiopia to create a countrywide groundwater map
Horn of Africa (Support to the Intergovernmental Authority on Development)	Supporting the effort of IGAD structures in collecting multi-year data, climate prediction data and other ancillary information to project regular early warning information	Dissemination of early warnings and timely response measures	Ease of technology and associated low cost / willingness of the member states to work together
Kenya (Drought Resilience in Northern Kenya)	Livestock disease monitoring	Lack of finance	Potential for additional monitoring of livestock herds movement
Mekong Basin (Transboundary Water management Project -Cambodia, Laos, Thailand, Vietnam)	SPI has been used for flood and drought management assessment / in addition, the partner organization, the Mekong River Organization (MRC) is using for monitoring and forecasting the following indices: CDI, SMDI, SPI1, SRI1 and also does a seasonal outlook considering IOD and EI	There was capacity building training for drought monitoring, but observations showed that the training is highly technical and may be difficult to apply also at provincial and district level / furthermore, the drought monitoring indicators are so far not incorporated into Drought Risk Management Plans	The developed drought management strategy of the MRC suggests to additionally focus on reservoir monitoring, groundwater monitoring, soil moisture and crop condition monitoring, as well as salinity level monitoring in the future

⁶ <https://www.giz.de/de/weltweit/27018.html>

	Niño / results are being published weekly	neither national nor regional	
Morocco (Maroc 4 / Monitoring Center)	Competence centers on climate and drought		Becoming an integral part of national risk management infrastructure
Niger Basin (Transboundary water resource management)	Enhance conditions for communication between Niger Basin Authority (NBA) and selected national authorities responsible for drought and flood management, will formalize the communication channels between the Executive Secretariat and these national authorities / consequently, NBA advise to member states is more effectively, as it will be able to feed its high-quality drought and flood forecasts faster and more directly into the respective national disaster management systems	Weak and inconsistent national and sub-national communication systems for disaster risk management / complexity and dynamics of national disaster management systems in 9 member countries	Growing awareness for importance of disaster preparedness and adequate communication protocols / data sharing and modeling benefit from a regional cooperation approach
Pan-African (Africa Risk Capacity - Agency of the African Union)	African Risk View monitoring instruments	Insufficient data, plus discrepancies between modeled and actual situation / Lack of human and financial resources of governments to use ARC	Premium subsidy funding

As seen in the table above, when it comes to challenges, a wide variety of circumstances are described, ranging from the availability of cost-effective technologies, to the lack of human capacities at sub-national level, as well as discrepancies between data and actual situations on the ground. In addition, and highlighted by multiple projects are “weak and inconsistent national and sub-national communication systems”.

On the other hand, the preparation of adequate communication protocols is also seen as one of the biggest opportunities to enhance the effectiveness of early warning systems, along with data sharing and modeling with regional cooperation partners, as well as the expansion beyond measurements of precipitation alone to other forms of biophysical indicators, such as groundwater, soil moisture, crop condition, or salinity.

3.1.2. Vulnerability and risk assessment

Given the close link between risk assessment and early warning, almost all projects, with the exception of two, engage in both activities simultaneously. This being done on the one hand with

standardized approaches, such as the WFP's Vulnerability Assessment (VAM) or the MARISCO tool, but also with *self-made* risk assessment tool.

A GIZ-project in Chad, for example, highlights the necessity for a prior and comprehensive risk assessment. It was their experience that the policy-makers have not yet fully integrated such assessments, including long-term weather patterns and climate models. According to their experience, sometimes shorter droughts, so-called dry spells, in a critical phase of crops growth, can already lead to complete crop failure. Droughts are often still perceived as singular events, despite their increase in frequency and intensity.

Going back to the experiences of practitioners in the Mekong Basin, one can add the applicability of tailor-made assessment solutions. In their particular case, an excel-based risk assessment tool was developed, which identified physical parameters relevant to the contribution of risks with a standardized scoring system. This included an Integrated Water Quality and Quantity Simulation Model (IQQM) and the Soil and Water Assessment Tool (SWAT) to run crop models for all catchment areas and consulted irrigation projects. Additionally, an impacts and vulnerability assessment on agriculture, socio-economic conditions, and environment was included. It was adopting the methodology of drought preparedness planning, which includes drought impact and vulnerability assessment. The entire assessment followed these steps: 1. impacts identification, 2. impact selection and ranking, 3. vulnerability assessment and identification of consequential actions.

An overview on intervention tools, as well as challenges and opportunities encountered by numerous other projects is provided below:

Context	Interventions	Challenges	Opportunities
Chad (Integrated municipal development)	Necessity for comprehensive risk assessment tool	Lacking data access and integration by policy-makers	Combination with existing climate modeling
Mekong Basin (Transboundary Project -Cambodia, Laos, Thailand, Vietnam)	Tailor-made excel-based risk assessment tool, including Integrated Water Quality and Quantity Simulation Model (IQQM) and the Soil and Water Assessment Tool (SWAT), plus socio-economic conditions.	The model did not attempt to evaluate the many other multiple risks posed by a major drought, such as forest fires, disruption to fisheries, economic losses in other sectors, etc. / it also didn't factor in risk due to climate change and it could only consider irrigated croplands not the rainfed ones / lacking or incomplete data especially on district level	More information on economic losses is needed for improved decision making. Drought forecasts should also be developed for long-term developments / regional drought vulnerability should be re-assessed every five to ten years to accommodate the changing land use, population growth, and climate change effects. For more accurate results, national data should be used with more variables

			and parameters including soil moisture and temperature to be able to calculate the drought indices.
Namibia (Community-based natural resource management)	Vulnerability analysis / MARISCO tool	Slow institutional processes / GIZ-internal barriers related to contracting and finance management	Drought is high on political agenda / transformation, e.g. in traditional agriculture and land use with increased interest in conservation agriculture
Niger Basin (Transboundary water resource management)	Institutional mapping, stakeholder analysis and stakeholder mapping	-	Countries are receptive for peer-to-peer learning and advisory support
Pan-African (Africa Risk Capacity - Agency of the African Union)	WFP Vulnerability Assessment (VAM)	Insufficient data / discrepancies between modeled and actual Situation, lack of human and financial resources of governments to use ARC	-

As listed in the table above, described constraints relate to insufficient data availability, discrepancies between modeling and actual situation, lack in finance for comprehensive surveys, missing human capacities on the ground, as well as internal GIZ-barriers that may not be directly linked to the topic of risk/vulnerability assessments per se but might hamper conducting assessments prior to planning of interventions as this might be timewise not feasible or delay the implementation. In addition, concerns have been raised by cross-border collaboration projects that there is inconsistency in the definition of risk assessment parameters.

Apart from existing friction lines, concrete opportunities for improvements have also been outlined, namely: to enable more peer-to-peer learning amongst affected countries; to give advisory support in a decentralized manner across borders; for risk-assessments to consider long-term forecasts in order to assist future developments. Given the often-holistic nature of risk assessments, some respondents added that they should also get supportive documentation for political advocacy, demanding transformational change in land-use and towards conservation agriculture⁷.

In addition, asked if **migration** is an issue in the project areas, twenty projects confirm either temporary or permanent migration patterns exist. When looking at drought-focus projects only this is the case with nine out of fifteen projects, whereas, work migration and pastoral migration is registered at equally high levels. Many respondents emphasized that migrants are primarily male. In some projects, migration is an underexposed problem due to the lack of insight and data. Specific measures derive for six of all responsive projects, or 22%. By zooming in on those who deal with droughts explicitly, the ratio slightly drops to 20%, meaning three out of fifteen.

⁷ One project made good experiences by utilizing existing risk assessment plans produced by the WFP for its target region.

3.1.3. GIZ-sample project: Zambia⁸

❖ *Accelerate Water and Agricultural Resources Efficiency (AWARE) - Zambia*

funded by:	implemented by:	partner org.:	duration:	drought risk:
BMZ	GIZ	Min. of Wat. Dev.	2019 - 2022	medium
URL:	https://www.giz.de/projektdateen/projects.action?request_locale=de_DE&pn=201820992			

Building on the successes and lessons learnt from previous activities, the *Accelerate Water and Agricultural Resources Efficiency (AWARE) Programme* was launched in February 2019. Its objective is to enhance climate-smart water resources management and efficient agricultural water use for smallholders in the Lower Kafue Sub-Catchment, ensuring a gender sensitive approach. Monitoring and risk assessments are a crucial component to this project's accomplishments and can serve as a good practice case for further studies and communications

⁸ https://www.giz.de/projektdateen/projects.action?request_locale=en_GB&pn=201820992

3.2. Risk mitigation measures

Every surveyed development project is supporting interventions in the realm of risk mitigation measure, be it biophysical interventions, socio-political components, or often the combination of both.

3.2.1. Biophysical interventions and infrastructure

With almost 50 years of German development cooperation across continents, the list⁹ of intervention mechanisms on the land is comprehensive and speaks for the accumulated experience. These land-based interventions¹⁰ build the backbone to all efforts to increase soil coverage, to improve the overall standing biomass, biodiversity as well as landscape productivity as such, in other words: to restore functional agro-ecological systems.¹¹

Yet, these interventions do not come without challenges, especially in regions where unsustainable land use practices have compounded degradation for millennia and where fragile land tenure regimes prohibit long-term investments into watershed rehabilitation and restoration. The following two tables will give an overview of received responses, subdivided into agriculture/agroforestry on the one hand and pastoralism on the other.

Interventions in Agriculture / Agroforestry			
Context	Interventions	Challenges	Opportunities
Ethiopia (Strengthening drought resilience)	Identification of deep groundwater aquifer via remote-sensing and satellite imagery / 3G-based sensors that report borehole	Salinity of groundwater resources is a frequent problem / maintenance of the water infrastructure in remote areas is difficult.	The technology has helped immensely to increase the success rate of drilled boreholes, as the satellite imagery reveals potential aquifers or rough indications where drilling is sensible. The sensors help to reduce borehole non-functionality and can help utilities to identify maintenance needs remotely.

⁹ Pastoral Interventions: pasture rehabilitation, fodder banks, refurbishment of water points and livestock breeding.
Agrarian/Agro-forestry interventions: water spreading weirs, drip irrigation, drought tolerant crop varieties, new crop rotation schemes, afforestation, reforestation, small-scale water harvesting techniques, terracing, intercropping, biological pest control, percolation ponds, conservation agriculture, mixed cropping and hydroponics, to only name those mentioned in the survey.

¹¹ Expressed in percentage: 20% of the projects implement agronomic, 11% vegetation-based, 25% livestock-based, 25% structural and 19% land-use-planning activities.

Mekong Basin (Transboundary Project -Cambodia, Laos, Thailand, Vietnam)	Identification of water demand management measures (incl. managing water consumption, grey water reuse, water efficient industrial production, rainwater harvesting, innovative irrigation, water efficient crops, etc.).	All these measures are still in the beginning. No conclusions can be drawn so far.	Development of a guideline on drought adaptation and rural drought risk management plans.
Namibia (Community-based natural resource management)	Installation, upgrading and refurbishment of water infrastructure, to mitigate human wildlife conflict / separating water points for humans and for wildlife	Population is not always willing to share water resources (among villagers and with wildlife) / illegal use / lack in maintenance of water infrastructure / water points are elephant proof, but smaller animals can still cause harm	Awareness about human wildlife conflict importance of wildlife for tourism and local development / water and resource conservation
Niger Basin (Transboundary water resource management)	Mitigation measures are decided and implemented at national levels	-	Countries are receptive for peer-to-peer learning and advisory support
Somalia (Sustainable land management)	-	Damage to soil bunds by grazing livestock Weak attitude towards maintenance, expectation for external inputs Access rights to land and water for expansion of irrigation unregulated	-
Somalia (Increasing the agricultural and pastoral productivity)	Enhancing supply through the construction of small-scale water collection / storage structures / to conserve water, protect soil erosion and grow crops	Operation and maintenance of the structures is challenging	Local construction companies have been trained / village committees are overseeing / strong ownership of local people, effective results will only show at later stage
Zambia (Accelerate Water and Agricultural Resources Efficiency)	Catchment planning and catchment protection measures, e.g. afforestation or groundwater recharge measures via water harvesting techniques / irrigation	Ownership of the communities / land issues / investment costs and maintenance	Involvement of communities in the establishment / innovative financing approaches

Interventions in Pastoralism			
Context	Interventions	Challenges	Opportunity
Ethiopia (Strengthening drought resilience)	Investments in Rehabilitation of pasture land and management	Traditions of pastoralists need to be reflected / difficult framework due to hard living conditions and extreme poverty / no "best practices" so far	People themselves are livestock experts
Ethiopia (strengthen the production systems)	Investments in Rehabilitation of pasture land and management	Operation and maintenance challenges / water and land use rights unclear	Target Group is expert in livestock keeping
Kenya (Drought Resilience in Northern Kenya)	Digital disease monitoring	Lack of finance	Movement of herds can be monitored
Namibia (Community-based natural resource management)	Installation of predator-proof kraals to help avoid human wildlife conflict	Kraals are sometimes not used since farmers are not used to sharing them, or they do not maintain them properly	Addressing human wildlife conflict / enhance awareness about the importance of living with wildlife and the utilization of other resources
Zambia (Accelerate Water and Agricultural Resources Efficiency)	Water use efficiency in livestock management and fodder production can be improved	Traditional breeds might not always be the most water efficient breeds, but sometimes be the most drought resistant	Choosing the most sustainable breeds considering resilience and impact at the same time

In sum, many projects face challenges with overstocking of livestock herds beyond the land's carrying capacity, limited data availability for effective decision-making, uncertainties in regards to groundwater levels and salinity, weak sense of community ownership to maintain water-retention infrastructure, plus the expectation for ongoing external input. In addition, there are also several just recently started projects that hesitated in answering, since too little time has passed since the project started.

Despite obstacles and challenges, the individual projects also identified a set of opportunities that could assist to further strengthen drought risk mitigation measures. Agroforestry systems and multi-purpose tree interventions were mentioned most often, followed by the utilization of modern technologies to identify best conditions for landscape interventions. Furthermore, peer learning from innovation farmers has been highlighted as well as the communities' potential to also engage in large-scale structural adjustments in the landscape.

A final point, which also serves as a transition to the more socio-cultural drought risk management interventions, was the realization by many that the revitalization of traditional or indigenous knowledge would enhance the valorization of biological resources.

3.2.2 Socio-political interventions

In the same way, as there is a multiplicity of physical interventions on the land, there is also an array of different socio-political strategies that aim at improving land use regimes, through proactive risk reduction. In particular the survey collected experiences from innovative finance approached, to catchment-management plans, to community-based land use planning, to the establishment of user committees and village cooperatives, cash-for-work programs, awareness-raising campaigns for water conservation, as well as (often critically accessed) the introduction of agrarian technics to pastoralists. The following two tables give an overview to the field of land use planning as well as human capacity development, listing the applied tools, as well as challenges and opportunities.

Land use planning			
Context	Interventions	Challenges	Opportunity
Pan-African (Africa Risk Capacity - Agency of the African Union)	Capacity development in spatial planning and knowledge management / cross border cluster planning and implementation in pastoral areas / gap identification and mapping of basic social services along cross border transhumance routes	The cross border nature of the territorial planning is difficult to enforce plans	Willingness by cross border communities to work together for a common goal
Kenya (Drought Resilience in Northern Kenya)	Community based land use planning	Lack of capacities of organizations to implement professionally	Necessary approach to create ownership
Somalia (Increasing the agricultural and pastoral productivity)	Project measures under KfW project come in place after a land use plan was developed by GIZ / the appropriate locations for construction is identified with village development committees	-	-
Zambia (Accelerate Water and Agricultural Resources Efficiency)	Catchment management plans and the implementation of catchment protection measures as well as irrigation expansion zones	Catchment management plans need strong political commitment and resources for the development, implementation and enforcement.	Grassroot approaches like water user association seems to be a promising opportunity

Human Capacity Development

Context	Interventions	Challenges	Opportunity
Pan-African (Africa Risk Capacity - Agency of the African Union)	Series of trainings in various fields related to Drought Disaster Resilience and Sustainability Initiative's Priority Intervention Areas (IGAD)	Too vast to address the capacity development at regional, national and subnational levels	Political support at all level in the region
Kenya (Drought Resilience in Northern Kenya)	Training of extension workers	Lack of finance for services and for large areas to be covered	Necessary to accompany transformative approaches
Namibia (Community-based natural resource management)	Training in human wildlife conflict mitigation measures / training in water management, rehabilitation of water infrastructure / capacity development in sustainable use of natural resources	COVID-19 has slowed down roll out of trainings / remote areas most affected by drought / marginalized communities, little infrastructure / few capacities / limited accessibility and transport	Revitalize traditional knowledge, strengthen local identities / enhance the valorization of biological resources, which are more drought-resistant
Somalia (Increasing the agricultural and pastoral productivity)	Trust building with local farmers and capacity building with local construction companies was done / strong involvement of village development committees / information and experience exchange forum for farmers / involving in cash for work measures	-	Creating more awareness and building capacities
Zambia (Accelerate Water and Agricultural Resources Efficiency)	11,000 smallholder farmers to be trained in efficient agricultural water use and WRM using a training of trainers approach on 32 demonstration sites, which showcase practices like rainwater harvesting, storage and efficient irrigation	Increasing demand for boreholes in the project region / often not financially feasible for all smallholders and it may have negative impact / misconception that a borehole means endless water supply	The need for greater awareness that also groundwater is finite

From knowledge management, to capacity development to cross-border spatial planning, all interventions also have the potential to enhance friction and to be jeopardized by wrongly accessed forces before the implementation of a project. The specific feedback on such dimension included: the lack of political commitment and local resources to enforce and implement catchment-management plans; the impossibility for cross-border planning; challenging conditions for maintenance or refurbishment of infrastructures; fraud; difficulties to roll out training programs due to COVID-19 pandemic; and the necessity to accompany transformative approaches longer than anticipated.

Yet, despite backlashes and the severity of a pandemic affecting almost all regions while the survey had been conducted, the responders also pointed out a number of newly seen opportunities and synergies in the sphere of drought risk mitigation, whereas three things stood out: promising results with grassroots approaches like, e.g. water user associations; increased

implementation rates through improved ownership structures; as well as the potential of open-source satellite data that provides unprecedented details in spatial and temporal resolution, enabling a more adaptive management for the benefit of risk mitigation.

3.2.3. GIZ-sample project: Ethiopia¹²

- ❖ *Strengthening the drought resilience of the pastoral and agro-pastoral population in the Afar region – Ethiopia*

funded by:	implemented by:	partner org.:	duration:	drought risk
BMZ	KfW	Min. of Agri.	2015 - ongoing	high
Web:	https://www.kfw-entwicklungsbank.de/ipfz/Projektdatenbank/Staerkung-der-Duerreresilienz-der-pastoralen-und-agro-pastoralen-Bevoelkerung-in-der-Afar-Region-30932.htm			

This sample practice project aims at the conservation of soil and water resources to strengthen drought resilience and increase food security in arid regions of Ethiopia. It is part of the SEWOH special initiative sustainable and is located in the Afar region in the north of the country. The goal was to enable the population to sustainably manage their natural resources even under changing climatic conditions and thereby to further improve their nutritional situation. This has been achieved through holistic watershed rehabilitation, by addressing the needs of agro-pastoralist and pastoralist alike. The project also manages context-specific trainings for both groups, aiming to strengthen skills for natural-resource management, production and monitoring systems. Furthermore, learning from good practices can then be used and scaled up by government development programmes. Supporting the government with political framework setting is an additional intervention area. Last, but not least, the project also implements emergency measures during drought periods.

¹² <https://www.kfw-entwicklungsbank.de/ipfz/Projektdatenbank/Erhalt-von-Boden-und-Wasserressourcen-zur-Staerkung-der-Duerreresilienz-und-Erhoehung-der-Ernaehrungssicherheit-in-ariden-34396.htm>

3.3. Response and recovery

A third and final dimension to a comprehensive drought management approach is formed by measures aiming at recovery and response. This constitutes the final section of this survey.

3.3.1. Re-active measures

Asked, when do you implement drought response and recovery measures, only one third of those projects working with specific drought focus could give an answer to this question. Whereas two (13%) do follow the official national drought declaration, the remaining four (26%) apply their own trigger schemes, which in many instances rely on information coming from the African Risk View (ARV) or own monitoring setups on the ground, followed by close discussions with colleagues at BMZ and the SEWOH.

Given the proven development paradigm that investments in pro-active risk mitigation measures is the more cost-effective way of dealing with droughts and given that the humanitarian tragedies related to droughts are traditionally addressed by humanitarian aid, this finding comes hardly as a surprise. Yet, with the much needed intersectoral coordination during all phases of a drought event, be it before, during or after, it will most likely need to come to a more fine-tuned alignment of organizations during the final recovery phase of a drought. What has often been describe as a fruitful collaboration between traditional emergency aid and development agencies in terms of joint risk assessments, would most likely also need to be expanded and harmonized in the realm of recovery.

Last but not least, when asked if there were management plans in place that include recovery and response as well as proactive measures? All but two of those projects working with specific drought focus could give positive feedback. The answers were ranging across a broad field of different planning instruments, such as a Regional Drought Management Strategies, Water Sector Plans, Watershed Contingency plans, National Development Plans, or even national plans for agrarian transformation. As positive as the initial reaction might be, due to the high response rate to this particular question the wide spectrum of answers also showed that hardly any of the projects could cite a specific national drought management plan. We will briefly analyze this factum in the following summary and reflect upon implications for the way forward.

3.3.2. GIZ-sample project: African Risk Capacity

❖ *African Risk Capacity - Drought insurance schemes*

funded by:	implemented by:	partner org.:	duration	contact:
BMZ	KfW	ARC	2014 - ongoing	low - high
Web:	https://www.kfw-entwicklungsbank.de/ipfz/Projektdatenbank/Duerreversicherung-fuer-Afrika-ARC-30517.htm			

This indirect financing scheme by the KfW managed through the ARC is facilitated under the umbrella of the G20/V20 InsuResilience¹³. The main objective of this project example for post-disaster measures is to reduce the vulnerability of African countries to the increasing extreme weather risks resulting from climate change by improving access to insurance solutions that meet their needs. The German support comprises trust participation funds in the amount of EUR 78.2 million for the capitalization of the insurance components as well as accompanying implementation measures. In order to become member of ARC and be eligible for payouts in case of disaster, states must draw up detailed contingency plans. This index-based insurance is using satellites to continuously measure how much rain falls in individual regions. As part of the early warning system, software calculates the severity of a drought before the drought hits. If there is too little rain or the precipitation is too volatile, the insurance is triggered at a contractually defined threshold. This happens before the disaster strikes, which is a crucial resilience-building component. It enables fast payouts that can be used to foster preparedness and to have measure in place when drought hits the population. So far, six African countries received payouts (with KfW contributions) and 34 countries are member of ARC.

¹³ <https://www.deutschemklimafinanzierung.de/instrument/insuresilience/>
http://www.bmz.de/de/zentrales_downloadarchiv/themen_und_schwerpunkte/klimaschutz/01_factsheets/BMZ_InsuResilience_de.pdf
https://www.insuresilience.org/wp-content/uploads/2018/11/Flyer_InsuResilienceGlobalPartnership_2018.pdf

Part 4.: Summary and Outlook

4.1. Summary of findings

Drought directly affects multiple sectors, but with more than 80% of recorded damages in the agrarian field, the primary focus on land-based intervention is considered critical. The survey confirms this conclusion, aiming at strengthening all phases in a comprehensive drought risk management cycle, including early warning, risk assessment, mitigation and response.

While a broad spectrum of risk mitigation measures have been applied, and many surveyed project in drought-prone areas conducts risk assessments in advance, early warning as well as response activities are far from standardized or harmonized. This situation is often aggravated by the fact that the majority of the surveyed countries, until today, still do not have comprehensive drought risk management plans in place, hinting towards underlying frictions in terms of a much needed interconnectedness amongst sectors.

Furthermore, the data exchange at all phases of a comprehensive drought risk management approach should be further strengthened amongst various entities, be it regional, national or international, improving the integration of various mitigation and response measures. Yet, drought prone areas not only need to be analyzed along bio-physical parameters, but also in regards to political ecologies in order to roll out effective and proactive mitigation measures. This is especially true in Sub-Saharan African contexts where armed conflicts over resource access often play a decisive role in compounding the negative impacts of a drought.

When it comes to large-scale ecosystem rehabilitation that takes entire watersheds into account, the interconnectivity between forestry and agriculture must be strengthened further, making development organizations lead agents for change in the sense of a holistic landscape approach.

Despite the technical challenges in the survey's layout, social protection mechanisms appear to be at a relatively early stage and not being tested and applied across the board of many projects operating in drought-prone areas. A similar situation constitutes itself for finance mechanisms targeting small-scale farmers, which are highly likely to be at the lower end of available mitigation tools. Gender-aspects on the contrary, appear to have an adequate representation across regions, with two projects especially highlighting its crucial factor for the successful interventions.

In addition, best or good practice examples were being asked for as communication products in order to enhance the understand and to share knowledge in between sectors.

In sum, the survey provided proof for the pressing shift in consciousness, away from re-active, often very expensive, measures towards proactive engagement with droughts. This will make a crucial contribution in enabling and securing sustainable development in drought-prone countries, helping to work across watersheds, sector and national boundaries.

4.2. Voices from the field and new questions

At the end we wish to give the word to those who are working in often challenging conditions on the ground, by listening to their statements and questions, triggered by this survey conducted by the German Development Cooperation.

“Where can I get related information and global experiences on drought risk management?” (Ethiopia)

“How do other projects tackle the interlinkages between Water Resources Management and Drought Risk Management?” (Zambia)

“Peer to peer learning in the 9 member states of the Niger Basin Authority and transboundary cooperation would benefit from drought management.” (Niger)

“It would be useful to learn practical measures for drought management from different projects, particularly in the transboundary context.” (Laos)

“Knowledge of best practices would be good.” (Ethiopia)

“We have made very good experiences by working with female farmers who turned out to be much more open in using new methods and take ownership of the pilot field.” (Uzbekistan)

“We need conflict transformation measures aimed at strengthening livelihoods and peace building in vulnerable and generally poor communities.” (Nigeria)

“We need more experience in drought risk management, with EU directives.” (Eastern Europe)

“Where can I get related information and global experiences on drought risk management? Will there be information products to be shared after this analysis?” (Turkmenistan)

“Drought and flooding often goes hand in hand and solutions need to take both events into account.” (Zambia)

Annexes

Annex 1: Project overviews

Anpassung an den Klimawandel durch grenzüberschreitendes Hochwasserrisikomanagement im westlichen Balkan	Albania, Kosovo, Macedonia, Montenegro
Wissenschaftsbasierte Unterstützung nationaler Anpassungsplan (NAP)-Prozesse in frankophonen LDC in Subsahara-Afrika	Benin, Burkina Faso, Senegal
Unterstützung der Niger-Flussgebietsorganisation ABN II	Benin, Niger, Nigeria
Verbesserung der landwirtschaftlichen Produktivität durch boden- und wasserkonservierende Maßnahmen (SEWOH) VPT2	Burkina Faso
Nachhaltiges Wasser- und Bodenmanagement zur Ernährungssicherung in katastrophengefährdeten Gebieten Burundis	Burundi
Nachhaltige und klimasensible Landnutzung für die wirtschaftliche Entwicklung in Zentralasien	Central Asia
COM NORD - Integrierte Kommunalentwicklung im nördlichen Tschad	Chad
Integration von Flüchtlingen u. Verbesserung ES	Chad
Ernährungssicherung, Friedensförderung und Katastrophenrisikomanagement zur Erhöhung der Resilienz im Tschad	Chad
Integration von Flüchtlingen und Verbesserung der Ernährungssicherheit von ansässiger Bevölkerung u. Flüchtlingen in der ost-tschadischen Region Ouadd	Chad
Regionalfonds zur Stärkung der Dürresilienz am Horn von Afrika (Djibouti)	Djibouti
Regionalfonds zur Stärkung der Dürresilienz am Horn von Afrika (Djibouti)	Djibouti
Programm Nachhaltige Landbewirtschaftung	Ethiopia
Unterstützung zur Bewältigung der Dürrefolgen und zur Steigerung der Resilienz (WEP PRRO 200712)	Ethiopia
Unterstützung bei der längerfristigen Bewältigung der Dürreauswirkungen sowie der Stärkung der Resilienz in Äthiopien	Ethiopia
Ausweitung der Rural Resilienz Initiative (R4) in Äthiopien	Ethiopia
Unterstützung der von Dürre betroffenen vulnerablen Bevölkerungsgruppen in Äthiopien	Ethiopia
Verbesserung der Ernährungssicherung und des Katastrophenrisikomanagements zur Stärkung der Resilienz in Afar/Äthiopien	Ethiopia
Trilaterale Resilienz Erweiterung im äthiopischen Tiefland (Afar Region)	Ethiopia
Erhalt von Boden- und Wasserressourcen zur Stärkung der Dürresilienz und Erhöhung der Ernährungssicherheit in semi-ariden und ariden Gebieten	Ethiopia
Stärkung der Dürresilienz im äthiopischen Tiefland	Ethiopia
Entwicklung von Kapazitäten zur Stärkung der Dürresilienz der agro-pastoralen Bevölkerung im Tiefland von Äthiopien	Ethiopia
Stärkung der Dürresilienz der pastoralen und agro-pastoralen Bevölkerung in der Afar Region Zusammenwirken mit TZ-Vorhaben 2014.2009.0	Ethiopia
Nachhaltiges Ressourcenmanagement im Fokus des Klimawandels	Honduras
Stärkung der Kapazitäten von IGAD zur Erhöhung der Dürresilienz am Horn von Afrika	Horn von Africa
Klimaanpassung und Bodenrehabilitierung in Wassereinzugsgebieten, Komponente II (VPT II)	India
Jugendbeschäftigung und Agro- Buisness	Kenya
Dürresilienz im Norden Kenias	Kenya
Verbesserung der Ernährungssituation von Frauen im reproduktiven Alter und Kleinkindern in den Verwaltungsbezirken Marsabit und Turkana (LP GV Ernährungssicherung/Resilienzstärkung)	Kenya

Anpassung an den Klimawandel im Nord-Osten Kenias	Kenya
Stärkung der Dürresilienz im Norden Kenias	Kenya
Dürresilienz im Norden Kenias	Kenya
Ernährungssicherheit durch verbesserte landwirtschaftliche Produktivität im Westen Kenias	Kenya
Dürresilienz im Norden Kenias	Kenya
Anpassung landwirtschaftlicher Wertschöpfungsketten an den Klimawandel	Madagascar
Anpassung landwirtschaftlicher Wertschöpfungsketten an den Klimawandel	Madagascar
Verbesserung der Ernährungssituation von Frauen und Kleinkindern in den Distrikten Dedza und Salima in Malawi (LP GV Ernährungssicherung/Resilienzstärkung)	Malawi
Integrierte Land- und Viehwirtschaft in Gao und Ménaka	Mali
Unterstützung des nationalen Programms für nachhaltige Kleinbewässerungslandwirtschaft (PASSIP)	Mali
Stärkung der Widerstandskraft der armen Bevölkerung, insbesondere zurückkehrender Flüchtlinge und intern Vertriebener, gegenüber zukünftigen Ernährungskrisen im Nigerbinnendelta (LP GV Ernährungssicherung/Resilienzstärkung)	Mali
Steigerung der Kapazitäten zur Anpassung an den Klimawandel im ländlichen Raum	Mauretania
Biodiversität und Anpassung an den Klimawandel III	Mongolia
Unterstützung von Schutzgebieten zum Erhalt von Ökosystemleistungen	Mongolia
Biodiversität und Anpassung an den Klimawandel II	Mongolia
Biodiversität und Anpassung an den Klimawandel	Mongolia
Biodiversität und Anpassung an den Klimawandel II	Mongolia
Aufbau eines nationalen Kompetenzzentrums Klimaschutz und -anpassung	Morocco
Anpassung an den Klimawandel	Mozambique
Landwirtschaftliche Beratung für Begünstigte der Landreform	Namibia
Kommunales Ressourcenmanagement	Namibia
Klimaanpassung im Norden Namibias	Namibia
Landwirtschaftliche Beratung für Begünstigte der Landreform	Namibia
Stärkung der Kapazitäten der Nationalen Institution zur Prävention und zum Management von Ernährungskrisen (Dispositif National)	Niger
Förderung der produktiven Landwirtschaft (PromAP III)	Niger
Ernährungssicherung vulnerabler Bevölkerungsgruppen in der Region Tillabéri	Niger
Programm ländliche Entwicklung und produktive Landwirtschaft - Förderung der produktiven Landwirtschaft (PROMAP)	Niger
Programm ländliche Entwicklung/produktive Landwirtschaft	Niger
ZFD NE,BF,BJ - Stärkung der Kapazitäten zur Dialogförderung und Konflikttransformation im Kontext der grenzüberschreiten	Niger, Burkina Faso, Benin
Stärkung der Kapazitäten zur Bearbeitung des Konflikts zwischen Ackerbauern und Viehhaltern in Zentralnigeria	Nigeria
Dürreversicherung für Afrika (ARC)	Pan-Africa
Regionalfonds zur Stärkung der Dürresilienz am Horn von Afrika (IGAD)	Pan-Africa
Regionalfonds zur Stärkung der Dürresilienz am Horn von Afrika (IGAD)	Pan-Africa
Regionalfonds zur Stärkung der Dürresilienz am Horn von Afrika (IGAD)	Pan-Africa
Ernährungssicherung durch Resilienzstärkung in den neuen Siedlungen von Kismayo	Somalia
Förderung der Lebensgrundlagen durch verbesserte Tierhaltung und Landwirtschaft in der Region Saaxil in Somalia	Somalia
Nachhaltiges Landmanagement in Somaliland	Somalia
Grenzüberschreitende Wasserkooperation im Unteren Mekong-Einzugsgebiet (Kambodscha, Laos, Thailand, Vietnam)	South-East Asia

Klimaanpassung im ländlichen Raum	Southern Africa
Sudan - Ernährungssicherung für Flüchtlinge und anliegende Gemeinden in Gedaref und Kassala State	Sudan
Multisektorale Ernährungssicherung Togo (LP GV Ernährungssicherung/Resilienzstärkung)	Togo
Teilhabe der ländlichen Bevölkerung am Management von Wasser und Boden am Oberstrom des Nebhana-Staudamms	Tunisia
Grünes Innovationszentrum, Teilmaßnahme ZMB, dort Teilmaßnahmen zu WSK Milch/ Stärkung der Klimaresilienz infolge der Dürre	Zambia
Verbesserung der Ernährungssicherheit und der Nahrungsvielfalt in kleinbäuerlichen Haushalten in der Ostprovinz und der Provinz Luapula (LP GV Ernährungssicherung/Resilienzstärkung)	Zambia
Förderung der Ernährungssicherung und Agrarwirtschaft (AISP IV)	Zimbabwe

Drought Risk Management – Practical Experiences

Dear colleague,

thank you for your support!

Your participation is of utmost importance to gather practical experience from German Development Cooperation on drought risk management. The results of this survey will feed into global processes of the UNCCD and UNDRR and they will foster knowledge transfer among projects of German Development Cooperation.

Please note: In this query we try to get a comprehensive picture on drought-related tools that are used in German development cooperation. Therefore, we ask you to consider a broad definition of drought when reporting your experience.

The query will not take longer than 10-20 minutes. You can also pause it with the button “Continue later” below the GIZ icon on the top and follow the link that is created to continue and finalize the query.

In case of technical issues please contact xyz@giz.de

By participating in this query, you agree that we use the gained data for our analysis. The data will not be passed on to any third parties. As we refer to your project in this query it is not anonymous. Please do not to share any personal data. Provided personal information will be deleted. Furthermore, in eventual products or publications we will not refer to specific projects, unless we explicitly obtained the permission of the project to do so.

Please also observe askallo's data protection provisions.

A. General information about the project

Please fill in the following information:

1. **Project number:**
2. **Country:**
3. **How relevant are droughts and drought-related measures for the success of the project?(multiple answers possible)**
 - Drought is explicitly mentioned in the module objective or indicators.
 - Drought-related measures are essential to reach the objective of the project.
 - Droughts endanger the success of the project.
 - Droughts and drought-related measures are not relevant for the project's success.

4. **Please provide a short overview (max. 10 sentences) on how the project is related to drought or drought management:**

B. Framework conditions

5. Which of the following areas does the project particularly address?

- Policy
- Implementation and institutional coordination frameworks
- Implementation measures
- Finance
- Others (please specify):

6. At which level do you implement drought-related measures?

- International
- National
- Subnational (e.g. district level)
- Local (e.g. community level)

7. What is your main target group?

- Policy makers
- Private sector
- Civil society
- Subsistence farmer
- Others (please specify):

8. In which of the following sectors does your project support drought-related measures?

- Forestry
- Agriculture
- Water
- Infrastructure
- Social security
- Decentralization
- Tourism
- Private Sector
- State fragility (legitimacy, authority, capacity)
- Others (please specify):

9. Do you integrate cross-cutting issues in your work to mitigate the effects of drought?

- No
- Yes:
 - We apply gender-sensitive or gender-transformative tools and measures to mitigate the effects of drought.
 - We use digital tools to mitigate the effects of drought.
 - We integrate human rights to mitigate the effects of drought.
 - Yes, we integrate measures for climate change adaptation to mitigate the effects of drought.
 - Yes, we apply measures in the field of disaster risk reduction to mitigate the effects of drought.
 - Others(please specify):

C. Drought-related tools available in your project, country or region

10. In which of the four areas does the project support drought-related measures?

- Drought monitoring and early warning (Preparedness)
- Vulnerability and risk assessment (Preparedness)
- Drought risk mitigation measures (Preparedness) such as:
 - Agronomic (e.g. mulching, organic fertilizer, drought resilient varieties)
 - Vegetation-based (e.g. reforestation, living fences, fire control)
 - Livestock-based (e.g. pasture management, breeding)
 - Structural (e.g. terracing, water spreading weirs, irrigation)
 - Land use planning (e.g. territorial approach, new landscape approach)
 - Human capacity development (e.g. farmer training)
 - Social protection (e.g. risk transfer schemes)
 - Finance (e.g. [Risk-informed financial planning and investments](#), insurance)
 - Civil protection (e.g. contingency planning)
 - Peace and security (e.g. drought related conflict prevention/resolution)
 - Others (please specify):
 - Response and recovery (please specify):

11. Drought monitoring and early warning (Preparedness)

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

12. Vulnerability and risk assessment (Preparedness)

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

13. Drought risk mitigation measures (Preparedness): Agronomic

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

14. Drought risk mitigation measures (Preparedness): Vegetation-based

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

15. Drought risk mitigation measures (Preparedness): Livestock-based

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

16. Drought risk mitigation measures (Preparedness): Structural

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

17. Drought risk mitigation measures (Preparedness): Land use planning

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

18. Drought risk mitigation measures (Preparedness): Human capacity development

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

19. Drought risk mitigation measures (Preparedness): Social protection

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

20. Drought risk mitigation measures (Preparedness): Finance

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

21. Drought risk mitigation measures (Preparedness): Civil protection

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

22. Drought risk mitigation measures (Preparedness): Peace and security

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

23. Drought risk mitigation measures (Preparedness): Others

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

24. Response and recovery

Which tool(s)/instruments do you use?

Which challenges/barriers have been experienced?

Which opportunities can you identify? / What else is needed?

D. Policy, implementation and institutional coordination frameworks, and implementation measures for addressing drought

25. Is there a policy, legislation or management plan to combat drought?

- No
- Yes. Which are the most relevant?

26. Do you use the results of official vulnerability assessments or risk analysis to plan and implement drought risk mitigation measures?

- No
- Yes (please specify):

27. Do you know of "Comprehensive Risk Management" - the approach advocated by the German Development Cooperation to deal with climate and disaster risk? For further information see:

http://www.bmz.de/en/publications/topics/climate/Materilie400_risk_management.pdf

- Yes
- No

28. When do you implement drought response and recovery measures?

- after the official declaration of a national drought emergency, or
- we apply our own triggers (please specify):

29. Are there any trade-offs between drought resilience measures and other project goals?

- No
- Yes (please specify)

E. Migration

30. Do people within the project area respond to drought by migrating?

- No
- Yes, national
- Yes, international
- Yes, temporary
- Yes, permanently
- Yes, labor migration occurs
- Yes, pastoralists change their routes
- Yes, rather men
- Yes, rather women
- Yes, women and men equally
- Yes, in other forms than mentioned above (please specify):

31. Does the project address migration with specific measures?

- No
- Yes (please specify):

F. Cooperation and Research

32. Do you cooperate with other organizations in your drought-related activities?

- Yes
- Research organizations
- NGOs
- Multilateral organizations (e.g. OCHA, WFP)
- Regional organizations
- Private sector
- Self-help groups
- Others:
- No

33. Do you know researchers or research institutions working on drought-related topics in your project region?

- Yes (please specify):
- No

34. Do you or your partners feed experiences into international organizations and processes?

Please specify which documents, processes, etc. are supported

- None
- United Nations Convention to Combat Desertification (UNCCD):
- United Nations Framework Convention on
- Climate Change (UNFCCC):
- Convention on Biological Diversity (CBD)
- UN Office for Disaster Risk Reduction (UNDRR):

- Food and Agriculture Organization (FAO):
- World Food Programme (WFP):
- Others:

35. Do you exchange with other projects related to drought?

- No
- Yes (please specify):

36. Which information from other projects would be particularly useful for your own project?

37. What is your most relevant drought-related experience (good practice or lesson learnt) that you would like to share with others?

38. Do you have any other information, question, or remarks regarding drought risk management?

Annex 3: Glossary¹⁴

Adaptation

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

Aridity

Characteristic of a climate relating to insufficiency or inadequacy of precipitation to maintain vegetation

Basin (catchment or watershed) An area having a common outlet for its surface runoff.

Crop failure

Abnormal reductions in crop yield such that is insufficient to meet the nutritional or economic needs of the community.

Desertification

Land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

Disaster

A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

Disaster Risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Disaster Risk Management (DRM)

Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

Drought

(1) Prolonged absence or marked deficiency of precipitation. (2) Period of abnormally dry weather sufficiently prolonged for the lack of precipitation to cause a serious hydrological imbalance.

Exposure

The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.

Food security

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension is integral to the concept of food security.

German Development Cooperation The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is Germany's leading provider of international cooperation services. As a federal enterprise, it supports the German Government in achieving its objectives in the field of international cooperation for sustainable development. GIZ is fully owned by the Federal Republic of Germany, represented as the shareholder by the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry of Finance (BMF).

Hazard

A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Hazards may be natural, anthropogenic or socio-natural in origin.

¹⁴ sourced from: WMO, FAO, UNCCD, IDMP

Soil moisture

Moisture contained in that portion of the soil which lies above the water table, including the water vapour contained in the soil pores. Sometimes it refers strictly to the humidity contained in the root zone of the plants.

Land degradation

Reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns such as: soil erosion caused by wind and/or water; deterioration of the physical, chemical and biological or economic properties of soil; and long-term loss of natural vegetation.

Water security

The availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies.

Weather

State of the atmosphere at a particular time, as defined by the various meteorological elements.