Drought risk management around the globe –
Showing examples from German Development Cooperation
OVERVIEW & MAIN FINDINGS

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1. **Survey Overview** – aim / purpose

The *Sector Project on Soil Protection, Desertification, Sustainable Land Management* (SV BoDeN) is supporting the BMZ as German UNCCD National Focal Point. 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 be feeding into the recently created international working group on drought under UNCCD.

Furthermore, it is planned to:

- develop knowledge products to showcase practical experience from partner countries of German development cooperation (projects funded by BMZ, BMU and AA and implemented by GIZ and KfW);
- feed information into the process of the 2021 Special Report on Drought as part of the Global Assessment Report on Disaster Risk Reduction under UNDRR;
- foster knowledge transfer among projects of German Development Cooperation.
1. **Survey Overview** – target group / response rate / countries

- 69 contacted projects from bilateral German Development Cooperation

- funded through the Federal Ministry for Economic Cooperation and Development (BMZ), German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) and the German Federal Foreign Office (AA)

- implemented through the German Development Cooperation (GIZ) and the Credit Institute for Reconstruction (KfW)

- 38 questions on drought-related measures

- beyond average response rate of: 39% (27 projects)

- operating projects from (bilateral projects as well as regional project operating in):
  - **Africa:** Burundi, Chad, Djibouti, Ethiopia, Kenya, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, Somalia, Sudan, Zambia
  - **Europe:** Albania, Kosovo, Montenegro, North Macedonia
  - **Asia:** Laos, Thailand, Turkmenistan, Uzbekistan, Vietnam
68% of projects engage directly with droughts

Although drought is not part of the objectives of one third of the replying projects, still droughts might endanger the success of the projects. Only 16% of the projects operating in drought-prone areas think that droughts is not relevant to fulfill for the project’s success
2. Project Frameworks – relevance / sector focus

- The replying projects are mainly working in the agriculture, water and/or infrastructure sector.
- All projects engaged in drought management (15) are at least operating in two sectors simultaneously.
- The majority of projects also work simultaneously on multiple spatial scales: 19% international, 27% national, 27% subnational, 27% local.

![Sectors Chart]

fig. 2.: Sectors
2. Project Frameworks – relevance / target groups / cooperation

- more than two-thirds (16) of all responding projects report to or share information with international entities
- more projects report to UNFCCC than UNCCD despite strong land-focus of all interventions
- strong anthropocentric focus with only 1 project exchanging with CBD
- on the ground the project collaborate with:
  - NGOs (73%)
  - multilaterals (46%)
  - self-help groups (33%)
  - research institutes (33%)
  - regional organization (33%)
3. Drought Risk Management – focus

- all surveyed projects engage in risk mitigation measures; almost every other in preparedness activities;

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

measures applied by responding projects, challenges and opportunities identified by responding projects and showing practical examples
3.1. Monitoring and Early warning - measures / challenges / opportunities

◆ **measures**: Standardized Precipitation Index is most widely used for monitoring, but it also proves to be inadequate for a differentiated early warnings. Combined Drought Index, incl. vegetation cover and Soil Moisture Deficit Index are crucial additional components so are socio-economic parameters resulting from vulnerability assessment that enable more tailor-made warnings as well as responses. National Disaster Management Centres play a pivotal role.

◆ **challenges**: Most often described challenges relate to finding cost-effective technologies, the lack of human capacities as well as the discrepancies between data and actual situation. Furthermore, a weakly defined communication systems plus differences between national and provincial level were reported.

◆ **opportunities**: Therefore, standardized communication protocols are recommended to enhance effectiveness. Furthermore, data sharing and regional cooperation is seen as an integral part for pro-active measures as well as for bringing down costs. In addition, premium subsidy funding from the African Risk Capacity (ARC) holds the potential free up financial resources. Closely monitoring one factor in regards to drought might have another application in a different field, creating synergies between public and private sector, e.g.
3.1. Monitoring and Early warning

- **Sample project: Transboundary Water Cooperation for the Lower Mekong Basin – Cambodia, Laos, Thailand, Vietnam**

  This transboundary project supports the Mekong River Commission with the installation and application of monitoring instruments. Furthermore, it enhances knowledge sharing amongst all partnering countries by developing comprehensive guidelines on joined water resource management and early warning.

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Further information: [https://www.giz.de/en/worldwide/72426.html](https://www.giz.de/en/worldwide/72426.html)
3.2. Vulnerability Assessment – measures / challenges / opportunities

- **measures**: Most projects utilize standardized approaches such as WFP’s Vulnerability Assessment (VAM) or MARISCO, but also tailor-made excel-based. Integrated Water Quality and Quantity Simulation Model (IQQM) and the Soil and Water Assessment Tool (SWAT) highlighted as well, suitable for national contexts as well as transboundary watersheds.

- **challenges**: On the ground, project managers are often confronted with limited data access as well as constrains stemming from data robustness, resolution and inconsistency in parameter definitions. The last point seem especially true in transboundary setups. In a number of cases the applied modelling does not sufficient reflect the given complexity, creating gaps between model and actual situation. Even if differentiated assessments have been made, some projects experience reluctance of policy-makers to integrate the findings. Many countries lack human and financial resources to role out comprehensive assessments (with ARC tools, e.g.). Migration often remains a under-assessed factor, be it temporal or permanent.

- **opportunities**: More support could be generated with detailed information on the sum of social and economical losses due to droughts, stating the case for pro-active interventions. Peer-to-peer learning amongst affected countries is seen as a cost effective opportunity. Given that drought is high up on many country’s agendas, there is the potential to influence policy with robust long-term forecasts. Regional drought vulnerability needs to be re-assessed on a regular base (every 5-10 years, e.g.).
3.2. Vulnerability Assessment

❖ Sample project: Accelerate Water and Agricultural Resources Efficiency (AWARE) - Zambia

To projects objective is to enhance climate-smart water resources management and efficient agricultural water use for smallholders in the Lower Kafue Sub-Catchment. A holistic risk assessments was a crucial component to this project’s accomplishments.

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Further information: [https://www.giz.de/projektdaten/projects.action?request_locale=de_DE&pn=201820992](https://www.giz.de/projektdaten/projects.action?request_locale=de_DE&pn=201820992)
3.3. Mitigation Measures – measures / challenges / opportunities

**biophysical measures**: A wide spectrum of interventions is being utilized by GDC, ranging from water harvesting techniques to irrigation schemes, from intercropping and conservation agriculture, all the way to new drought tolerant crop varieties and rotation scheme when it comes to agriculture. On the hand, pasture rehabilitation and livestock breeding programs are the most often utilized measures in the context of pastoralism. Reforestation or afforestation sometimes is an additional component in holistic landscape programs.

**challenges**: The most often described challenges are overstocking beyond carrying capacities when it comes to pastoralism, coupled with a weak sense of community ownership in regards to countermeasures, as well as ambiguities in terms of tenure. Uncertainties in regards to groundwater levels and salinity affect both, pastoralist and agriculturalist alike. In addition, development experts seem to be confronted with expectation for going external input as well as missing of long-term data for evaluation and decision-making.

**opportunities**: The biggest opportunities is seen by working directly with the people on the land, who are themselves “the best experts”. Peer learning from innovation farmer can play a key role, so the involvement of entire communities in landscape intervention, as well as the utilization of modern technology for improved management. A final point is often described agroforestry systems and multi-purpose tree interventions to enhance agro-ecological functionality.
3.3. Mitigation Measures – measures / challenges / opportunities

- **socio-political measures**: Various strategies aiming at community-based land use planning, including catchment-management plans or establishment of user committees and village cooperatives gave promising results in GDC. The described socio-political interventions also included cash-for-work programs as well as innovative finance approached and awareness-raising campaigns targeting at drought-related components, be it water provision or food security.

- **challenges**: While the challenges are very context specific, nonetheless a set of experiences seem to multiply across the board, jeopardizing results. To name the three most prominent ones: lack of political commitment; lack of local resources to enforce and implement catchment-management plans; and difficulties in cross-border planning. It can be added that many also identified the need for long-term guidance in transformation processes related to drought.

- **opportunities**: On the other hand, promising results were made with grassroots approaches like water user associations, as well as increased implementation rates witnessed through improved ownership structures.
3.3. Mitigation Measures

- **Sample project: Strengthening the drought resilience of the pastoral and agro-pastoral population in the Afar region - Ethiopia**

  This project aims conservation of soil and water resources to strengthen drought resilience and increase food security. The goal is to enable the population to sustainably manage their natural resources even under changing climatic conditions. 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 and production.

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3.4. Response and Recovery – measures / challenges / opportunities

- **measures:** Only one third of those projects working with specific drought focus include response and recovery measures, whereas 13% (two projects) do follow the official national drought declaration and 26% (four projects) apply their own trigger schemes.

- **challenges:** Despite the fact that all but two of those projects working with specific drought focus could give positive feedback on the existence of management plans. It became clear that this seldom involves a specific national drought management plan, but a wide variety of documents such as: Water Sector Plans, Watershed Contingency Plans, Regional Drought Management Strategies, National Development Plans, or even national plans for agrarian transformation.

- **opportunities:** More often than not, there is need for the development of national or regional response and recovery plans, aiming at multi-sectoral coverage through collaboration with other entities, including the further expansion and harmonized in the realm of rapid response mechanisms.
3.4. Response and Recovery

Sample project: African Risk Capacity (ARC) - Drought insurance schemes

The main objective of this good practice example for post-disaster measures is to reduce the vulnerability by improving access to insurance. In order to take out insurance, a state must draw up detailed emergency plans. Two satellites continuously measure how much rain falls in individual regions. As part of the early warning system, software calculates the severity of a drought. If there is too little rain or the precipitation is too volatile, the insurance is triggered at a contractually defined threshold. So far, six African countries have been directly supported through means of KfW via ARC: Burkina Faso, Gambia, Mauritania, Senegal and Zimbabwe.

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Further information: https://www.kfw-entwicklungsbank.de/ipfz/Projektdatenbank/Duerreversicherung-fuer-Afrika-ARC-30517.htm
4. **Recommendations** - policy / implementation / research / communications

Given the case-study specific experiences from the survey, the following list provides an overview of derived findings, without claiming to be comprehensive nor representative beyond the field of bilateral development assistance. However, the concluded recommendations - structured according to the differentiated working fields of the individual IWG members - hint towards shortcomings and friction lines described in general literature as well. This survey was able to substantiate and fortify these findings through practical experiences from on the ground.

- **for policy-maker:** - assistance in the development and coordination of standardised national drought plans
  - improved reporting schemes and communication protocols

- **for practitioners:** - increasing cross-sectorial engagement
  - stronger integration of agroforestry and forestry components in holistic landscape restoration approaches
  - enhancing social protection schemes and finance mechanisms
4. Recommendations – policy / implementation / research / communications

- **for research**: - need for easy to measure outcome parameters
  - strengthened knowledge-sharing between local & international spheres
  - reflections upon the anthropocentric dimensions of DCM

- **for communicators**: - showcasing best practise examples
  - establishment of knowledge network
  - creation of knowledge products to enhance understanding amongst sectors

*source: Brüntrup & Tsegai 2019*