



EVALUATION OF INTERVENTIONS FOR CLIMATE CHANGE ADAPTATION

*Agriculture, water, environmental protection,
Nationally Determined Contributions and
National Adaptation Plans*

Executive Summary

2023



DEval

GERMAN
INSTITUTE FOR
DEVELOPMENT
EVALUATION

SUMMARY

Background

Climate change is one of the greatest global challenges in the history of mankind. The consequences of climate change jeopardise the preservation and development of natural and human systems and are already causing high ecological, social and economic costs today. The poorest countries are particularly affected by the negative impacts of climate change. At the same time, there are still opportunities to strengthen sustainability and resilience for both people and the environment. When it comes to dealing with the impacts of climate change, adaptation plays a special role.

German development cooperation (DC) supports developing and emerging countries in adapting to climate change. The adaptation-relevant official development assistance (ODA) from (bilateral and multilateral) budget funds that the Federal Government reported to the Organisation for Economic Co-operation and Development (OECD) for 2020 amounted to around USD 2.15 billion. Between 2011 and 2020, 62 percent of German adaptation financing was implemented in the three major adaptation-relevant sectors of environmental protection (USD 3.4 billion), agriculture (USD 2.5 billion) and water (USD 2 billion).

But to what extent do German adaptation interventions achieve their objectives and make a sustainable contribution to strengthening climate resilience in the partner countries? The present evaluation aims to answer this question with regard to the effectiveness, impact and sustainability of adaptation interventions in the agriculture and water sectors and in coastal protection – an area of the environmental sector. It examines three global objectives of adaptation interventions (see Doswald et al., 2020): “better responses to shocks and stressors”, “increased adaptive capacities” and “enhanced enabling environment”. The evaluation groups the interventions into nature-based solutions, built infrastructure/structural interventions, technological options, informational/educational interventions, institutional/planning/policy/law/regulatory interventions, financial/market mechanisms and social/behavioural interventions. It also aims to assess how effectively German DC provides cross-sectoral support for the Nationally Determined Contributions (NDCs) in conjunction with implementing the Paris Agreement and the processes involved in the National Adaptation Plans (NAPs).

This report forms the second evaluation module in the modular evaluation of German DC adaptation interventions performed by the German Institute for Development Evaluation (DEval). It supplements the findings of the portfolio and allocation analysis (“Evaluation module 1”) by Noltze and Rauschenbach (2019), the evaluation of instruments for managing residual climate risks (“Evaluation module 3”) by Leppert et al. (2021) and the synthesis report on the evaluation by Noltze et al. (2023).

The purpose of the evaluation is to support the future alignment and impact-oriented further development of the German DC adaptation portfolio. The conclusions and recommendations of the evaluation are aimed at the Federal Ministry for Economic Cooperation and Development (BMZ) and the Funding Programme of the International Climate Initiative (IKI), which the Federal Ministry for Economic Affairs and Climate Action (BMWK) has been implementing since 2022 in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office (AA). They are also aimed at the governmental implementing organisations KfW Development Bank (KfW) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

Methodology

The effectiveness is assessed based on a synthesis of project evaluations of German adaptation interventions and a systematic review of studies and evaluations of international adaptation interventions. The evaluation synthesis provides evidence of the existence and direction of the effectiveness and impact of German interventions. The systematic review adds findings relating to the direction and strength of international evidence. Moreover, to answer the question about the contributions towards strengthening climate resilience, the evaluation draws on a rigorous geospatial impact evaluation of irrigation infrastructure interventions in Mali. It assesses to what extent the interventions contribute towards economic, social and

ecological resilience, help to strengthen the livelihoods of rural communities and mitigate the negative effects of climate change in the long term. Finally, the analysis is supplemented by comparative case studies on cross-sectoral interventions to support NDCs and NAP processes. In the case studies, the evaluation assesses the extent to which objectives are achieved and the contribution of the interventions.

Results, conclusions and recommendations

Effectiveness, impact and sustainability of adaptation interventions in the agriculture and water sectors and in the area of coastal protection

The results of the evaluation synthesis reveal that only 16 percent of German DC adaptation interventions evaluated in the agriculture and water sectors and in the area of coastal protection demonstrate an achievement of objectives. For the vast majority of the interventions, it is therefore not apparent to what extent they 1) are implemented in a climate vulnerability context, 2) have adaptation-related objectives and 3) are designed to deal with climate risks. Overall, only 20 percent of the adaptation commitments in the agriculture, water and environmental protection sectors go to countries with a high to very high climate risk, whereas around 60 percent go to countries with a low to very low risk. The remaining 20 percent of the funding goes to countries with a medium risk. The portfolio and allocation analysis of the evaluation by Noltze and Rauschenbach (2019) also shows that, although Germany tends to allocate adaptation funds to climate-vulnerable countries, the degree of vulnerability has no impact on the level of funding.

However, comparing these results with the results of the systematic review indicates that the achievement of the objectives of German adaptation interventions is underestimated. According to the systematic review, the achievement of objectives can be observed for around 56 percent of international interventions. However, German DC sets different priorities in comparison to international interventions, so the findings are only transferable to a limited extent. German DC concentrates primarily on the objective of enhancing the enabling environment. Accordingly, it focuses mainly on interventions to improve the institutional and regulatory framework conditions. According to the results of the systematic review, this objective plays a much smaller role in international adaptation interventions, which means that there is also less evidence here with regard to the achievement of objectives. Evidence from international studies and evaluations indicates a higher level of achievement only for the following objectives: “better responses to shocks and stressors” in the area of coastal protection and “increased adaptive capacities” in the agriculture and water sectors. Overall, therefore, German DC adaptation interventions partially fulfil the benchmark with regard to achieving the objectives of better responding to shocks and stressors and increasing adaptive capacities. Due to a lack of impact evidence from studies and evaluations, the benchmark regarding the objective of enhancing the enabling environment is subject to a higher degree of uncertainty and is thus rated as barely fulfilled.

Nature-based solutions, infrastructure interventions and informational/educational interventions prove to be particularly effective for achieving the objectives of German DC in better responding to shocks and stressors and increasing adaptive capacities. The German adaptation interventions prove to be less effective overall with regard to the objective of enhancing the enabling environment. The particularly effective area of nature-based solutions constitutes the focus of German DC in the agriculture/water sectors and coastal protection area. In the water sector and in the area of coastal protection, German DC focuses on effective infrastructure interventions. In the water sector, informational and educational interventions also prove to be effective. Overall, this evaluation illustrates that adaptation interventions fulfil their benchmarks for the achievement of objectives if they a) take place in a climate vulnerability context, b) set themselves adaptation-related objectives and c) are based on a theory of change geared towards dealing with climate risks.

Changes in terms of strengthening climate resilience are apparent or foreseeable only in a few cases on the basis of the evaluation synthesis. There is hardly any evidence here that the German interventions have an impact. The systematic review, too, shows that the contributions of interventions decrease from outcomes (interventions’ direct objectives) to impacts (interventions’ contribution to higher-level development changes). The greatest positive impacts are seen in the water and agriculture sectors. In contrast, some

negative impacts are seen at this level in the area of coastal protection, for instance when a resettlement intervention involves negative social changes. Adaptation interventions partially fulfil their benchmarks with regard to contributions towards strengthening climate resilience in the agriculture and water sectors, but barely do so in the area of coastal protection.

The innovative geospatial impact evaluation of irrigation infrastructure interventions in Mali shows that German DC contributions to strengthen climate resilience can be evaluated rigorously and comprehensively. The analysis shows that the irrigation interventions increase agricultural production, thereby improving food security and child health among the target group. Further contributions entail increasing household income and ensuring gender equality. There is additional potential in peacebuilding and ecological impacts. The evaluation shows that the climate vulnerability of the Malian population in the project regions has decreased and therefore their resilience has increased. Moreover, the analysis of effects over time showed that the positive impacts can be preserved over a period of at least ten years. After a certain time, however, unintended effects also arise – such as a displacement of the potential for conflict or a reduction in food security in communities living further away. This specific individual case suggests that irrigation infrastructure interventions by German DC in fragile and climate-vulnerable contexts in the African Sahel region have the potential to fulfil the benchmark for adaptation interventions with regard to contributions to increase climate resilience, to generate positive co-benefits and to avoid maladaptation.

Based on this assessment and taking account of the results of the portfolio and allocation analysis (Noltze and Rauschenbach, 2019) and the evaluation of instruments for managing residual climate risks (Leppert et al., 2021), the modular adaptation evaluation makes the following recommendation in its synthesis report:

“The BMZ and the IKI Funding Programme should expand the funding for nature-based solutions and infrastructure interventions

- *to help deal with shocks and stressors more effectively in particularly climate-vulnerable contexts*
- *and help increase adaptive capacities in countries where this capacity is low.”*

In terms of putting the recommendation into practice, there would be additional impact potential in combining various interventions if they also include informational and educational interventions. Interventions with the objective of enhancing the enabling environment, in particular, could be examined using specific theories of change and indicators to establish their effectiveness and impact. The funding could also be expanded in particular in cooperation with other donors and (multilateral) organisations.

(Noltze et al., 2023, page x).

Effectiveness of adaptation interventions in supporting NDCs and NAP processes

In the context of the comparative case study analyses, it is apparent that the objective of integrating climate adaptation into the national policies of partner countries is largely achieved. The interventions contribute towards the achievement of objectives by providing demand-oriented services. Participatory and cooperative elements increase the ownership of the partner countries. Thanks to its long-standing expertise and support for international initiatives such as the NDC Partnership (NDCP) and the NAP Global Network (NAP GN), German DC is recognised as a relevant cooperation partner and knowledge provider. As a result of changes in the context of the interventions, however, the objectives of German DC are only partially achieved in the form originally planned and are barely achieved within the intended time frames. Accordingly, potential outcomes are delayed or do not arise in the planned form. Adaptation interventions with the objective of directly supporting NDCs and NAP processes mostly fulfil the benchmark of integrating adaptation into the national policies of partner countries.

With a view to the implementation of the Paris Agreement, the Federal Government also sees a great need for action in the partner countries of German DC. The BMZ has set itself the goal of expanding its engagement to support NDCs and NAP processes in the partner countries of German DC. The least developed countries (LDCs) in particular should benefit from support in this area in future. In light of the findings of this evaluation regarding the achievement of objectives and the contributions of German DC, it appears reasonable to extend the existing engagement to support NDCs and NAP processes. At the same time, there has been a lack of instruments of financial cooperation up to now. This evaluation sees potential in policy-based financing with incentive-promoting funding volumes, with a view to strengthening ownership and further increasing ambitions. The evaluation therefore gives rise to the following recommendations:

Recommendation 1: The BMZ should review the use of policy-based financing to promote NDCs and NAP processes and – taking account of the results of the review – make greater use of it in order to

- achieve the objective of expanding direct support for NDCs and NAP processes
- and contribute to increasing ambitions in the partner countries in the context of the Paris Agreement.

In terms of putting “recommendation 1” into practice, the BMZ could take up G7 discussions of policy-based financing by incorporating the discussion results into the internal decision-making process regarding direct support for NDCs and NAP processes. In conjunction with designing the instrument to meet needs and accommodate specific contexts, the BMZ could draw on recent experience with the reform financing instrument, as a form of policy-based financing, and further expand such financing forms – in line with the aspiration of the BMZ’s Africa strategy. In addition, the BMZ could look into the possibility of strategically promoting policy-based financing – in connection with technical support and knowledge management – via the NDCP and NAP GN.

Recommendation 2: The BMZ should increase the financing for bilateral interventions in LDCs and incorporate the bilateral partner countries into the exchange of knowledge and experience of the global NDCP and NAP GN initiatives in order to

- achieve the objective of expanding direct support for NDCs and NAP processes
- and thus promote comprehensive interventions to deal with climate risks.

In terms of putting “recommendation 2” into practice, the BMZ could work in cooperation with the IKI Funding Programme to address the needs of LDC partner countries that go beyond support from global initiatives, sector programmes and global projects, and review the options regarding bilateral interventions. Considering the shared departmental responsibility of the IKI (BMWK, BMUV and AA), the BMZ could advocate interdepartmental exchange and promote joint management of the interdepartmental portfolio to support NDC and NAP processes in LDCs.

Strengthening the evidence-based programming of the adaptation portfolio

The evaluation synthesis has examined evaluations of German adaptation interventions. As a result of inadequate references to climate adaptation, the learning and accountability function of the project evaluations proves to be limited. Although 30 to 50 percent of all completed GIZ and KfW interventions are evaluated five years after the end of the project at the latest, there is currently only sporadic evidence of the effectiveness of German adaptation interventions. Compared with the share of adaptation interventions, which account for around 17 percent of all German DC interventions (2011–2019), the share of related evaluations seems to be too low (less than ten percent of all GIZ and KfW project evaluations). By drawing on international evidence, this evaluation could partly close this gap. However, it was not completely possible as a result of the particular priority areas of German DC, for instance with regard to the objective of enhancing the enabling environment.

Based on this assessment and taking account of the results of the portfolio and allocation analysis (Noltze and Rauschenbach, 2019) and the evaluation of instruments for managing residual climate risks (Leppert et al., 2021), the modular adaptation evaluation makes the following recommendation in its synthesis report:

The BMZ and the IKI Funding Programme should strengthen the evidence-based programming of the adaptation portfolio

- *in order to make the German adaptation portfolio more effective*
- *and thus contribute to strengthening climate resilience in the partner countries.*

In terms of putting the recommendation into practice, the BMZ and the IKI Funding Programme could compel the implementing organisations to make adaptation interventions easier to evaluate and increase the quality of evaluation – by systematically including the vulnerability context and using adaptation-related theories of change, objectives and indicators. The evaluations of the implementing organisations could also address unintended effects and the risk of maladaptation better than they have done up to now. To supplement evidence from project evaluations, rigorous (accompanying) evaluations could be promoted, especially in “evidence-scarce” areas of the portfolio. Together with the implementing organisations, the BMZ and the IKI Funding Programme could improve the framework conditions for systematic learning – also through cross-sectional analyses.”

(Noltze et al., 2023, page ix)

This is an excerpt from the publication "Evaluation of Interventions for Climate Change Adaptation. Agriculture, Water, Environmental Protection, Nationally Determined Contributions and National Adaptation Plans". Download the full report here: <https://www.deval.org/en/evaluations/our-evaluations/evaluation-of-adaptation-interventions-in-agriculture-water-and-coastal-protection>