KNOWING WHAT WORKS

Central project evaluation

Capacity development to strengthen drought resilience in the Ethiopian lowlands (CDSDR), Project number: 2014.2009.0

Development of capacities to strengthen the drought resilience of the agro-pastoral population in the lowlands of Ethiopia (EKF/SDR), Project number: 2012.9761.3

Evaluation Report

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Abbreviations

AfDB	African Development Bank
AI	Agro-input
ASAL	Arid and semi-arid land
ASP	Agro-service provider
ATVET	Agricultural Technical and Vocational Education and Training
BMZ	German Federal Ministry for Economic Cooperation and Development
BoANRD	Bureau of Agriculture and Natural Resource Development
BoLPD	Bureau of Livestock and Pastoralist Development
BoPAD	Bureau of Pastoral and Agro-Pastoral Development
CAADP	Comprehensive Africa Agriculture Development Programme
CDSDR	Capacity Development to strengthen drought resilience in the Ethiopian lowlands (project title)
CPE	Central Project Evaluations
CPP	Country Programming Paper
DREAM	Development of Resilience Enhancing Alternative Measures for the Ethiopian Lowlands conference
DVR	Dry valley rehabilitation
EKF	Energy and climate fund
FMB	*Department for technical and methodological support* Fach- und Methodenbereich
GIS	Geographic information system
GIZ	German Corporation for International Cooperation GmbH Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
GTP	Growth and Transformation Plan
IDP	Internally displaced person
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority for Development
KfW	Kreditanstalt für Wiederaufbau – German Development Bank
LNOB	Leave no one behind (principle)
MoA	Ministry of Agriculture
NGO	Non-governmental organisation
NRM	Natural resource management
OECD/DAC	Organisation for Economic Co-operation and Development/Development Assistance Committee
PADO	Pastoral and Agro-pastoral Development Office
PCA	Peace and Conflict Assessment
PN	Project number
ROMA	Rapid Outcome Monitoring Assessment

SDC	Swiss Development Cooperation
SDG	Sustainable Development Goals
SDR	Strengthening Drought Resilience
SLM	Sustainable Land Management
SMART	Specific, measurable, achievable, relevant, and time-bound
ToC	Theory of change
ToR	Terms of reference
VSLA	Village Savings and Loans Association
WASH	Water, Sanitation and Hygiene
WB	World Bank
WDA	Water Development Association
WHC	Water harvesting and conservation
WS	Workshop
WSW	Water-spreading weir

The project at a glance

Ethiopia, Afar and Somali region:

Project 1: Capacity development to strengthen drought resilience in the Ethiopian lowlands (CDSDR 1)
Project 2: Development of capacities to strengthen the drought resilience of the agro-pastoral population in the lowlands of Ethiopia (EKF/SDR)

Project number	PN 2014.2009.0 (CDSDR I)	PN 2012.9761.3 (SDR/EKF)
Creditor reporting system code(s)	14.2009.0 – 31110 Agricultural policy and administration	12.9761.3 – 31130 Agricultural land resources
Project objective	Strengthening drought resilience in the Ethiopian lowlands of Ethiopia	Improving the livelihoods of the affected population in the Afar and Somali region and increasing their resilience
Project term	November 2015 to July 2019	July 2013 to June 2020
Project value	EUR 7.5 million	EUR 5.6 million
Commissioning party	German Federal Ministry for Economic Cooperation and Development (BMZ)	German Federal Ministry for Economic Cooperation and Development (BMZ) Swiss Agency for Development and Cooperation, Switzerland (SDC)
Lead executing agency	German Corporation for International Cooperation GmbH (GIZ)	
Implementing organisations (in the partner country)	German Corporation for International Cooperation GmbH (GIZ)	German Corporation for International Cooperation GmbH (GIZ)
Other development organisations involved	-	Swiss Agency for Development and Cooperation, Switzerland (SDC)
Target group(s)	Direct target groups (for both projects): Experts and executives of the national Ministry of Agriculture (MoA) and the regional agricultural extension agencies in Afar and Somali such as: • Regional authorities for land rights administration in Afar • Territorial administration • Pastoral and agro-pastoral population in the regions of Afar and Somali	Indirect target groups (for both projects): Pastoral and agro-pastoral population in the regions of Afar and Somali. In numbers: 2,500 (Afar) and 3,125 (Somali) agro-pastoralists households (of which at least 450 Afar and 620 Somali are women)

1 Evaluation objectives and questions

This chapter aims to describe the purpose of the evaluation, the standard evaluation criteria, and additional stakeholders' knowledge interests and evaluation questions.

1.1 Evaluation objectives

Central project evaluations of projects commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) fulfil three basic functions: they support evidence-based decisions, promote transparency and accountability, and foster organisational learning within the scope of contributing to effective knowledge management. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH structures the planning, implementation and use of evaluations so that the contribution the evaluation process and the evaluation findings make to these basic functions is optimised (GIZ 2018a).

The project management requested an independent evaluation in September 2019, due to a negative and discrediting documentary broadcast on German television (Frontal 21) on 3 September 2019. The evaluation also contributes to an evaluation coverage of 40% of all GIZ projects with a total contract value of more than EUR 3,000,000. This final evaluation is carried out after the completion of the two projects. CDSDR ended in July 2019 and SDR ended June 2020. The inception phase took place in October 2020 with a short observer mission in Afar and Somali during the rainy season between late October and early November 2020. The evaluation mission was conducted on-site from 27 March to 21 April 2021.

The intended users of the evaluation are all stakeholders of the project, particularly:

- The projects, which use the lessons learnt to improve the delivery of service and the achievement of their objectives in the follow-on projects/programmes.
- GIZ, for upscaling and for internal and external publications for knowledge management within the organisation as well as for transparency and accountability towards the client BMZ and the interested public.
- Partners such as the Ministry of Agriculture (MoA), development agencies like Kreditanstalt für Wiederaufbau (KfW) and donors (e.g. World Bank, African Development Bank), for whom the evaluation results are of interest for further decision-making processes.
- The BMZ, which uses the evaluation results for continuous political dialogue, steering and strategy development in the environmental sector and in Ethiopia.

In the meantime, for the CDSDR I project, the second follow-up project (CDSDR III) is already being designed. Therefore, the evaluation results should help the design, and strategical and operational planning of this third phase; especially for the upscaling process.

1.2 Evaluation questions

The project is assessed on the basis of standardised evaluation criteria and questions to ensure comparability by GIZ. This is based on the Organisation for Economic Co-operation and Development (OECD)/Development Assistance Committee (DAC) evaluation criteria (updated 2020) for international cooperation and the evaluation criteria for German bilateral cooperation (in German): **relevance, coherence, efficiency**, **effectiveness**, **impact** and **sustainability**.

Specific assessment dimensions and analytical questions have been derived from this framework. These form the basis for all central project evaluations in GIZ and can be found in the **evaluation matrix** (Annex 1). In addition, contributions to the 2030 Agenda for Sustainable Development and its principles are taken into

account as well as cross-cutting issues such as gender, the environment, conflict sensitivity and human rights. Also, aspects regarding the quality of implementation are included in all OECD/DAC criteria.

During the inception phase, additional knowledge needs were identified by BMZ, KfW and other relevant project partners (ministries) and stakeholders (see Table 1). Overall, however, stakeholders – including BMZ as the client – consider the above assessment dimensions and analysis questions to be coherent and sufficient. The evaluation findings are also useful in highlighting synergies between projects in the sector portfolio and the extent to which the project was able to adapt to a fragile and changing context. Project staff and representatives of partner ministries emphasised their interest in the overall picture of outputs, outcomes, impacts, and their sustainability and in how target groups perceive the project's outputs and outcomes. BMZ and KfW have an explicit interest in the extent to which the project approach is suitable for upscaling.

Appropriate additional questions were developed for the technical evaluation of the watershed measures, which were criticised in particular by the media documentation Frontal 21[1] (see effectiveness section 4.4).

Table 1: Knowledge interests by main evaluation stakeholder groups

Evaluation stakeholder group	Knowledge interests in evaluation/ additional evaluation questions	Relevant section in this report
BMZ	• Both projects are part of a very broad GIZ programme. How well does the coordination, cooperation and interlinking of the different projects of the programme work? What are the challenges? What improvements would be necessary? • The projects were developed without a BMZ country strategy and on the basis of funding opportunities that arose. What are the key lessons learnt from the accumulation of these diverse projects? • The World Bank (WB), the African Development Bank (AfDB) and KfW also support the sector (fields of action) of natural resource management, with a range of projects with different objectives, interventions and project volumes. They are all operating in a context without a real (functioning) government framework programme, additionally with an often-changing strategic orientation. What lessons can be learnt from the interaction? What leverage does one (GIZ) have as an implementing organisation when there are already these big player programmes of WB and AfDB? How should GIZ position itself in the frame of German development cooperation and with financial cooperation? • Are the approaches of technical cooperation from the projects suitable to be adopted by these large actors? If they were scalable, what would be required? How can they be better anchored systematically? • Are the effort, return, impact and costs of the projects in a reasonable ratio to really make a difference? With which instruments must one proceed?	Answered in chapter 4.3 on **coherence**
KfW	• To what extent is the project approach and suitable conditions amenable to a scaling-up process for large donors such as the WB or AfDB?	Included in **relevance, impact and sustainability** criteria and **recommendations**

[1] https://www.zdf.de/politik/frontal-21/deutsche-entwicklungshilfe-in-aethiopien-100.html (accessed 30.05.2020).

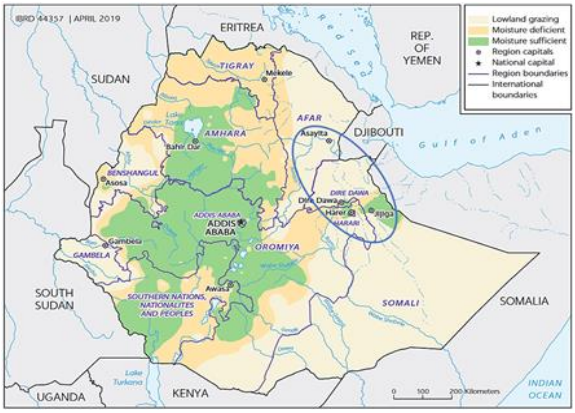
2 Object of the evaluation

This chapter aims to define the evaluation object, including the theory of change, and results hypotheses.

2.1 Definition of the evaluation object

The object of the evaluation is the technical cooperation intervention for capacity development to 'Strengthening Drought Resilience in the lowlands of Ethiopia (CDSDR; PN 2014.2009.0)' and 'Improving the livelihoods of the affected population in the Afar and Somali region and increasing their resilience' (SDR; PN 2012.9761.3), which are referred to in the following as 'the project' (or 'intervention', if both are meant), with the respective abbreviations.

Figure 1: Map of operational area (Afar and Somali, blue circle, Source: Based on Shapiro et al. 2017)



The technical cooperation project CDSDR is central to the development cooperation programme 'Strengthening the drought resilience of the agro-pastoral population in the lowlands of Ethiopia'. On behalf of German development cooperation, the project bundles competence development, knowledge management and support for partner networks as a contribution to the implementation of the Ethiopian country strategy – Ethiopia Country Programming Paper (CPP 2012). The project CDSDR had a duration of almost four years (45 months in total, from November 2015 to July 2019) and a total contribution of EUR 7.5 million from German technical cooperation. EUR 6 million of this was used and EUR 1.5 million was transferred to the successor project CDSDR II (PN: 17.2150.5-001.00) (GIZ Project Final Report 2019a, 2020a).

The SDR project, also a technical cooperation measure, aimed to 'Improve the livelihoods of the affected population in the Afar and Somali region and increasing their resilience'. Natural resource management (NRM) –especially water catchment approaches – were tested to strengthen drought resilience approaches that are well adapted to the living conditions of the pastoral and agro-pastoral population and to the geographical and climatic conditions of the Eastern Lowlands (states of Afar and Somali). SDR had a duration of 7 years (84 months in total, from July 2013 to June 2020) and was co-financed by the Swiss Agency for Development and Cooperation (SDC) with CHF 6 million. The SDC budget was planned separately together with the Somali and MoA administrations for a specific logframe commissioned by Switzerland (GIZ 2020a). To obtain BMZ approval, the logframe of the first project had to be adapted. SDR had a total budget of EUR 9.6 million, EUR 4 million from German technical cooperation (BMZ). Approximately EUR 4.8 million of this was used. Most of the remaining funds came from SDC funds and were retransferred to SDR. In 2018 most of the implementation in the Somali region was not possible due to the major political reform and the change of administration that followed. At the time of the evaluation, both projects were in the final accounting stage.

The two projects being evaluated were the prelude to a broader GIZ drought resilience programme in the lowlands of Afar and Somali: the Strengthening Drought Resilience in Arid and Semi-Arid Lowlands Programme (SDR-ASAL). The evaluation brief was limited to SDR and CDSDR (Terms of Reference–ToRs). Nevertheless, the other projects should be considered to some extent as they are interlinked with the projects being evaluated (ToRs). The SDR-ASAL programme consists of six projects at the time of evaluation (see Figure 1) and represent an integrated NRM programme to strengthen drought resilience of pastoral and agro-

pastoral communities in Afar and Somali state. In general, they are characterised by (i) collaborative development of innovations through multi-stakeholder processes and partnerships; (ii) multi- and transdisciplinary holistic systems perspective; (iii) focus on value chains, and (iv) shared learning through demand-side policies and social networks of innovators.

The main changes sought are institutional transformation and improved innovation and resilience capacities, as well as capacities to respond to changing contexts. Innovations are embedded in a defined political, socio-economic and agro-climatic context. The impact is improved resilience and food security for pastoralist and agro-pastoralist populations in Afar and Somali. The evaluation considered these aspects within the framework of the GIZ evaluation matrix, focusing primarily on the objectives and results of the CDSDR-1 and SDR/EKF projects; while not losing sight of the other projects

Financing and co-financing

For the general overview; to the technical cooperation projects evaluated, financial cooperation projects are running in parallel. These are financed by German Government and implemented through KfW (SDR I and SDR II, bilateralised with the Intergovernmental Authority for Development (IGAD) fund). In June 2019, the World Bank and International Fund for Agricultural Development (IFAD) started the Lowlands Livelihood Resilience Project in six lowland regions with a budget of over USD 450 million. These projects have a NRM component too but are not part of the evaluation here. A cooperation with the follow-on project CDSDR III in the Afar and Somali regions is being discussed (GIZ 2020a).

The SDR project was financed within the framework of the Energy and Climate Fund (EKF) with a focus on climate adaptation and was commissioned with a budget of EUR 4 million over a period of 7/2013 to 8/2018. The first budget change in June 2014 included a Swiss co-financing by the Swiss Agency for Development and Co-operation (SDC) with CHF 400,000, which was mainly used for the implementation of preliminary studies. With the second amendment in February 2016, the project was supplemented by a Swiss co-financing of CHF 5,600,000, mainly for implementation in Somali state.

In April 2016, a consolidated programme proposal for the development cooperation programme, ‘Strengthening drought resilience in Ethiopia’, was submitted to the BMZ, into which the SDR 1 project was integrated. Due to external problems (political change in the country, security restrictions, and a reorganisation process in the MoA), the second Swiss co-financing could only be partially spent. The remaining funds were reallocated to the CDSDR II project (PN 2017.2150.5) (GIZ 2019a).

Geographical delimitation, scope and rationale

Pastoral systems in Eastern Africa have been affected by recurrent droughts and floods for decades, exacerbating poverty and local conflicts, especially over natural resources. GIZ has introduced an innovation to turn floods into productive use by constructing water-spreading weirs (WSW) as an entry point to capture the torrential floods that occur in the nearby highlands and distribute them to the grazing areas and croplands of the lowland pastoral systems in Ethiopia (Amede et al. 2020).

Both projects are implemented in the eastern lowland regional states of Afar and Somali. Field activities are controlled from field offices in Jijiga (Somali), Semera and Chifra (Afar). The SDR project had a strong focus on the so-called dry valleys rehabilitation concept (DVR). The whole programme is managed from the capital Addis Ababa office (GIZ 2019a, 2020a).

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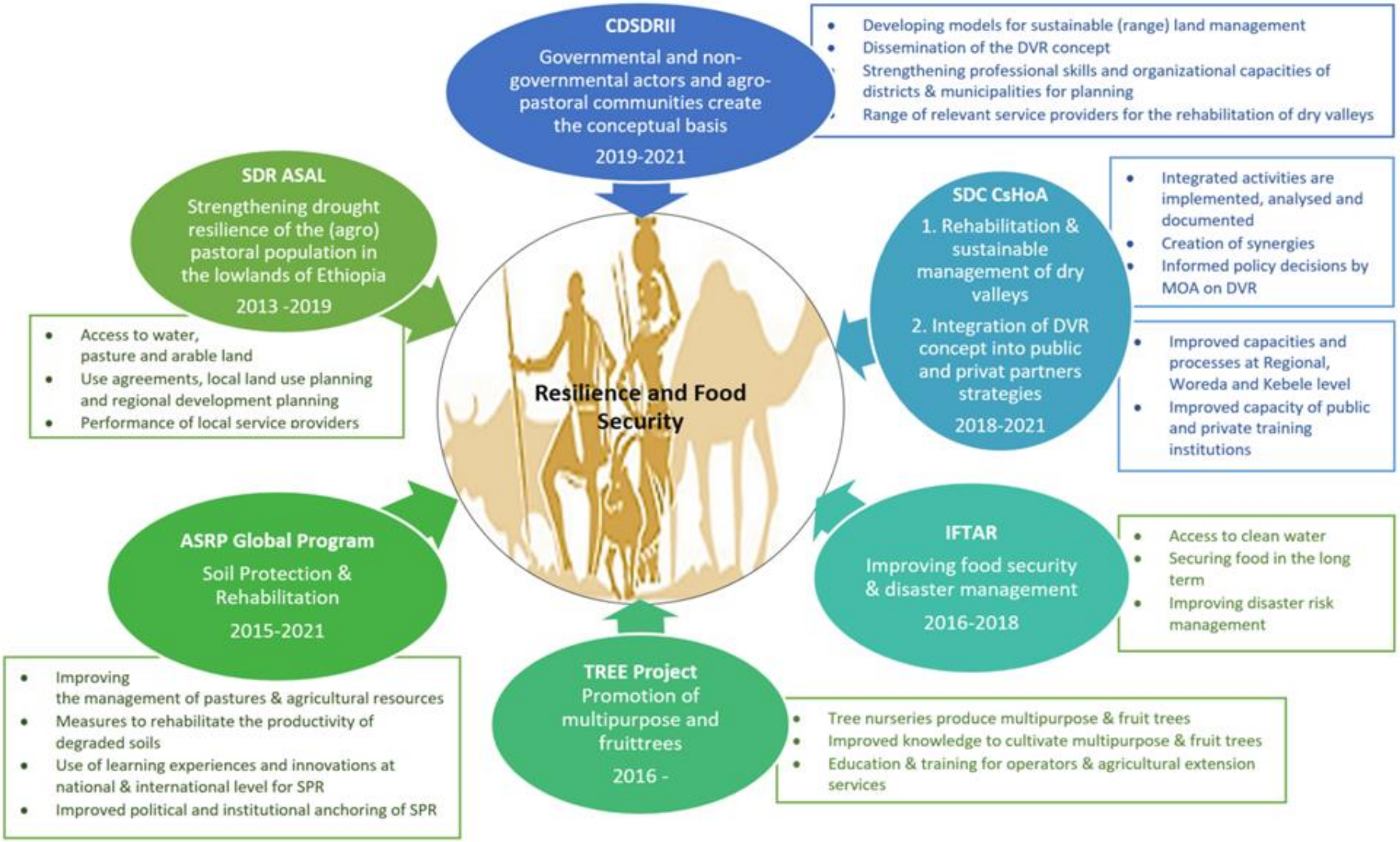
Figure 2: The current integrated NRM programme SDR–ASAL (Source: Hendrik Hempel)



Legend: The text in the respective oval contains the abbreviation of the project title (bold printed), as well as the project objective (shortened). The bullet points in the boxes represent the respective planned outputs.

The political and sectoral context and the framework conditions and levels of intervention

Ethiopia's economic development is heavily dependent on agriculture. Plant and animal production are essential livelihoods for 79% of the population. More than 25 million people live in the arid and semi-arid lowlands of Ethiopia, 7 million of them in Afar and Somali states (GIZ 2016a). A significant percentage of people live below the poverty line in Afar (36%) and Somali (33%). The majority of the population's livelihood depends on traditional, semi-nomadic animal husbandry (transhumance). The fundamentally adapted traditional livelihoods of the predominantly agro-pastoral population in the arid and semi-arid Eastern Lowlands of Ethiopia are threatened by climate change, more frequent and longer-lasting droughts, the earlier expropriation of traditional pastures for irrigation farming (e.g. through government programmes) and high population growth (GIZ Project Proposal 2013a). Pastoralist and agro-pastoralist communities that inhabit these areas with moisture-stressed lowlands and harsh climatic conditions are still marginalised by major political and programmatic development processes. The institutional and personal capacities for implementing and managing development measures also remain largely underdeveloped. The livelihood systems based on extensive livestock breeding could not withstand the growing pressure exerted on them by the ever-growing human and livestock population. Increasing erosion, degradation and desertification result in a population with increasingly fewer reserves to cope with climatic events such as droughts and floods. Extreme climatic conditions (drought, flood, etc.) aggravate the situation in this fragile ecosystem and complicate the supply of food, forage and water. The progressive degradation of natural resources and the declining carrying capacity of pasture resources, exacerbated by climate change, have exposed communities in these areas to frequent food security crises. The resilience of the pastoral and agro-pastoral population is dramatically threatened (core problem 1) (GIZ Project proposal 2013a, 2015a, LUH 2014, REGLAP 2011). The increase in the frequency and intensity of drought disasters in these regions has led to a rethinking of development strategies and actions for pastoral communities.

In addition, the capacities of governmental service providers (extension services) who work with the pastoral and agro-pastoral populations to develop or offer future-oriented solutions are weak. The institutional actors lack management, cooperation and networking instruments to strengthen drought resilience in the regions of Afar and Somali (core problem 2) (GIZ Project proposal 2013a, 2015a).

Floodwater harvesting and the dry valley rehabilitation approach (DVR)

The dry valley rehabilitation approach (DVR) is based on the ancient practices of floodwater control from the early Egyptian and Chinese eras some 2,000 years BC, which later evolved in Ethiopia. Diversion structures built from soil and timber along river courses allowed the irrigation of soils for crops and fodder. Similar structures evolved to capture water from storm floods that arise from mountainous catchment areas. The flood waters are diverted onto low-lying crop-land via physical barriers. At the same time, the settling sediments in the flood water enhance and enrich the surrounding soils with nutrients resulting in increases in crop and fodder production. Such structures became common in arid and semi-arid regions before being neglected with urban developments, mechanised well drilling and modern irrigation technologies near population centres. These and other water harvesting techniques are considered to be the most economical water management interventions for rainfall regimes of 100–500 mm/year (Bender et al. 2011).

These ancient technologies are now receiving increased attention as nomads practising pastoralism in arid and semi-arid lands struggle to cope with increasing climate variabilities, droughts, floods and severe land degradation. Furthermore, in many semi-arid countries there is socio-political pressure to settle pastoralists and/or they want to settle themselves, especially because of better access to social services such as education, drinking water, health and medicine, etc. The Afar and Somali regions in Ethiopia are examples of this trend (Amede et al. 2020).

BMZ through KfW and GIZ has been supporting watershed management including WSW and other water harvesting techniques such as stone walls to develop degraded dry river valleys in Eritrea since 1995 (Watershed Management Project Mai Aini, Eritrea), and in Mali, Niger and Chad since the 2000s (Bender et al. 2011).

These principles and challenges of introducing, implementing and maintaining WSW are well explained in the GIZ publication 'Water-spreading weirs for the development of degraded dry river valleys' (GIZ 2012).
In addition, to counteract the famine caused by the drought in 2015/16, short and medium-term emergency activities were also carried out (funded by BMZ and SDC) by securing the food and water supply for the population in Afar and Somali. An additional EUR 2.5 million for CDSDR I came from BMZ.

Water management under cultural and religious norms in Ethiopia

An important consideration in the management of water resources in the Muslim dominated lowlands of Ethiopia is the role of Islam. Water is considered a blessing from God that gives and sustains life, purifies humankind and the earth, similar to Christian beliefs (Farqui et al. 2001). Islam recognised from its beginnings that it was a water-fragile civilisation and developed some key principles for its use and management (as well as innovative water engineering). Under sharia law (which translated means the way or path to the watering place) a Muslim cannot hoard excess water but is obliged to allow others to benefit from it. Water is considered a community resource to which all have a right of access to and use of. Accordingly, Islam prioritises use rights, the first being the right to quench thirst by humans, second, the right of cattle and other animals and third, the right of irrigation. In addition, plants and the environment should receive water as God's gift and water should not be polluted. Further the Quran states that water (and other resources) should not be wasted.
This then brings in the concept of human-environment interactions that are meant to be respected under Islam. It also introduces the need to manage water and use it for sustenance in moderation given its recognised scarcity. Water management under Islam requires mutual consultation *(shura)* involving all, including women. Water is considered a free resource but recovering costs for delivering or regulating water is allowed opening the way for transactional water trading. Many of these principles are already incorporated into traditional customs and rights of the population. This background then sets the scene for considered discussions by the communities in Afar and Somali on how to sustainably use and manage water and promote its conservation. Thus, there is a strong religious and cultural justification for participatory planning of water resources including the establishment of local committees that are fully representative of all stakeholders. It is therefore worth considering how the projects have approached these aspects in the planning of WSW and other conservation measures, in capacity development and the project's role in empowerment of communities to manage water.

Stakeholder structures of the projects

The main project partner and political executing agency at federal level is the Ethiopian Ministry of Agriculture (MoA) for both projects. The main implementing partners for the SDR project at regional levels are the Bureau of Pastoral and Agricultural Development (BoPAD) for the state of Afar and the Bureau of Livestock and Pastoral Development (BoLPD) and the Bureau of Agriculture and Natural Resource Development (BoLAND) for the state of Somali (GIZ Project Final Report 2020a), responsible for the rural development, land rights and territorial administration.
Owing to restructuring in the government, the executing agency then changed. From 2015 on, the Ministry of Livestock and Fisheries and from 2018 on the Ministry of Agriculture were the political executing agencies. Due to an internal restructuring of the SDC, the application process for the second phase, which was planned for 2018, could not be implemented on schedule. This led to two no-cost extensions of the project until June 2020 (GIZ 2019 2020a).
A major challenge was the coordination between donors and the regional and national authorities, as well as the rapid implementation with limited implementation capacities of the authorities. The individual projects with their specific fields of action and technical approaches piloted integrated activities that were conceived as complementary in terms of both space and content. The shortest possible intervals between the planning, implementation and evaluation of the activities were intended to provide early adaptive management changes (GIZ Project Final Report 2020a). The CDSDR project had overarching control. It ensured that the results and findings were adequately processed to be anchored with the institutional partners. It moderated the learning loops at the district level and transferred the results from the regions of Afar and Somali to the national level to

ensure efficient knowledge management, effective institutional development, needs-oriented capacity development and appropriate framework conditions (GIZ Project Final Report 2019a).

The target groups of the projects

The direct target groups for the CDSDR I project were the national and district government authorities responsible for agriculture, rural development and livestock promotion. Their task was to accompany the interventions within the framework of the national rural development programme, to inform the target group about the interventions and its objectives, to clarify and accompany the necessary questions regarding land rights and territorial administration, as well as to ensure the legal requirements for the approval of the construction of WSW. The MoA was responsible for approving the aggregate operational plans, while the district offices conclude agreements on the region-specific operational plans. In addition, the MoA and the district offices were responsible for guidance and implementation, knowledge management and joint monitoring missions, as well as training and implementing their own activities (GIZ Project proposal 2013a).
The indirect target groups (final beneficiaries) were the pastoral and agro-pastoral societies in the regions of Afar and Somali. In number, 2,500 (Afar) and 3,125 (Somali) agro-pastoralist households were targeted, of which at least 450 (Afar) and 620 (Somali) are women. This target group was directly supported by the SDR project through water spreading, harvesting and conservation infrastructure in the heavily degraded and eroded dry valleys, as well as through agronomic and livestock measures to improve pastoral and agro-pastoral production. In addition, interested members of this target group were trained as masons through vocational training; a professional qualification that is urgently needed for the construction and maintenance of the weirs (GIZ Project Final Report 2019a, 2020a).

2.2 Results model including hypotheses

The theory of change (ToC) is essential for conducting a contribution analysis regarding all six OECD/DAC criteria (GIZ CPE 2018a, 2018b). The ToC maps the outcome hypotheses; that is, it describes the cause-and-effect relationships assumed for the project to deliver its results and achieve its objectives and impact contributions. At GIZ, ToCs are depicted as results models; the corresponding results hypotheses are explained narratively.
It is noteworthy that the project was originally planned as a pilot, aimed at testing appropriate measures. This was rejected by the Ethiopian Government at the time, particularly on the reasoning that ‘the country no longer needs pilot projects with regard to natural resource management’, arguing that there are already enough technologies and approaches to choose from. As a result, one must understand the SDR logframe as a compromise: the outputs (fields of action) were formulated in a very broad, objective-open and strategy-flexible way.
For both projects a results model was not explicitly designed during project planning. A project logic for CDSDR was created during the implementation in 2017. It was reviewed and updated during the inception phase together with the project team (see Figure 3)

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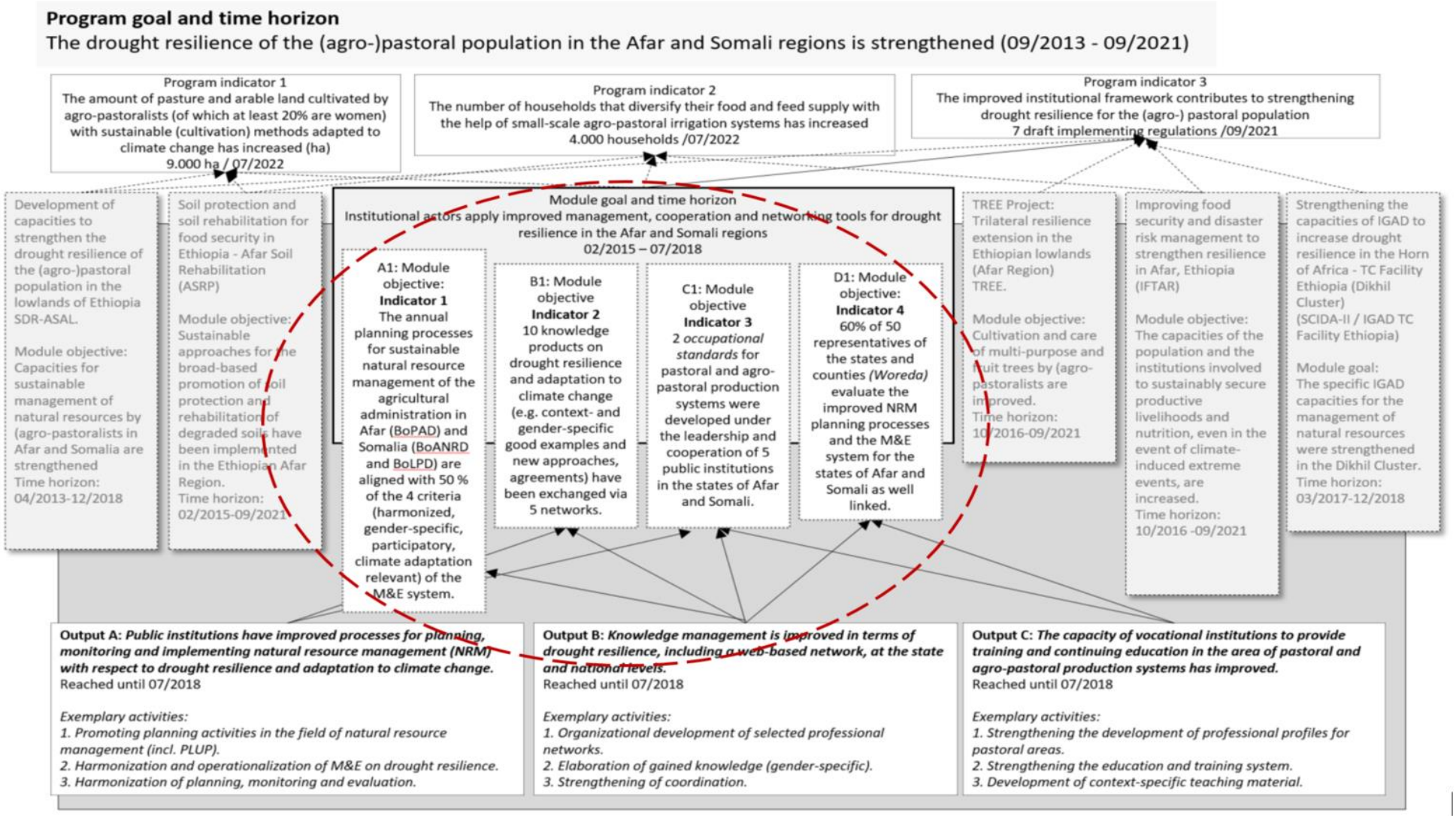
Figure 3: Current project logic of the CDSDR project (October 2020), adapted during inception phase



Legend: the dotted line marks the system boundary of the project.

Table 2 shows the module objectives (outcomes) of both projects. They are placed alongside each other for comparison. Each project module objective has four outcome indicators, indicated here with baseline and target values (GIZ Project proposal 2013a, 2015a).

Table 2: Module (outcome) indicators together with base and target values by comparison

CDSDR **Module objective (outcome):**	**SDR/EKF** **Module objective (outcome):**
Institutional actors are applying improved management, cooperation and networking tools for drought resilience in the states of Afar and Somali.	Capacities for sustainable management of natural resources by agro-pastoralists in Afar and Somali have been strengthened.
Outcome indicator 1: The annual planning processes for the sustainable management of natural resources of the agricultural administration in Afar (BoPAD) and Somali (BoANRD and BoLPD) are aligned with 50% of the four criteria (harmonised, gender-specific, participatory, climate adaptation relevant) of the monitoring and evaluation (M&E) system.	**Outcome indicator 1:** 2,500 (Afar) and 3,125 (Somali) (Agro) pastoralists (of which at least 450/620 are women) apply new, resource-saving and climate-adapted cultivation and production methods for them to increase and diversify feed and food production.
• **Baseline value: 0** • **Target value: 2 of 4 M&E criteria are implemented in the annual planning process**	• Baseline value: 0 • Target value: 2,500 Afar and 3,125 Somali, of which 450 Afar and 620 Somali respectively are women
Outcome indicator 2: Ten knowledge products on drought resilience and adaptation to climate change (e.g. context and gender-specific good examples and new approaches, agreements) have been exchanged through five networks.	**Outcome indicator 2:** 250 (Afar) and 310 (Somali) women have taken up income-generating activities such as the production, processing and marketing of feed and food or the fattening and trading of animals.
• **Baseline value: 0** • **Target value: 10 knowledge products exchanged in 5 networks**	• Baseline value: 0 household • Target value: 250 Afar and 310 Somali
Outcome indicator 3: Two occupational standards geared to pastoral and agro-pastoral production systems were developed under the leadership and cooperation of five public institutions in the states of Afar and Somali.	**Outcome indicator 3:** Five of the locally planned NRM measures in each of the Afar and Somali regions have been incorporated into the respective regional development plans.
• **Baseline value: 0 (no occupational profiles for pastoral and agro-pastoral production systems)** • **Target value: 2 occupational profiles were developed by five public institutions**	• Baseline value: 0 • Target value: per region 5 (NRM measures)
Outcome indicator 4: 60% of 50 representatives of the states and counties (woreda) assess the improved NRM planning processes and the M&E system for the states of Afar and Somali as well linked.	**Outcome indicator 4:** Five additional policies, strategies or implementing regulations at the national level take into account the concerns of agro-pastoralists for the preservation of their livelihoods.
• **Baseline value: 0 (improved methods not yet available)** • **Target value: 6 0% of 50 representatives rate the planning process and M&E as well linked**	• Baseline value: 0 • Target value: 5 (policies, strategies or implementing regulations)

The results hypothesis for CDSDR

The project documents of both projects (GIZ Project proposal 2013a, 2015a) show result hypotheses, which corresponded more to the description of outputs than to a hypothesis according to an 'If... then...' formulation with the mention of actors and some exemplary activities. Therefore, they were reformulated here according to the GIZ guidelines. Two results hypotheses are formulated for each project, which refer to the relationship between output and outcome. In addition, two impact hypotheses are formulated per project, each relating to the relationship outcome – impact (GIZ CPE 2018a, 2018b).

Starting with CDSDR, the project's methodological approach is aimed at strengthening relevant institutions (outcome level) to improve drought resilience and to promote the population's adaptation to climate change (contributions to impact). The project follows a multi-level approach (meso and macro level) across three fields of action: (A) planning, monitoring and implementation of drought resilience measures by public institutions; (B)

improved knowledge management and networking on drought resilience; and (C) training and further qualification on pastoral and agro-pastoral production systems by vocational training institutions (GIZ 2019a).

The module objective (outcome) for CDSDR is: 'Institutional actors apply improved management, cooperation and networking instruments for drought resilience in the Afar and Somali regions.'

The following two results hypotheses (RH) are formulated:

- CDSDR-RH1: If context and gender-specific teaching material such as good practice examples and manuals, as well as strategies and guidelines in the field of NRM with regard to drought resilience and adaptation to climate change are available at regional and national level (output), technical and professional networks will be supported and their knowledge management is improved. This will benefit affected districts in planning and monitoring drought resilience measures (outcome).
- CDSDR-RH2: Through the graduate and postgraduate (in service) training of advisors in vocational training institutions (output), based on a competence development and professional profile, pastoral and agro-pastoral production systems can be advised more effectively (outcome).

Along these result hypotheses, the relationship between output and outcome is analysed with the contribution analysis (dimension 2) in section 4.4 on 'effectiveness'.

The results hypotheses linking outcome with the impact level for the CDSDR project state:

- CDSDR-RH3: If the knowledge management and planning processes regarding drought resilience and adaptation to climate change for pastoral and agro-pastoral production systems of public institutions such as the MoA and its subordinate authorities at provincial and district level are improved (outcome), and national/regional budgets will allocate funds for increased implementation of the innovations developed, more land is thus sustainably cultivated and the agro-pastoral population's income increases (impact).
- CDSDR-RH4: Professional advice and innovative NRM by national and local authorities for the pastoral and agro-pastoral population in Afar and Somali states (outcome), improves food and nutrition security, livelihoods and living conditions, while overall improved drought resilience is contributing to Sustainable Development Goal (SDG) 1 (No Poverty), SDG 2 (Zero Hunger), SDG 13 (Capacity Building for Adaptation to Climate Change) and SDG 15 (Protection and Sustainable Use of Terrestrial Ecosystems and Combating Desertification) (impact).

The results hypothesis for SDR/EKF

For SDR only rudimentary sketches of a result model existed, without real results hypotheses. The SDR model (Figure 4) was created during the inception workshop together with the project team and updated based on the proposal, the results matrix and the progress reports.

The methodological approach of the SDR/EKF project aimed to strengthen pastoral and agro-pastoral communities and relevant district institutions to improve the management of natural resources and to promote the adaptation of the population to drought and climate change resilience

The SDR/EKF project also pursues a multi-level approach (micro and meso level). Indicator D ('The conditions for improving the political framework for conflict-sensitive, integrated rural development in the Afar region have been created') and Output D ('Policy dialogues to share experiences and knowledge from the Afar and Somali regions were conducted at national level and in cooperation with IGAD at international level') had also a macro dimension before the CDSDR project started. The project SDR covers four fields of action: A. Increasing and diversifying feed and food production through innovative, resource-saving and climate-adapted cultivation and production methods; B. Income generation through production, processing and marketing of feed and food, as well as fattening and trade of livestock; C. Incorporation of sustainable NRM in regional development plans;

and D. Integration of agro-pastoralists' concerns for the conservation of their interests into policies, strategies and implementing regulations at meso level (GIZ Project proposal 2013a; see Figure 4).
According to the GIZ definition, the module objective is at least partially within the system boundaries (green circle in Figure 4). Risks (as red boxes) and assumptions (as yellow boxes) for the required results are listed for SDR (see Figure 4). Since the green bubble in the results model represents the system boundary, the results influenced by the SDR project focus on the concrete support of the target group, including temporary emergency measures.

As a typical technical cooperation project, the integration of emergency aid measures was unforeseen and therefore not planned. But in the particularly precarious period of drought (2017/18), the project concentrated on mitigating emergency situations, providing important inputs (e.g. feed and water supply) and addressing core problems (lack of income and availability of money) with immediate measures (cash for work) in most affected areas in Afar and Somali for the rural population (GIZ 2018a, 2018b).

The WSW have not been identified with a specific output indicator (GIZ Project proposal 2013a). However, the WSW are one of the NRM innovative measures; harvesting and collection of rainwater and can be considered as the cornerstone of SDR. Therefore, a specific indicator and a results hypothesis is proposed here. Actually, indicator A.2 could have been more clearly tailored to the WSW. The proposal for a more specific WSW indicator is:

> Indicator A2b: X pilot WSW measures in Afar and Somali, carried out by agro-pastoralists, significantly improve rainwater infiltration and lead to a diversification and/or intensification of feed and basic food production on the rehabilitated areas at least on Y ha.

The SDR module objective (outcome) states: 'Capacities for sustainable management of natural resources by agro-pastoralists in Afar and Somali have been strengthened.'

The following two results hypotheses are formulated:

- SDR-RH1: Through innovative infrastructure for harnessing seasonal floods (WSW as pilot measures) (output), carried out by trained agro-pastoralists degraded dry valleys are rehabilitated (outcome).
- SDR-RH2: Through coordinated local participatory land use planning and regional development planning and through binding use agreements at community level regarding the use of natural resources in the regions (output), locally planned NRM measures adapted to climate change are sustainably anchored in the annual plans (outcome).

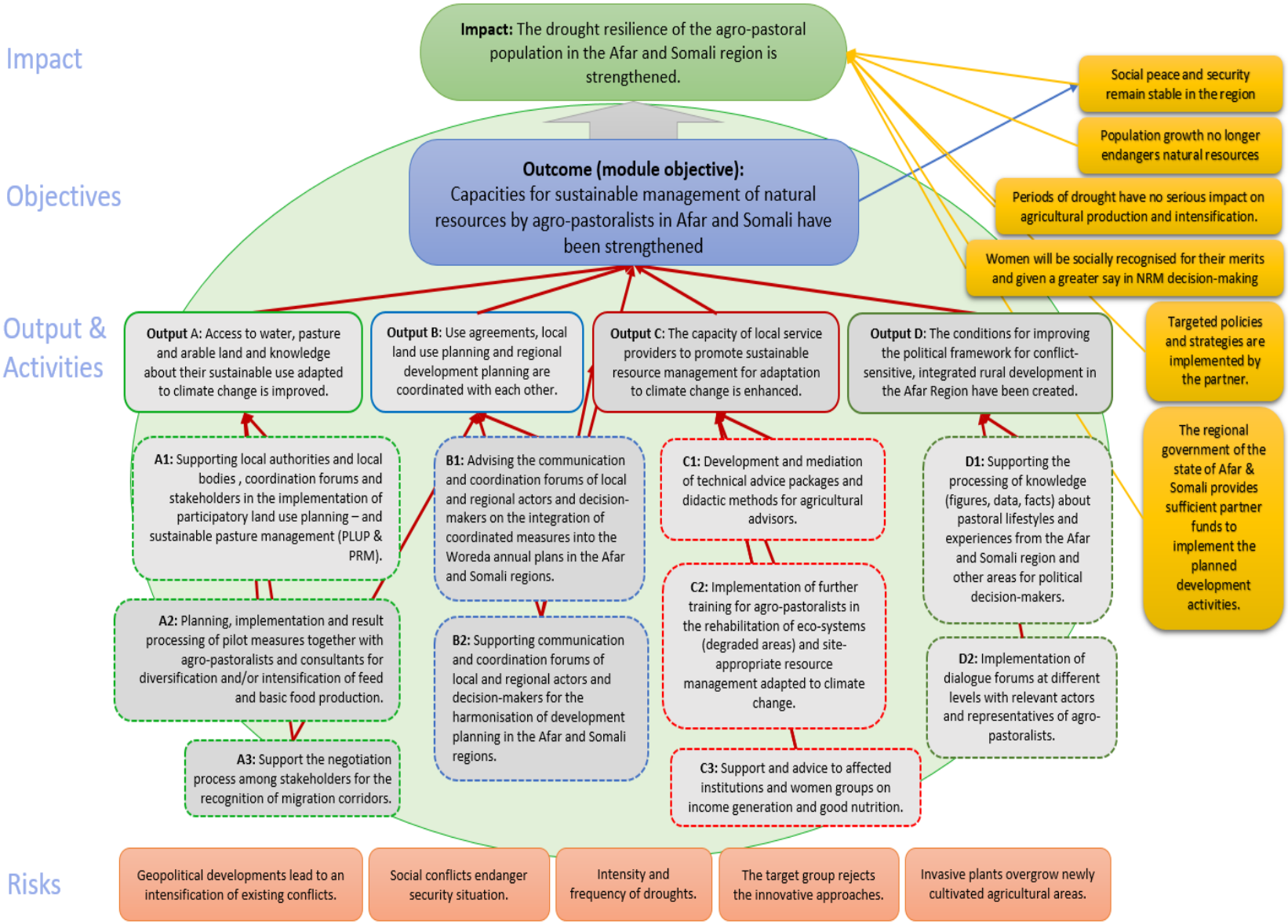
Along these result hypotheses, the relationship between output and outcome is analysed with the contribution analysis (dimension 2) in section 4.4 on 'effectiveness'.

The general assumption of both projects was that the Ethiopian state would actively support and promote the paradigm shift towards a situation-adapted development of the lowland regions from 2012 onwards. As part of the IGAD[2] Drought Disaster Resilience Strengthening Initiative, the Ethiopian MoA had previously produced the Country Programming Paper to End Drought Emergencies (CPP) for Ethiopia, which was intended to take account of the special features of the areas used for pastoral purposes (GIZ 2019a). However, these assumptions did not sufficiently take into account the time required, nor the variety of challenges in the area of institutional strengthening, for example high staff turnover and a low level of professional qualifications in the civil service.

Discussions with ministry officials and local government administration officials raised the issue of how the work of the projects relate to improving livelihoods. The following results hypothesis were defined:

[2] The Intergovernmental Authority on Development (IGAD) is a regional organisation of eight countries (Sudan, South Sudan, Eritrea, Ethiopia, Djibouti, Somalia, Kenya and Uganda) in north-east Africa based in Djibouti.

Figure 4: The result model of the SDR project



- SDR-RH 3: The introduction of WSW and the expected diversification of fodder and crop production (outcome) will help the transitions from (i) subsistence farming to partial market-oriented farming where, as a minimum, families are no longer net food buyers or reliant on food aid; and (ii) are protected from exiting agriculture. These transitions are necessary as a result of increasing population, migrations, decreasing land availability and unsustainable production units and the trend from pastoralism to agro-pastoralism (impact).
- SDR-RH 4: The rehabilitation of degraded land and increased, diversified feed and food production through climate-adapted cultivation and production methods (outcome) will significantly increase the income of the pastoral and agro-pastoral population based on production, processing and marketing in the Afar and Somali states (impact).
- SDR-RH 5: Through advanced training for agricultural advisors and improved political and administrative framework conditions, the capacities for climate-adapted management of natural resources are sustainably improved (outcome). This increases the resilience of the pastoral and agro-pastoral population and contributes to SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 13 (Capacity building for adaptation to climate change) and SDG 15 (Protection and sustainable use of terrestrial ecosystems and combating desertification) (impact).

This would require the project to monitor changes in activities from subsistence to self-sufficiency, and further commercial farming, as well as migration to urban areas. However, this was not foreseen in the monitoring plan; and regrettably not taken into account in the follow-up phase.

3 Evaluability and evaluation process

This chapter aims to clarify the availability and quality of data and the process of the evaluation.

3.1 Evaluability: data availability and quality

This section covers the following aspects:
- availability of essential documents,
- monitoring and baseline data including partner data, and
- secondary data.

Availability of essential documents

All central documents are available, except for the BMZ country strategy for Ethiopia (which is in planning) and documents on predecessor projects, as there were none.

Monitoring and baseline data including partner data

During the inception mission, the project team presented its achievements and results, and reflected on the challenges and successes. They provided information about unintended positive and negative results and how they were handled. In addition, the media documentation of Frontal 21 was discussed, including all relevant background information (GIZ PPP1). The project has a suitable instrument and method for measuring changes in the key indicators. There was a detailed introduction to the project's systematic monitoring system, which focuses on the results and effects of the intervention (GIZ PPP3). The contribution of the activities to the outcome indicators was listed under the module objective and described accordingly in quantitative or qualitative terms. This includes yield and biomass measurements, photo monitoring and fieldwork inventory,

field data collection, gully depth and sedimentation measurement and monitoring, simple impact monitoring and case stories, application survey, baseline and endline survey.

The majority of indicators are SMART (specific, measurable, achievable, relevant, and time-bound). For a few of them, the achievability depends on factors that are beyond the control of the project. For instance, SDR Indicator 4, which depends heavily on the convinced and continuous action of the responsible ministry (MoA) and its goodwill. CDSDR Indicator 1 also depends heavily on the goodwill and continuity of government agencies and probably needs much more time to be realised. CDSDR Indicator 4 is difficult to measure given staff movements and lack of M&E plans etc. within government agencies.

Some are quantitatively specific, but qualitatively more subjective. Other, similar experiences, for instance from West Africa or Eritrea, were not used here.

The sustainable and sufficient availability of water in the agro-pastoral context (for human as well as animal consumption, as well as for soil infiltration and ground water) is actually a key element for strengthening the resilience of these societies. The evaluation team therefore consider it as a very important key indicator. For this reason, an additional indicator covering the WSW approach was developed during the inception phase and is considered under ‘Effectiveness’.

The under-specified and not clearly distinguishable logframes, which regrettably were not revised later, do not adequately reflect the actual performance of the projects. This has far-reaching consequences of an insufficiently target-oriented monitoring and a distorted result for efficiency (see section 4.4). The monitoring sheet recorded the project activities related to the various outputs. Activity monitoring takes place continuously, while results monitoring is carried out once a year. This is also written and visualised (GIZ PPP3). All information collected for each indicator is well documented. The scope and schedule of the periodic data collection were in line with those of the project (GIZ Result matrix 2019b, 2020b)

All baseline values were set to ‘zero’, but were not adjusted after the baseline analysis. Basic information on the main indicators was collected at the beginning of the projects. Information from other baseline studies from other projects and organisations were considered and incorporated.

Secondary data

Secondary data and statistics from the partner country, the partners’ and other donors M&E systems were used where relevant. There was a limited exchange of experience with other international and German implementing organisations regarding the use of secondary data and the collection of primary data. Regrettably, the experience of a similar GTZ (former GIZ) project in 1995 in Eritrea (Watershed Management Mai Aini; project number unknown) was not available.

Limitations

Limitations to collecting data to meet evaluation objectives were:

- Partner change and staff turnover at regional level. In Afar, the heads of the Bureau of Pastoral/Agro-pastoral Development changed three times since 2013. In Somali, there were four different heads of the Bureau of Agriculture and Natural Resources. In 2016, a new partner was added with the creation of the Bureau of Livestock & Pastoral Development. However, this agency was transferred back to the Bureau of Agriculture and Natural Resources.

- Due to staff turnover in the line ministries, knowledge about projects could not always be clearly assigned.
- Data/information in the line ministries collected before the change of government was sometimes incomplete.
- Because of time constraints and Covid-19 pandemic restrictions, only a limited number of staff from the partners as well as the target groups with relevant in-depth knowledge could be interviewed.
- Not all evaluation team members were able to travel owing to pandemic travel restrictions.
- Conducting virtual interviews was made difficult by poor internet connections and interview partners who were difficult to understand.

The evaluation team attempted to minimise these limitations by using time-efficient data collection tools and interviewing specific stakeholder groups through telephone and Microsoft Teams software.

3.2 Evaluation process

This section covers the following aspects:

- milestones of the evaluation process,
- involvement of stakeholders,
- selection of interviewees,
- data analysis process,
- roles of international and local evaluators,
- (semi-)remote evaluation, and
- context and conflict sensitivity within the evaluation process.

Figure 5: Milestones of the evaluation process

During the inception phase, an observer mission in Afar and Somali was conducted by the national consultants 9–22 October 2020 to record the visible results immediately after the rainy season.

Involvement of stakeholders

All stakeholders were included in the evaluation as far as the context allowed. Partners at the national level (MoA) and at the state level were consulted. Staff of BMZ, SDC, KfW and GITEC[3] were included, also (former) staff of universities (Mekelle, Addis and Cambridge) and vocational schools, as well as staff of national and international non-governmental organisations (NGOs).

In addition, group interviews were conducted with women and men from more than 18 pastoral and agro-pastoral communities visited. These visits were all accompanied by a transect walk.

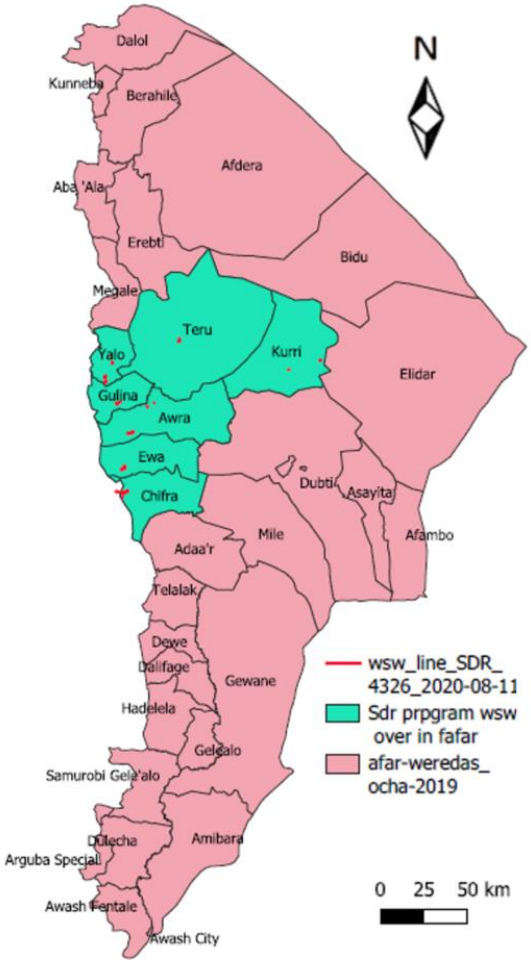
Selection of interviewees

The selection of interview partners was made jointly with the project management and the GIZ Evaluation Unit. These included all key persons from the project context, BMZ and SDC staff (domestic and foreign), staff from the partner structure and relevant staff from national universities, local NGOs and consultants from the

[3] GITEC-IGIP GmbH is an international company that offers cross-disciplinary consulting services for development projects.

implementation phase. In selecting the communities, both successful project sites and those more challenging were visited to have a comparison. Communities and sites were visited during the observer mission to get an impression of the impact of the measures immediately after the rainy season. During the evaluation phase, some of the same as well as additional project sites were selected for visits to get a comparison, as well as a broad overview and impression. The visits to the villages were complemented by transect walks.

Figure 6: The project sites visited during the observer and evaluation mission (Source: CDSDR Project documentation, GIZ PPP5 2020)



In Afar state, the project sites in the woredas Chifra, Ewa, Awra, Gulina and Yalo were visited.
In Somali State, the project sites in the woredas Gobka, Boladid, Amadle and Harre were visited (see map).

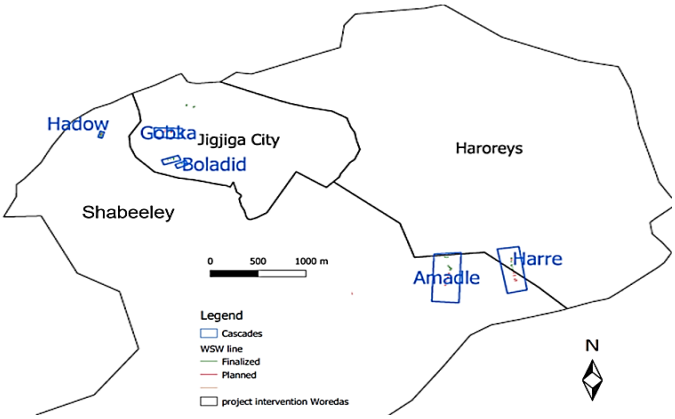


Table 3: List of evaluation stakeholders and selected participants (gender disaggregated)

Organisation/company/ target group	Overall number of persons involved in evaluation	No. of interview participants	No. of focus group participants	No. of workshop participants	No. of survey participants
Donors	3 f, 1 m	4			
BMZ	2 f				
SDC	1 f, 1 m				
GIZ	4 f, 9 m	13		12	
GIZ project team GIZ headquarters Germany	4 f, 8 m 1 m				
Partner organisations (direct target group)	19 m	19			
Ministry of Agriculture	3 m				
PADO, BoLAND	3 f, 13 m				
Other stakeholders	9 m	9			
District administration	5 m				
Adadale College and Afar Design enterprise	2 m				
Kreditanstalt für Wiederaufbau	1 m				
GITEC-IGIP GmbH	1 m				
Civil society and private sector actors	4 m	4			
ACPA	1 m				
AGRA	1 m				
AGFA	1 m				
Welthungerhilfe e.V.	1 m				
Universities and think tanks	5 m	5			
University Semera	1 m				
University Addis	3 m				
University Mekelle	1 m				
University Hohenheim	1 w				
Final beneficiaries/ indirect target groups (sum)	**43 f, 85 m**		**128**		
Pastoral and agro-pastoral community members from Jijiga South (Somali), Awra, Chifra, Ewa, Gilina, Kori, Teru, Godey, and Yallo (Afar)	43 f, 85 m		128		
Note: f = female; m = male					

Data analysis process

According to Mayring and Fenzl (Mayring and Fenzl 2014) qualitative content analysis is the basis for the data analysis process, where interviews are documented in bullet points and answer-oriented. Since the interviews are usually conducted jointly by the evaluation team, quality assurance is carried out by means of cross-reading. This is especially true when conducting online interviews, which inevitably result from the pandemic situation. The interview statements are coded by assigning the individual statements to the relevant evaluation questions and impact hypotheses and transferring them to Word documents according to the evaluation dimensions and questions with the corresponding number of the interview partner. The same procedure is followed with other sources. Information from documents is assigned to the questions and transferred to the corresponding Word documents. If necessary, quantitative data can also be assigned to the evaluation questions and impact hypotheses. Where possible, they are benchmarked against comparable data. In this way, evidence for each question is systematically compiled, clustered, and enables content analysis with clear attribution of information sources. Content analysis allows insight-based conclusions to be developed in a transparent manner. Contribution analysis, as a minimum standard for CPE, was also applied. Multiple feedback loops ensure that additional evidence can be identified and the contribution story is made plausible.

Research triangulation took place in both the initial and evaluation phases through documentation, videos, photos and interviews with various stakeholders.

Roles of international and local evaluators

The first international evaluator is the team leader of the evaluation team. He is a specialist in rural development and NRM, particularly in the context of pastoral and agro-pastoral lifestyle. Since 2006 he has been working as a freelance consultant for project evaluation, project design and strategy development and he has experience with the new CPE format.

The second international consultant has broad international experience in NRM, including technical and socio-economic aspects in African countries, as former Senior Research Manager and Director of the CGIAR[4] ‘Research Programme on Dryland Systems’. He is a co-founder of ‘Dryland Science for Development’ and was scientific coordinator of the multi-institutional ‘Initiative on the Economics of Land Degradation’. He has extensive publication experience.

The national evaluators are familiar with the topic of natural resource and dryland management, the region, the fragile context and have previously worked for the GIZ organisation. They do not yet have experience with the new CPE format. The national evaluators conducted the observer mission with initial field visits and discussions with stakeholders.

The evaluation reporting tasks will be divided on the basis of experiences and by mutual consent among the national and international evaluators. The international consultants are responsible for writing the inception- and the evaluation report, the national consultants are responsible for proofreading and data checking.

Semi-remote evaluation

Pandemic travel restrictions prevented the international evaluators from travelling to the partner country for the inception mission. The inception phase was therefore conducted as a semi-remote phase; that is, no on-site presence of the international evaluators. However, national evaluators conducted a field visit as an observer mission, and a virtual web-based inception workshop was attended by everyone.

[4] CGIAR, Consultative Group on International Agricultural Research, but better known by its initials.

The evaluation mission could only be conducted by one international evaluator with support from the national evaluators. Data were validated through sharing and reporting, daily backstopping, and photo documentation and analysis among the evaluation experts.
Due to the restrictions caused by the pandemic, the following interview methods were chosen:

- analysis of photo material collected during the observer mission at site interviews with the target groups (final beneficiaries), respecting the distance rules and hygiene measures;
- collection of quantitative data in the project region by local consultants and project staff;
- analysis of satellite imagery, photographic and video material.

The semi-remote design of the evaluation process was prepared in close collaboration with the GIZ Evaluation Unit and the GIZ country office.

The triangulation of data, methods and analysis as well as the representativeness of the interviewees was ensured by a broad survey, the language and country knowledge of the local experts as well as the long and diverse experience in the region and the topic that all four consultants brought to the table. This, along with feedback from project staff, helped to avoid bias problems related to respondents. The neutrality and independence of the interviewers was guaranteed at all times.

Context and conflict sensitivity within the evaluation process

The evaluators are experienced in working in fragile contexts. They have a high level of conflict sensitivity (according to Do No Harm) in order to reduce risks and avoid unintended, indirect negative outcomes at all costs, or that partners and actors suffer unintended harm. Both international evaluators have high cultural sensitivity due to previous long-term stays in the region. The national experts are very familiar with the regional conditions and particularities. Specific local traditions and norms were inquired about and taken into account in advance, as well as the perception of the evaluation by partners and stakeholders. To avoid any conflicts, the local communities/groups were fully informed about the evaluation visit, its purpose and the use of the results, and their permission was obtained to proceed with the evaluation.

There were no sensitive security issues at any time; on the contrary, the evaluation mission was extremely welcomed by all stakeholders. Although civil war-like conditions prevail in the neighbouring province of Tigray, there were no security concerns at any point during the evaluation in the field.

Photo 1: Pastoralists watering their camels and goats (Source: H. Hempel)

4 Assessment according to OECD/DAC criteria

In the following sections, the individual OECD/DAC criteria are evaluated, taking into account the GIZ 'Guidelines for Central Project Evaluations'. The assessment questions and indicators for each assessment dimension are described in the evaluation matrix (see Annex 1a/b).

4.1 Impact and sustainability of predecessor projects

There was no predecessor project to be part of the evaluation; both projects evaluated here were the first for the natural resource management (NRM) programme for the eastern Ethiopian lowlands.

4.2 Relevance

This section analyses and assesses the relevance of the Capacity Development to strengthen drought resilience in the Ethiopian lowlands project (CDSDR) and the Development of capacities to strengthen the drought resilience of the agro-pastoral population in the lowlands of Ethiopia project (SDR).

Summarising assessment and rating of relevance

Table 4: Rating of OECD/DAC criterion: relevance

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Relevance	Alignment with policies and priorities	30 out of 30 points	30 out of 30 points
	Alignment with the needs and capacities of the beneficiaries and stakeholders	28 out of 30 points	30 out of 30 points
	Appropriateness of the design*	17 out of 20 points	15 out of 20 points
	Adaptability – response to change	17 out of 20 points	17 out of 20 points
Relevance total score and rating		Score: **92 out of 100 points** Rating: **Level 1: highly successful**	Score: **92 out of 100 points** Rating: **Level 1: highly successful**

The safeguarding and development of water resources, their sustainable use and management are the central and all-important core elements to strengthen the resilience of the population in these arid and semi-arid areas and to regenerate the natural resources and their ecosystem services (Tsegaye et al. 2013; Int 5, 6, 7, 8 with project partners).

The project approach is fully focused on addressing the priority needs of pastoral communities and the looming ecological challenges. It has demonstrated a very effective approach to mitigating and reversing progressive soil erosion and pervasive gully formation, as well as progressive degradation of soils and vegetation and rapidly growing desertification in the affected dry valleys (Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners).

Development potentials for rehabilitating the livelihoods of pastoral communities and thus strengthening their resilience against both droughts and destructive floods are clearly visible. The approach has been integrated

into the National Plan for Pastoral Management since 2020 as an effective measure for NRM (Int 6, 7, 8 with project partners, and NPPM 2020).

The results achieved through the project interventions have enormous potential for broader socio-economic and environmental impact, and are therefore very good candidates for upscaling (Amede et al. 2020). The project has filled critical knowledge and technology gaps in natural resource development and management that existed in lowland and rangeland areas (Int 6 with project partner). The approach is particularly relevant to the upscaling process, not only in Afar and Somali provinces, but for all of Ethiopia and beyond, for all similar sites with comparable desertification problems.

In total, the relevance of both project is rated as Level 1: highly successful, with 92 out of 100 points.

Analysis and assessment of relevance

Relevance dimension 1: Alignment with policies and priorities

Strategic reference frameworks

Within the IGAD 'Drought Disaster Resilience Sustainability Initiative (IDRSSI)' framework, Ethiopia produced a Country Programming Paper (CPP) in 2012 that is the main strategic document for both projects. The CPP recognises that pastoralism (and agro-pastoralism) is an appropriate production system for lowland natural resources and climatic conditions. The CPP is embedded in the national Growth and Transformation Plan (GTP), which provides a broad strategic analysis and priorities for the agriculture and livestock sector. Until 2019, there was a lack of a specific strategy for the lowlands to deal with pastoral and agro-pastoral populations and traditional livestock production in a deteriorating environment. The SDR programme has made a significant contribution to identify appropriate strategies in this regard. The WSW approach is part of the 'National Plan for Pastoral Management' in the National Development Plan (GTP 1) since 2020.

The CPP has seven major areas of intervention. The SDR programme, with CDSDR and SDR as a prelude, is focused on three of them: natural resource management, livelihood support and development, and knowledge management/research.

There was and is no explicit strategy or policy document that addresses the specific situation of Ethiopia's lowlands. The Afar region adopted the 'Regional Country Programme for Climate Change Adaptation' in October 2010. The Somali region has also adopted a five-year development plan (GTP IIa) that focuses on rehabilitation of natural resources and development of water sources for irrigation.

Since the strategic documents at the national and regional levels contain little that is concrete, the overall SDR programme instead attempted to fill the strategic gaps with a practical approach. This was met with great interest at the regional and national levels and was adopted as the regional approach for Afar and Somali (Int 7, 8, 18 with project partners). The CDSDR project design covers only the institutional aspects of the overall strategy and directly relates to multiple pillars set out in the CPP: designing technical solutions to drought resilience (for CDSDR Planning of NRM Measures, Knowledge Management, Human Resources, and Institutional Training), which led to the development of the DVR programme approach.

Project (conflict) context

Because the CDSDR project worked on the institutional capacity aspects of the overall strategy, conflict analysis was limited to aspects that would prevent institutions from fulfilling their mission, while conflict management in the field was covered by other parts of the overarching programme (see SDR proposal). The integrated peace and conflict analysis were not used at the time of project design (Int 1, 49, 51 with project staff).

There was strong likelihood for conflict within institutions and between the project and partner institutions, which was overcome by involving knowledgeable people in decision-making. Partner institutions at the management level are very aware of such potential for conflict, but this was less the case with frontline staff. The project had to ensure that staff choices were acceptable given the institutional discrimination against highlanders that was prevalent in the lowland partner institutions (Int 1 with project staff).

Synergies/differences with other sectors

Regrettably, broader support and involvement of the private sector (e.g. construction enterprises, agro-input dealer, crop dealer, tractor owner) was not envisaged at the outset. The original project strategy identified the livestock and meat production sector (meat value chains including veterinary services, feed market, slaughterhouses, etc.) as complementary actors that other donor agencies were interested in supporting. In addition, territorial development approaches were envisaged to round out the SDR approach, without elaborating on this (GIZ Project Proposal 2013, 2015).

BMZ country strategy

The SDR project was the first BMZ-funded project in the Ethiopian lowlands in response to climate change-induced natural resource degradation, with the intention of expanding German involvement over the years. It is fully in line with the BMZ sector strategies 'Development of Rural Areas and their Contribution to Food Security 2011' (BMZ 2011), 'Promotion of Sustainable Agriculture 2013' (BMZ 2013) and 'The BMZ's New Africa Policy. BMZ Strategy Paper 06/2014' (BMZ 2014e) and remains relevant in light of more recent strategy papers. The German SDR programme in Ethiopia built on the SDR/EKF project.

In addition to the above-mentioned strategy papers particularly the BMZ strategy for 'Strengthening drought resilience in the arid and semi-arid regions of the Horn of Africa' (zero draft), which was still in preparation at the time, formed the reference framework for the project appraisal of CDSDR I. Later, the German cooperation strategy was defined in the CDSDR project proposal Part A of the project document, where CDSDR I occupied a central strategic position. However, a BMZ country strategy for Ethiopia is still being prepared.

Agenda 2030 (SDGs)

There is no specific national document on the Agenda 2030 in Ethiopia. The CPP and GTP documents largely adhere to the main SDGs. Both projects aimed to contribute to SDG 1 'No Poverty', SDG 2 'Zero Hunger', SDG 12 'Responsible Consumption and Production', SDG 13 'Climate Action' and SDG 15 'Living on Earth'.

SDR was established within the framework of Energy & Climate Fund (EKF), focusing on climate adaptation. The WSW are efficient in capturing run-off from surrounding hills for use in crop and fodder production. Rain events are likely to be more erratic in the region with the risk that some flood waters could overrun the WSW and result in further soil erosion. In anticipation of such events the project has promoted the installation of more temporary barriers in gullies (stones and wood) to modulate the possibility of further soil losses from extreme rainfall and flooding events. The capture of flood water can be considered an adaptation to climate change (Int 6 with project partners).

SDR	Relevance dimension 1 – Alignment with policies and priorities – scores **30 out of 30 points**
CDSDR	Relevance dimension 1 – Alignment with policies and priorities – scores **30 out of 30 points**

Relevance dimension 2: Alignment with the needs and capacities of the beneficiaries and stakeholders

Project concept and core problems/needs of the target group

Both projects were and are a direct response to the existential crisis of the local (agro-) pastoralist societies caused by climate change, pasture degradation and high population growth. Traditional pastoralism proved to be well suited in principle to arid areas (Galvin 2009; Gebre-Mariam 1994; Sabyrbekov 2019; Solomon et al.

2007) but the resource base deteriorated and the system was unable to adapt, resulting in large losses of assets (livestock, grazing land), with quite a few pastoralists dropping out of the pastoral system altogether.

The SDR project aims to mitigate the impacts of climate change (degradation and desertification) that weaken the resilience of the population and find ways to stabilise the livelihoods of pastoralists in a changing environment. A technical and economic approach should be used to develop solutions based on improved NRM and the introduction of improved water management technologies. The focus of the project was to provide a holistic solution in terms of NRM that is appropriate and supportive to the target groups, landscape and climate (GIZ BE 2018a). The CDSDR project design, through its three outputs, is focused on the institutional aspects of testing, implementing, and continuing technical solutions and supervision.

Needs and concerns of women and men in the project concept

SDR conducted a gender analysis in 2014 that analysed the different roles of women and men in the local economy and in traditional pastoralist households (Imburgi 2016). One finding was that women are more affected by drought conditions because they are responsible for food and, especially, water supply. The gender analysis conducted by SDR was used in the design of CDSDR. Another finding of the study was that there is a risk of an increased workload for women when pastoralists move to a more sedentary lifestyle. In any case, women are traditionally excluded from decision-making processes. Women are also at a structural disadvantage due to less access to productive resources. The severe deficit of women staff in partner organisations was obvious (Int 2, 49, 51 with project staff, Int 5 and 40 with external consultant).

The SDR approach included an indicator calling for specific activities to increase women's income from various activities and improve their access to resources and decision-making processes. Further activities have been provided to mainstream gender aspects within partner organisations (GIZ 2013a, GIZ 2020a). In retrospect, this seems unambitious and could certainly have been expanded more, or even designed as a stand-alone output. Attention to cultural and religious values is recognised by the project team but efforts may have been limited by a lack of staff with expertise in addressing these aspects that would require much greater efforts via e.g., anthropological studies.

Particularly disadvantaged groups, gender aspects

During the project preparation for both SDR and CDSDR, 'leave no one behind' was not a mandatory analytical step and the Agenda 2030 did not yet exist. Within SDR the target group of pastoralists was understood as the particularly disadvantaged group and within this, women were identified as more vulnerable due to their lack of representation in decision-making processes, limited access to resources and as a subordinate family member in the household.

However, the direct target group of the CDSDR project activities were the staff of the partner and training institutions as the actual target group of this project rather than the pastoralists.

Deescalating factors/connectors in the project conception

During the planning phase, a security assessment was carried out to assess the accessibility of the project region, as some areas were previously closed for safety reasons. A risk, peace and conflict assessment took place during the project implementation in 2014 (GIZ 2014a). Escalating factors/dividers were identified and taken into account in the project design, but possible remedial factors/connectors were hardly considered.

The identification of connectors and disconnectors was based on previous project experience. The main areas of conflict are briefly mentioned in the proposal (GIZ 2015a), where the main risk identified was a deterioration in ethnic relations. This was seen as a threat to future peaceful negotiations between natural resource users with competing interests. The bid also mentions pressure from foreign investors to use pastoral land for agro-industrial purposes, which would increase tensions. This was not explicitly considered in the project design because the risk was considered to be of little relevance.

With the help of Swiss co-financing, an in-depth security assessment was carried out that examined the various security and risk aspects (GIZ 2014a). Later, this security assessment became the basis for the development of the GIZ security units in GIZ country offices.

Risks, human rights and potential security risks

Human rights issues were not analysed in detail, but the rights to nutrition and health were explicitly mentioned in the proposal (GIZ Project proposal 2013a, 2015a). Human rights violations were not mentioned. Detailed safety assessments are carried out by the GIZ Risk Management Office on an ongoing basis. There was no specific danger to employees during the project implementation.

Achievement of objectives with given resources (time, finances and partner capacities)

In the Somali region, the fact that in the selected woredas the population is already largely sedentary and consists mainly of established farmers or agro-pastoralists, was not sufficiently taken into account (GIZ 2013a, 2015a) There are also many internally displaced people (IDPs) in the Somali region who were once pastoralists. However, they had lost access to land due to state intervention and had little choice but to become agro-pastoralists. Dry valleys, which were predestined for the proposed WSW approach, were not owned by a community (land use rights) as in Afar, but by a family (clan) (GIZ Project progress report 2018a, 2018b). This had implications for the number of people who could benefit and for the organisation of site management.

CDSDR did not aim at directly improving the living conditions of the target groups, but focused on governance and strengthening partner structures.

SDR	Relevance dimension 2 – Alignment with the needs and capacities of the beneficiaries and stakeholders –scores **28 out of 30 points**
CDSDR	Relevance dimension 2 – Alignment with the needs and capacities of the beneficiaries and stakeholders –scores **30 out of 30 points**

Relevance dimension 3: Appropriateness of the design

Project strategy (activities and instruments) for achieving the project objective.

The SDR project objective was to improve the use of NRM capacity to improve the situation of pastoralists and agro-pastoralists. CDSDR did not aim at directly improving the living conditions of the target groups, but focused on governance and strengthening partner structures. The project objective proved to be too optimistic in its very broad compromise-like formulation. The environmental context, increasing droughts destabilising rural people's livelihoods, was the initial basis of the drought resilience project SDR and was well documented and analysed. The political as well as the social context analyses were adequately done, but the more detailed processes and relationships between actors were only analysed during project implementation through detailed conflict studies, such as the role of kebeles, woredas, natural resource governance, influence of traditional authorities and their land use management. The proposal (GIZ 2013a) mentioned the risk of an increase in armed conflict due to resource scarcity, but not the ethnic conflicts that have recently flared up in Tigray.

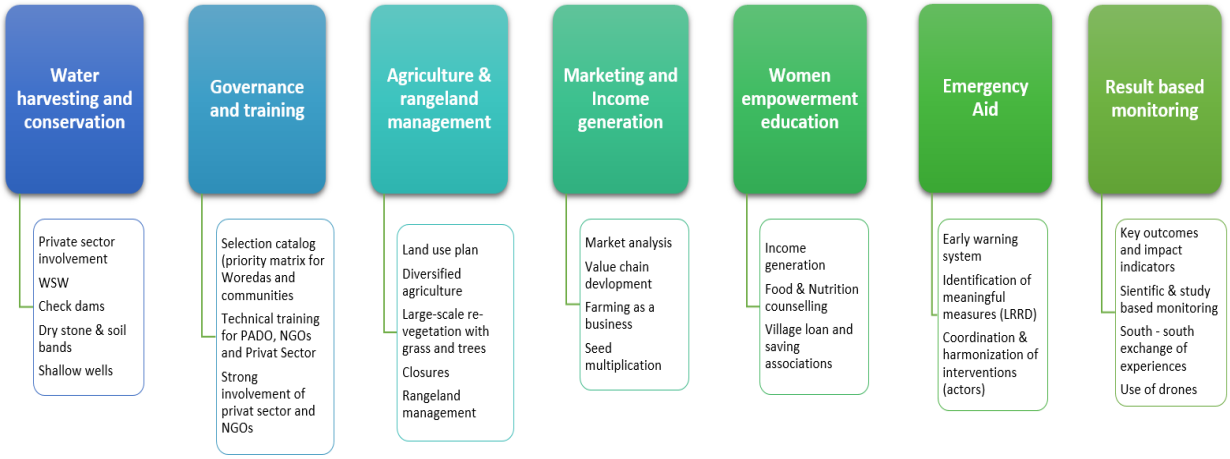
SDR took a broad approach to finding feasible technical and realistically economic solutions to the key problems. The WSW approach had been proven successful in similar areas in West Africa (and earlier Eritrea) (Bender 2011, ICRISAT 2019). The intended impact was to find sustainable solutions that would enable the population to respond to a deteriorating environment and continue to make a decent living on their land, while developing new livelihood opportunities. After a protracted phase of nearly two years' testing, the project focused on floodwater management to improve productivity and livelihoods, particularly of dry valleys severely affected by degradation and desertification. WSW technology proved to be technically feasible and effective in achieving such a goal. Other technologies (e.g. stone bunds on hill sides, trenches with Valerani ploughs in rangeland area, gabions within gullies), that seemed technically feasible at the planning stage either proved to be insufficiently effective or required many more resources than were available, or were not feasible for socio-cultural and other reasons. It was underestimated how difficult it is to certify tenure rights for communal and

pastoral land where there is no land use policy. In addition, the social and organisational aspects of sustainable implementation of technical and economic solutions in the Afar region were insufficiently considered.

The SDR and CDSDR project design underestimated the capacity of partner institutions to work strategically, just as it underestimated the fundamental difficulties that former pastoralists and IDPs face in transitioning to agriculture.

The SDR outputs aim to improve access to resources and knowledge, coordinate local community, district and regional planning processes to enable appropriate NRM interventions, improve the capacity of local service providers, and create conditions for improved policies and strategies for development in Afar (and later Somali). These all seem to be necessary elements to achieve both the long-term objective and the short-term project objective, but also show duplication with CDSDR (capacity development of partners). The designed outcomes of the project assessed with the project objective (outcome) indicators reflect that the SDR project was actually intended as part (pilot, prelude) of a larger strategy. A clearer sectioning (clustering) of the fields of action as shown in Figure 7, for example, would probably have been more helpful.

Figure 7: Sectioning of fields of action (outputs) (Source: Hendrik Hempel).



The CDSDR project design dedicates an entire output to the aspects of institutional exchange and learning as well as knowledge management. The project was designed to achieve institutional sustainability of the support activities, with institutions taking ownership of the implementation of the project design. The activities and tools in CDSDR should improve the planning, implementation and monitoring of NRM measures, which should be carried out by regional project partners with the support of the national partner institutions. Knowledge about the technical and economic solutions should be established in the partner structure and close networking contacts with other relevant bodies at the same time. In addition, measures were planned to improve the capacities of the partner staff involved as well as the training institutions. This has now been achieved very well with CDSDR II (Int 1, 2, 60 with project staff).

The ‘experts’ instrument was designed so that it could be shared with other projects in the umbrella German programme in order to achieve efficiency gains. The CDSDR design was also based on a broad compromise that did not lead to a sharpening of the implementation strategy and was thus not really appropriate to the task.

The additional SDC funds were used to support a number of soil and water conservation measures, including WSW and stone walls, following an analysis of the situation in the Somali region. However, SDC wanted to separate the design of NRM measures from economic measures, although the strategy called for a clear link between the two. This weakened the overall approach.

Plausibility of the underlying result hypotheses

As mentioned before, both projects were planned without a result model (ToC) and the results hypotheses were reconstructed during the inception workshop. The hypotheses in themselves seem generally plausible. However, during the implementation of SDR and CDSDR, it became clear that land tenure issues were not sufficiently addressed (Int 1, 2, 5, 36, and 44 with project and GIZ staff and consultant). However, communal tenure rights are essential for secure rangeland management. These gaps in the planning process are clearly noticeable.

The result hypotheses of CDSDR, ranging from the improvement of institutional capacity to plan and implement NRM measures, to the creation and management of knowledge and networking with relevant institutions and actors, to capacity development measures for the staff of partner and training institutions, appear sufficiently conclusive. However, there are doubts that the institutional capacity development is sufficient, given the challenges the partner has shown so far. This institutional development should then lead to improved support for the development and subsequent dissemination of sustainable technical and economic solutions for drought resilience. Greater involvement and technical capacity development, especially of the private sector (construction companies) is missing.

Plausibility of the chosen system boundary

The areas of responsibility of the SDR project as a collaboration of partners and GIZ (including SDC) are well chosen and clearly identified. The objective was to modify the income sources and livelihoods of the indirect target group. The project team considered the associated behavioural change to be somewhat beyond the project's scope. It should actually have been considered an essential objective by the project, but it was not. According to the information given, that was because they did not want to force the indirect target group of pastoralists to undergo socio-cultural changes (Int 1, 2 and 49). With the involvement of the partners in the project's area of responsibility, the CDSDR project objective is entirely within the system boundary and entirely the responsibility of GIZ and its partners. The boundary of CDSDR is drawn where the indirect target group (households) improves their food, nutrition and fodder supply with the help of small-scale or flood-based irrigation. This also means that the adoption of solutions by the target population is clearly outside the project's sphere of responsibility.

Complexity of the framework conditions

Although the complexity of the framework conditions and policies are sufficiently described in the proposal (GIZ 2013a), the gender analysis and the SDR strategy (Imburgi 2016, Schier 2018), relevant factors such as the lack of a land policy or the importance of the private sector were not covered. If the SDR project had been planned as a pilot, these aspects would certainly have been quickly recognised and integrated.

SDR	Relevance dimension 3 – Appropriateness of the design – scores **15 out of 20 points**
CDSDR	Relevance dimension 3 – Appropriateness of the design – scores **17 out of 20 points**

Relevance dimension 4: Adaptability – response to change

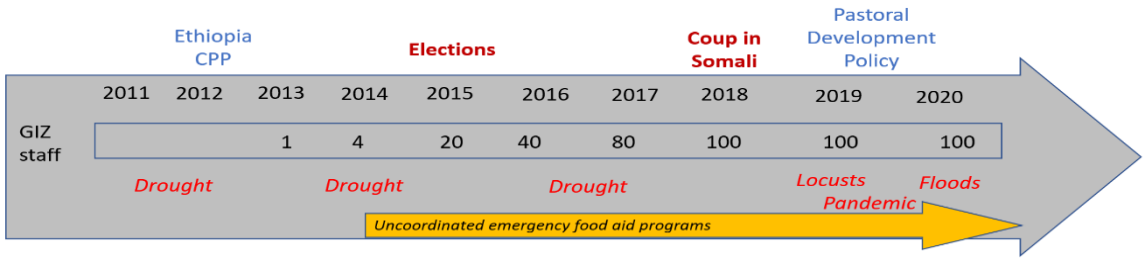
Changes during the implementation of the projects

The following changes occurred during the implementation of the intervention (please compare with Figure 8):

- 2014 split of the MoA into a Ministry of Livestock and a Ministry of Agriculture at national and Somali level.
- New prime minister and subsequent second reorganisation of the MoA/Ministry of Livestock in 2015.
- Additional funding of EUR 2.5 million (El Niño funds) to address the impact of the 2015/16 drought with a focus on additional food security and water access activities.
- Deteriorating security situation in 2015 and 2018 temporarily prevented access to some areas in Afar and Somali.
- State of Emergency (October 2016 to August 2017, February 2018 to April 2018) severely limited access to partners.
- Private contractors and traders have less technical and managerial capacity than initially analysed (GIZ FB 2019, project progress report, Int 1, 2 and 40).
- Technological development has advanced (drones with geographic information system (GIS) applications) and offers new opportunities for planning and monitoring in 2020 (Int 1, 2 with project staff).
- Change of government and most administrative staff in Somali region in August 2018. No contact with Somali government agencies from July until October 2018.

Implementation challenges can be presented in terms of time, major events and staffing levels as follows:

Figure 8: Institutional and environmental challenges during project time frame (Source: Richard Thomas).



All German projects were affected by the allocation of additional funds (in 2014, 2016 and 2019) which significantly increased the workload of staff, but additional staff were not approved (Int 1,2 with project staff and GIZ FB 2019). In addition, a co-financing agreement was reached with SDC, resulting in an adjusted offer to BMZ with modified indicators to add the new project region Somali, but without changing the strategic concept. After the launch of the CDSDR project in 2015, SDR support was limited to the regional level as CDSDR became responsible for national strategy development.

Handling changes in the project concepts

In principle, no changes to the basic strategy were deemed necessary by the project management. However, delays in the project schedule limited efficiency. In the Somali region, the implementation of activities had to be suspended for a while because of unresolved administrative processes with the local project partner. Two project extensions of a combined 12 months were insufficient to achieve the planned objectives (Int 1, 2 with project staff and GIZ FB 2019).

During the course of the project, training for contractors and craftsmen, especially masons, was included in the package of measures. This was done to train local people at the same time as the WSW was being built, to provide initial knowledge for later maintenance work, and to take advantage of the opportunity to provide training and jobs (Int 1 and 2, with project staff, GIZ PPP1 2020). This good measure was very much welcomed by all parties involved (Int 6, 7, 8 with project partner, FGD 9/1, 12/4, 15/6, 17/7, 19/8).

New possibilities were explored for monitoring using drones to plan and more accurately survey and monitor NRM measures (Int 1 and 2 with project staff).

Meanwhile, a fundamental shift in thinking took place in most stakeholders' (partners) understanding of the lowland situation. Drought and seasonal flooding are no longer viewed only as risks, but as determinant conditions that need to be addressed systemically (Int 6, 7, 16, 21, 22 and 52 with project partners and FGD 10/2, 11/3, 15/6, 17/7, 19/8). The project design did not have to be adapted for this to happen, since it is precisely what was intended with the WSW, but had not prescribed as an indicator – namely, to create conditions for improved productivity and to seek to exploit unused potential and opportunities.

After the conclusion of the SDC co-financing agreement, an adjusted bid was submitted to the BMZ to obtain the necessary contract to implement the co-financing (GIZ ÄA 2018, GIZ KV 2018). On this occasion, some experiences were used to change some indicators and activities (no migration corridors, reduction in the number of women engaged in additional income-generating activities, shifting the focus from the number of trained target population to the number and quality of trained extension staff). After that, a new project infrastructure had to be established in Somali, which also took some time.

In the end, how the project design was perceived also inevitably shifted during implementation from an initially strongly technical view to a more systemic approach. This is a learning experience that, according to the evaluators' experience, many similar projects also make, but which until now has not been reflected enough in comprehensive (and digitised) and professional project planning (with standardised indicators).

SDR	Relevance dimension 4 – Adaptability – response to change – scores **17 out of 20 points**
CDSDR	Relevance dimension 4 – Adaptability – response to change – scores **17 out of 20 points**

Methodology for assessing relevance

Table 5: Methodology for assessing OECD/DAC criterion: relevance

Relevance: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Alignment with policies and priorities	The national framework is the Ethiopia Country Programming Paper (CPP) and the Five-Year Growth and Transformation Plan (GTP II) (GIZ 2018 FB) The international framework is the Agenda for Sustainable Development until 2030 and the associated SDGs, as well as Agenda 2063, 'The Africa we want' of the African Union. The wider, comprehensive framework is provided by the policies and strategies of the African Union such as the Policy Framework for Pastoralism in Africa and the Comprehensive Africa Agriculture Development Programme (CAADP) (GIZ 2018 FB)	**Evaluation design:** Explorative, following the evaluation questions from the evaluation matrix (see annex) No specific evaluation design was applied **Empirical methods:** Relevant framework documents were aligned with the project design and feedback from project staff and stakeholders	• By combining methods and sources, triangulations of methods and data were performed for all assessment dimensions. The evidence is considered very strong for all dimensions
Alignment with the needs and capacities of the beneficiaries and stakeholders	Pastoralist and agro-pastoralist communities are clearly defined as indirect target groups (final beneficiaries) in the intervention area (GIZ Project proposal 2013a)	**Evaluation design:** Explorative, following the evaluation questions from the evaluation matrix (see annex); No specific evaluation design was applied	The evidence is considered very strong

		Empirical methods: Needs assessments (REGLAP 2011; Getachew A.G. 2014; Schmidt M. & Pearson O. 2014) were reviewed and priorities were compared to project interventions, and whether the target group (and proxies) felt that their needs were met by the project. Not only were the needs of the target group assessed, but also the needs of the degraded environment	
Appropriateness of the design*	The assessment of the theory of change and its results hypotheses	**Evaluation design:** Explorative, following the evaluation questions from the evaluation matrix (see annex); No specific evaluation design was applied **Empirical methods:** Analysis of documents – mainly progress reports and technical documents – in order to gather evidence for the formulated results hypotheses, and on discussions with the project team	The evidence is considered very strong
Adaptability – response to change	Necessary adjustments due to a changing project context	**Evaluation design:** Explorative, following the evaluation questions from the evaluation matrix (see annex); No specific evaluation design was applied **Empirical methods:** Analysis of documents – mainly progress reports and technical papers –to gather evidence for the formulated outcome hypotheses, and on discussions with the project team	The evidence is considered very strong

* The project design encompasses the project's objective and ToC (GIZ results model, graphic illustration and narrative results hypotheses) with outputs, activities, instruments and results hypotheses as well as the implementation strategy (e.g. methodological approach, capacity development strategy, results hypotheses).

Conflict sensitivity in the project design

The PCA provides for the involvement of, for example, recognised authorities and mechanisms of state and traditional dispute resolution (GIZ 2014a). By strengthening the capacities of state institutions with the involvement of traditional authorities, preventive measures for conflict management have been taken in this regard.

Table 6: Dividers/escalating factors in the project context

Which dividers/escalating factors were identified in the project context?	Addressed by the project? (yes/no)	If addressed, how is it considered by the project design?
Pastoral groups involved in inter- and intra-ethnic conflicts with regional and international dynamics, tensions and clashes	Yes	• Close cooperation with representatives of local and district government and administration to assess scope of interaction • Transparent communication about project area, target groups, approach and selection criteria • Communication of NRM approach (inclusive and needs-oriented) in order to raise acceptance at all levels and by all groups • Close cooperation with early warning and response mechanisms concerning local disputes and conflicts • Assessment of political, economic and social interests of all stakeholders in the project region • Assessment of scope of interventions and interests of government actors • Assessment of interests and needs of the population of marginalised areas and target groups • Consultations and discussions about interventions with target groups and other stakeholders
High unemployment, strong population growth, the aggravation of ethnic-related disputes, due to increasing droughts and floods	Yes	
Legal uncertainty regarding property rights, low bargaining power of the affected IDPs and passivity of the regional/local government in this regard	Yes	
Ethno-nationalistically motivated conflicts between insurgents and government troops in connection with political power and regional autonomy	Yes	

Table 7: Connectors/deescalating factors in the project context

Which deescalating factors/ connectors were identified in the project context?	Addressed by the project? (yes/no)	If addressed, how is it considered by the project design?
Inclusion of local communities	Yes	• Monitoring tensions and conflicts through regular surveys and close cooperation with local communities and other relevant actors at regional and community level • Flexibility within projects to react to changing settings with conflict-sensitive project management • Build up trust/good relations with local communities • Good collaboration with national and subnational (regional state and district) government institutions • Capacity development of local communities and local governments to manage their own conflicts • Strong communication and result reporting with ministries and highlight the importance of pastoralism for the dry lands • Impartiality with the focus on poverty reduction and food security
Regional state and district government institutions	Yes	
Inclusion of local authorities	Yes	
Inclusion of civil society organisations	Yes	

4.3 Coherence

This section analyses and assesses the coherence of the project. It is structured according to the assessment dimensions in the GIZ project **evaluation matrix** (see Annex 1a/1b).

Summarising assessment and rating of coherence

Table 8: Rating of OECD/DAC criterion: coherence

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Coherence	Internal coherence	40 out of 50 points	42 out of 50 points
	External coherence	40 out of 50 points	40 out of 50 points
Overall score and rating		Score: **80 out of 100 points** Rating: **Level 3: moderately successful**	Score: **82 out of 100 points** Rating: **Level 2: successful**

SDR/EKF and CDSDR have evolved into a comprehensive NRM programme with outstanding relevance, which is not yet reflected in a GIZ/BMZ country strategy. Internal coherence and complementarity with other GIZ projects is good, even if there is sometimes unnecessary overlap and unclear distinctions.

External coherence and subsidiarity is consensual and works well, but can be further developed. The NRM approach developed can be sharpened but is absolutely suitable for large donors/actors. However, cooperation and complementarity is still too focused on the partner and not enough on the involvement of the private sector and civil society organisations.

In total, the coherence of the SDR project is rated as Level 3: moderately successful, with 80 out of 100 points, and the CDSDR project is rated as Level 2: successful, with 82 out of 100 points.

Analysis and assessment of coherence

Coherence dimension 1: Internal coherence

Complementarity within German Development Cooperation

SDR, financed by the European Climate Fund (EKF) was the start of a fast-growing programme. In 2015, the project on ‘Soil protection and rehabilitation’ (Afar Soil Rehabilitation Project (ASRP) PN 14.0156.1-006.00) was added; in 2016 the TREE project (Promotion of multipurpose and fruit trees, PN 16.0116.0-001.00) and the ‘Improving food security and disaster management’ project PN 16.0123.6-001.00). In 2018, the SDC-funded project ‘Rehabilitation and sustainable management of dry valleys and integration of DVR concept into public and private partners strategy’ (PN 12.9761.3-003.00) was added (see Figure 3). In principle, a comprehensive NRM programme with outstanding relevance has been developed but neither with a compatibility check nor based on a cluster strategy. In the agricultural sector GIZ in Ethiopia serves three ‘silos’: (i) sustainable land management; (ii) drought resilience; and (iii) agricultural productivity. SDR and CDSDR belong to the second silo. Horizontal cooperation between these three silos does not sufficiently take place (Int 44, 62).

Cooperation (conceptual and in implementation) and synergies

The cooperation among the above-mentioned projects within the drought resilience programme is good, even if there are some duplications. Synergies are sought and used, for example in the supportive use of project inventory and staff (cars, drivers, etc.).

The capacity building component of SDR (Outputs C and D) was reduced by the conception of CDSDR I, which undertook this overarching task (GIZ 2013a, 2019b).

A co-financing agreement was reached with SDC resulting in an adjusted offer to BMZ with modified indicators to add the new project in the Somali region (GIZ ÄA/KV 2018). The additional SDC funds were used to support a number of soil and water conservation measures, including WSW and stone walls. The project separated NRM measures from economic measures. In retrospect, this separation was unfavourable as it compromised the overall impact (see section 4.5 on impact). In the Somali region, a follow-up project is being co-financed in connection with CDSDR II. The exit strategy here is linked to the SDC strategy for the Horn of Africa. In practical terms, the further strategy design needs to ensure that socio-cultural aspects are more meaningfully addressed so that local governance systems can replicate successes without massive support other than funding.

Consistency with international and national norms and standards

In both projects, national and international norms and standards (e.g. 'Do No Harm', 'Leave No One Behind', 'Gender Justice' and 'Convention on Human Rights') were sufficiently taken into account, but without direct implementation aspects.

SDR	Coherence dimension 1 – Internal Coherence – scores **40 out of 50 points**
CDSDR	Coherence dimension 1 – Internal Coherence – scores **42 out of 50 points**

Coherence dimension 2: External coherence

Subsidiarity and complementarity

The fast-growing programme was not based on a strategic approach, but rather on random funding opportunities and pragmatism (Int 3, 39, 6, 61 with donors and project partner). There was insufficient focus on developing a coherent implementation strategy and clarification of its own mandate. Also there was a lack of prior critical examination of how further individual projects would fit with the results framework before inclusion. Internal GIZ bureaucracy in contracting and tender processes caused delays and frustration among the target group (Int 2, 6, 8, and 62 with project staff, partners and GIZ staff). In this context important questions remained unresolved, for example:

- How can tasks be delegated so that GIZ bureaucracy is less counterproductive?
- Which actors can take on which tasks to ensure sustainability and backlog?
- What is needed to make the different actors fit together and promote progress?

The GIZ SDR Programme, together with the Ethiopian Ministry of Agriculture and the Afar Bureau of Livestock, Agriculture and Natural Resource Development, organised the first conference entitled Development of Resilience Enhancing Alternative Measures for the Ethiopian Lowlands (DREAM I). It was held from 29 September to 3 October 2019 in Semera. The conference assessed the most promising approaches in the arid and semi-arid lowlands of Ethiopia and the Horn of Africa and laid the groundwork for networking and collaboration.

The main conference consisted of a field trip and the two conference days, including a technical session on 'The Challenge of Invasive Species'. With 254 participants, DREAM I had a diverse attendance of pastoralists and agro-pastoralists from Afar, Somali region and Oromia; decision-makers; international development partners; government implementers; civil society experts; and researchers. A key outcome of the conference was the declaration signed by key organisations, ratified by key government organisations and development partners, and endorsed by all conference participants.

With the implementation of the DREAM Conference, a 'coalition of the willing' developed, which publicised the intervention both nationally and internationally. Regrettably, the second conference in 2020 could not be held due to the pandemic. This important forum is perfectly suited to give the issue of pastoralism and the fight

against land degradation the attention it needs, especially to develop area-wide measures and a supra-regional view.

Use of existing systems and structures (of partners and international organisations)

CDSDR complemented the efforts of partner institutions to design appropriate policies and identify an effective approach to increase drought resilience. The approach aimed at collaboration between the federal and regional levels and between regions and institutions, including local governments (woredas). The activities in the SDR project aimed to test technical and economic solutions and were complementary to the partner organisations' attempts to provide solutions to the problems of pastoralists and their agro-ecological context. To this end, there was cooperation with the state emergency programme Productive Safety Net Programme, though less with the WB and IFAD Lowlands Livelihood Resilience Project.

The DVR approach has been considered in several major studies on lowland development funded by WB, Department for International Development (DfID),[5] USAID and SDC. The approach has been included in the MoA's catalogue of preferred lowland technologies.

Influences of other donors and organisations

At the time of planning, very few other donors were active in the area and no negative or positive potential influences were identified. This changed during implementation. The aspect of possible influences of other donors and organisations outside the project's sphere of responsibility was explicitly mentioned in the proposal's risk section, which mainly referred to difficulties in coordinating measures. Especially since the project was supposed to help with knowledge management for the partner institutions, different approaches of other donors and actors led to confusion and misunderstandings (Int 2, 3, 4, 8, 11/3, 22, 31 with project staff, donors and project partners).

The WB, the AfDB and KfW also support the sector (fields of action), with a range of projects with different objectives and interventions, operating in a context without a real (functioning) government framework programme, a 'flagship' programme. However, greater complementarity with KfW (in terms of match funding, management of Prosopis and upscaling) could not be achieved either (Int 1, 2, 25, 41 with project and KfW staff).

Meanwhile the technical cooperation approach developed here is ripe for a calibrated design with its own standards and is absolutely suitable for large donors/actors.

SDR	Coherence dimension 2 – External coherence – scores **40 out of 50 points**
CDSDR	Coherence dimension 2 – External coherence – scores **40 out of 50 points**

Methodology for assessing coherence

Table 9: Methodology for assessing OECD/DAC criterion: coherence

Coherence: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Internal coherence	The planned complementarity and division of labour of the project is presented in the planning documents and the execution is outlined in the project progress report. Synergies with other technical cooperation projects and realised complementarity with neighbouring 'silos'	**Evaluation design:** Qualitative content analysis **Empirical methods:** Document analysis, evaluation matrix, interviews and focus group discussions	• Good data quality, triangulation possible, no specific limitations discernible • Good strength of evidence

[5] Now part of the UK's Foreign, Commonwealth & Development Office.

Coherence: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
External coherence	Partners' own efforts, coordination with other donors' activities, use of existing systems and structures, M&E, learning and accountability. Realised synergies with financial cooperation projects and complementarity	**Evaluation design:** Qualitative content and contribution analysis **Empirical methods:** Document analysis, evaluation matrix, interviews and focus group discussions	• Good data quality, triangulation possible, no specific limitations discernible • Good strength of evidence

4.4 Effectiveness

This section analyses and assesses the effectiveness of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex 1a/b).

The SDR/EKF project focused on increasing the capacity of agro-pastoralist communities and pastoralists for sustainable natural resource management (NRM) through water-spreading weirs (WSW). The choice of WSW as a main intervention is considered most appropriate for the large-scale rehabilitation of wide and shallow dry valleys that are deeply rutted by gully soil erosion and characterise much of the Afar and Somali lowland regions of Ethiopia. As the Ethiopian highlands are rarely protected from erosion, floods from the adjacent highlands bring between 4.97 t/ha and 65.43 t/ha of sediment annually, although these values vary greatly between different years and sub-basins (Vanmaercke et al. 2010).

The WSW are designed to slow flood water, diverting some laterally away from the temporary river beds, capture sediments to fill gullies and spread water to adjacent areas both above and below the WSW. In addition, water is meant to infiltrate into the soil, raising the depleted water tables. This allows for shallow wells to be dug to provide watering points for domestic use including drinking and irrigation of an expanded set of crop and fodder options to increase income generation (Bender et al. 2011). The outputs on SDR are a concrete and achievable outcome.

The CDSDR project aims to train the different levels of the Ministry of Agriculture (direct partner) as an institutional actor so that they can apply and implement improved NRM for drought resilience. The effectiveness of this approach depends, among other things, on factors external to the project, which can only be partially compensated by capacity development.

Summarising assessment and rating of effectiveness

Table 10: Rating of OECD/DAC criterion: effectiveness

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Effectiveness	Achievement of the (intended) objectives	25 out of 30 points	15 out of 30 points
	Contribution to achievement of objectives	25 out of 30 points	20 out of 30 points
	Quality of implementation	18 out of 20 points	18 out of 20 points
	Unintended results	15 out of 20 points	15 out of 20 points

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Overall score and rating		Score: **83 out of 100 points** Rating: Level 2: successful	Score: **68 out of 100 points** Rating: Level 3: moderately successful

The use of the project matrixes to assess effectiveness posed challenges for the evaluation. As mentioned earlier, the outputs of the CDSDR and SDR results matrixes are not very strategically conceived, not sufficiently differentiated from each other and were often vague in terms of activities. The analysis of the results matrixes therefore had to be adapted during the evaluation to do full justice to the actual project outputs. For better examples of outputs and indicators see section 5.2 on Recommendations.

Due to the broad conception of the project matrix, some indicators were too ambitious, or in some cases not ambitious enough. The activities were also not sufficiently aligned with the fields of action (2013a).

Insufficient adaptation to the reality on the ground, uncertainty with internal processes regarding results matrix adaptation and the challenge of managing a pilot project that was not designed as such are probably the reasons why results matrixes were not adapted. Other reasons include reservations about the approach and interventions within GIZ and the partners, which slowed down progress and adaptive change. On top of this, external events such as droughts and institutional changes also hindered progress. Bureaucratic delays within GIZ resulted in a level of frustration expressed by partners in interviews that suggest GIZ needs to examine its processes internally to avoid similar problems. SDR as a pilot has been successful in its overall effectiveness. CDSDR has lost much of its overall effectiveness, particularly under the difficult political processes, as described above.

SDR	In total, the effectiveness of the project is rated Level 2: successful, **with 83 out of 100 points**
CDSDR	In total, the effectiveness of the project is rated Level 3: moderately successful, **with 68 out of 100 points**

Analysis and assessment of effectiveness

Effectiveness dimension 1: Achievement of the (intended) objectives

Achievement of objectives

SDR was basically a pilot project designed to identify effective NRM measures. A more specific sectioning of outcomes was not undertaken on the grounds that it was not clear at the outset what would be achievable. Regrettably, experiences from similar projects in the region in Eritrea and Ethiopia (implemented in the 1990s) were not included in the project planning; there seems to be a gap in GIZ institutional memory and knowledge management. Nevertheless, SDR was instrumental in providing and analysing lessons learnt in the aforementioned NRM activities.

The SDR project demonstrated that WSW are a suitable intervention for large-scale rehabilitation of shallow and highly eroded dry valleys. The project belatedly conducted research and modelling on soil nutrients and moisture content, together with hydrological measurements and mapping of areas suitable for fodder and livestock production. As a test or pilot project, a stand-alone output for results and outcome monitoring would certainly have been installed. Nevertheless, although the amount of data is relatively small, several reports and publications (Amede et al. 2020; Calow et al. 2019) show a positive potential of professionally placed WSW over large, well-defined areas. In Afar alone, this affects about 900,000 ha. An estimated 796 million m^3 of additional water, mostly from the highlands, can thus be used per year for the Afar region alone (Vanmaercke et al. 2010). These findings are based on the results of interventions in seven districts (Afdera, Erebti, Awra, Golina, Teru, Dubti and Mille) and 18 kebeles in Afar state.

Although data from Somali region does not appear to have been collected or estimated due to political unrest and changing administrations, it is likely that similar biophysical conditions exist for Somali but different socio-economic conditions need to be assessed before extrapolations can be made.

The first SDR (see Table 10) outcome indicator was slightly overachieved in Afar and significantly underachieved in Somali. This was due to the longer engagement in Afar and the multiple delays and impediments due to external factors (suspicion of corruption at the project partner) in Somali (GIZ 2020a, Int 1, 2 with project staff). This made it difficult to take a more strategic approach and thus focus on achieving the numerical indicators. However, implementation in Somali accelerated sharply towards the end of the project period (Int 2 and 57, 58 with project staff and partners).

The second indicator (see Table 10) was achieved in both regions. The main activities in Afar were masonry for men, honey production and marketing for women, wild grass seed collection and sale. In Somali milk marketing for women became key. However, these activities were not quantitatively specified in the project matrix at the outset (GIZ 2013a, 2020a).

The third indicator (see Table 10) was almost 100% achieved in Afar, but only 60% in Somali. The measures introduced here were stone walls, WSW, management of invasive species and cultivation of elephant grass for soil conservation. The national emergency Productive Safety Net Programme has integrated the approach into its guidelines and prioritised measures, and the AfDB has also included the approach in its action portfolio (Drought Resilience and Sustainable Livelihoods Project).

The results for the fourth indicator (see Table 10) are actually generated from the overall programme. Therefore, a clear attribution is difficult. Nevertheless, the DVR approach has been confirmed by two studies (Amede et al. 2020, Calow et al. 2019) on lowland development, and the ‘stone walls and WSW’ technologies for NRM have been included in the MoA catalogue of preferred lowland technologies (NPPM 2020). The SDR project has made a major contribution to strengthening drought resilience of the affected population in the Afar and Somali region.

CDSDR was tasked with summarising the findings from the SDR project and to finally propose regulatory or strategic adjustments at regional and national level. The first CDSDR outcome indicator could not be achieved (see Table 11). Reasons are explained in the section ‘Aspects of project objectives not achieved’.

For the second indicator (see Table 11), the project has collaborated in the GIZ Sector Network Rural Development Africa, in international networks such as the ‘Global Soil Day’, the ‘Global Landscape Forum’ and with other German projects in the Horn of Africa and with two working groups in the MoA on technology assessment and policy development. It has also collaborated with Ethiopian organisations working on invasive species control, especially Prosopis. The MoA conducted a study on ‘Sustainable Land Management Interventions in Pastoral and Agro-pastoral Areas of Afar, Somali, Oromia and SNNPR Regions of Ethiopia’, to which the project contributed intensively. The approach was also presented at the ‘World Water Week 2018’. The University of Mekelle now offers a course on watershed management based on the project’s products. The DREAM Conference in 2019 organised by the project laid an important foundation for a coalition of supporters for pastoralists. In the course of implementation, it became clear that a holistic concept development is more effective than individual knowledge management products.

The third indicator was already exceeded in 2017 (see Table 11). Sixteen professional standards were drafted and approved and corresponding curricula developed with five training institutions. However, due to the very tight budgetary situation of most ATVET institutions, the curricula could not be implemented to a satisfactory extent.

Regarding the fourth indicator, according to the indicator monitoring nothing was achieved by the end of project (GIZ FB 2019). However, it was achieved with CDSDR II in 2021 (Int 6 with project partner).

Table 11: Assessed and adapted objective indicators for specific modules (outcome level)

SDR objective indicator according to the offer	Assessment according to SMART* criteria	Specified objective indicator
Objective indicator 1. 2,500 (Afar) and 3,125 (Somali) (Agro) pastoralists (of which at least 450/620 are women) apply new, resource-saving and climate-adapted cultivation and production methods for them to increase and diversify feed and food production. Base value (2013): 0 Target value (2020): 2,500 (Afar) and 3,125 (Somali); of which 450/620 women Current value (2020): 2,590 (Afar), of which 550 women and 1,387 (Somali), of which 225 women **Achievement in % (2020): 71%** Source: M&E system, efficiency tool	**Specificity:** The indicator is specific. **Measurability:** The indicator is measurable. **Achievability:** The indicator is achievable within the time frame. **Relevance:** The indicator is relevant especially gender and nutritional aspects. **Time-bound:** The achievements can be measured at the time of the evaluation.	No change
Objective indicator 2. 250 (Afar) and 310 (Somali) women have taken up income-generating activities such as the production, processing and marketing of feed and food or the fattening and trading of animals. Base value (2013): 0 Target value (2020): 250 (Afar) and 310 (Somali) women Current value (2020): Afar 330 and 328 masons (men), Somali 300 women and 40 men **Achievement in % (2020): 100% (178%)** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific. **Measurability:** The indicator is measurable. **Achievability:** The indicator is achievable within the time frame. **Relevance:** The indicator is relevant especially gender and nutritional aspects. **Time-bound:** The achievements can be measured at the time of the evaluation.	No change
Objective indicator 3. Five of the locally planned NRM measures in each of the Afar and Somali regions have been incorporated into the respective regional development plans. Base value (2020): 0 Target value (2020): 5 Current value (2020): Afar 5, Somali 2 (dry stone walls, river thresholds, management of invasive plants, elephant grass as biological soil and water conservation measure) **Achievement in % (2020): 80%** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific. **Measurability:** The indicator is measurable. **Achievability:** The achievability depends on factors outside the control of the project. **Relevance:** The indicator is highly relevant. **Time-bound:** The achievement may require longer time beyond the project.	No change
Objective indicator 4. 5 additional policies, strategies or implementing regulations at the national level consider the concerns of (agro-) pastoralists for the preservation of their livelihoods Base value (2020): 0 Target value (2020): 5 Current value (2020): 4 policies, 1 strategy and 2 implementing regulations **Achievement in % (2020): 60%** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is not specific enough. **Measurability:** The indicator is measurable. **Achievability:** The achievability of this indicator may be only partially feasible at political level because it depends heavily on the convinced and continued action of the responsible ministry (MoA) and its good will. **Relevance:** The indicator is highly relevant. **Time-bound:** The achievement may require longer time beyond the project.	The concerns of the (agro) pastoralists for the preservation of their livelihoods are incorporated into (i) land rights and (ii) land use policies and into a (iii) national pastoralist promotion programme. Base value 2014: 0 Target value 2019: 3 Current value 2021: 1 Achievement in% 2021: 33% Source: Int, Framework papers

Table 12: Assessed and adapted objective indicators for specific modules (outcome level)

CDSDR objective indicator according to the offer	Assessment according to SMART* criteria	Specified objective indicator
Objective indicator 1. The annual planning processes for the sustainable management of natural resources of the agricultural administration in Afar (BoPAD) and Somali (BoANRD and BoLPD) are aligned with 50% of the four criteria (harmonised, gender-specific, participatory, climate adaptation relevant) of the M&E system Base value (2020): 0 Target value (2020): 2 of 4 M&E criteria are implemented in the annual planning process Current value (2020): 0 **Achievement in% (2020): 0** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific but is beyond the scope of a project if dependent on action of administrative bodies of governments. **Measurability:** The indicator can be measured. **Achievability:** The indicator depends heavily on the continuity of government agencies, which the project can influence only to a very limited extent, if at all. The assumption that the project partner will consistently promote the project has proven to be too optimistic. The achievability is questioned. **Relevance:** The indicator is relevant to the development goal. **Time-bound:** The indicator can be assessed during the project but is likely to require much a longer time period to be realised.	No change
Objective indicator 2. 10 knowledge products on drought resilience and adaptation to climate change (e.g. context- and gender-specific good examples and new approaches, agreements) have been exchanged through 5 networks Base value (2020): 0 Target value (2020): 10 knowledge products exchanged in 5 networks Current value (2020): 10 knowledge products exchanged in 6 networks **Achievement in % (2020): 100%** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific. **Measurability:** The indicator is measurable. **Achievability:** The indicator is achievable **Relevance:** The indicator is relevant to the project outcome **Time-bound:** The indicator can be measured at the time of evaluation.	No change **Note:** The participants of the DREAM conferences will be added as the 6th international network (DREAM I September 2019). A lot of material for the conference, from the SDR programme was prepared and made available on a systemic-integrated approach to drought resilience such as the dry rehabilitation approach.
Objective indicator 3. 2 occupational standards geared to pastoral and agro-pastoral production systems were developed under the leadership and cooperation of 5 public institutions in the states of Afar and Somali Base value (2020): 0 Target value (2020): 2 occupational profiles were developed by 5 public institutions Current value (2020): 16 job profiles were developed by 5 public institutions. The job descriptions were adapted to pastoral and agro-pastoral production systems; 5 public institutions were involved in adapting the job descriptions (MoANR, Ministry of Livestock, Ministry of Environment, ATVET colleges: Gode and Gewane). **Achievement in % (2020): 100% (*800%)*** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific. **Measurability:** The indicator is measurable. **Achievability:** The indicator is achievable within the time frame. **Relevance:** The indicator is highly relevant to the project objective. **Time-bound:** The indicator is time-bound and can be measured at the evaluation.	No change

Objective indicator 4. 60% of 50 representatives of the states and counties (Woreda) assess the improved NRM planning processes and the M&E system for the states of Afar and Somali as well linked. Base value (2020): 0 Target value (2020): 60% of 50 representatives rate the planning processes and the M&E system as well linked. Current value (2020): 0 **Achievement in % (2020): 0** Source: M&E system, **efficiency tool**	**Specificity:** The indicator is specific. **Measurability:** This is difficult to measure given staff movements and lack of monitoring and assessment plans, etc. within the government agencies. **Achievability:** For the reasons above this is difficult to achieve. **Relevance:** The indicator is relevant to the project objective **Time-bound:** Is very difficult to fix within a time period given staff movements beyond the project's control.	75% of state and district representatives (Woreda) rated the NRM innovations introduced and their planning processes for Afar and Somali states as relevant and important for strengthening drought resilience. Base value 2014: 0% Target value 2019: 75% Current value 2021: 100% **Achievement in % 2021: 100%** Source: Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners),

Aspects of project objectives that were not achieved

Regarding the first CDSDR indicator, this would obviously have required full coordination of all relevant donors and partners at national (MoA) and state (BoANRD/BoPAD/BoLPD) level, with the prerequisite that human resources are well organised, trained and processes are clearly regulated. A strategy document for capacity development for coordination, staff training etc. was not approved by the MoA. According to the MoA, planning and organisation ran sufficiently well. However, while the planning capacity in the MoA and in the regional offices has improved, the basic planning system has not changed; it is more top-down and not very forward-looking. Nevertheless, the project brought the technical approaches into national discussions, which were subsequently adopted by the MoA in the guidelines for community-based participatory water catchment management (NPPM 2020, Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners).

The first indicator ('The annual planning processes [...] are aligned (harmonised, gender-sensitive, participatory, climate adaptation relevant') could not be achieved, especially due to the two reorganisation processes in the MoA (Int 1, 2, 6). The fourth indicator *('*State and district representatives (Woreda) rate the improved NRM planning processes [...] as well networked') was neither achieved nor monitored (see Table 11), for the same reasons as for the first indicator. Reworded as: '75% of state and district representatives (woreda) rated the NRM innovations introduced and their planning processes for Afar and Somali states as relevant and important for strengthening drought resilience', it would have been 100% achieved (Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners).

Gender aspects were given far too little consideration and actually only manifested as a quantitative definition in the outputs. A separate specific output area is missing.

In addition, the very numerous actors in the lowlands without sufficient government coordination, a higher than expected frequency and duration of droughts, as well as a high turnover of partner staff due to political developments led to delays and efficiency losses (Int 1, 2, 49, 51). In particular, the duration of functional capacity building in the partner institutions was significantly underestimated in view of the very low baseline situation; nevertheless a very pronounced overestimation of own capacities and knowledge, and the ongoing staff turnover. A final assessment of the use of resources can only be judged by considering all parts of the overall SDR programme.

From today's perspective, the assessment of the project matrix of both projects shows that the outputs and outcomes were insufficiently clear and prioritised (see section 4.2 on Relevance and Figure 5). When planning the projects, too little use was made of internal or external organisational experience (e.g. GIZ project on watershed management in Mai Aini, Eritrea (Bender et al. 2011)). This reduced the effectiveness, as important aspects (e.g. shallow wells) could have been integrated at the same time, improving results. Logically, scaling-up could have been achieved more quickly.

The evaluation team comes to the conclusion that formally the project objective indicators (outcome) for SDR were achieved on average by 81%, but only by 50% for CDSDR.

SDR	Effectiveness dimension 1 – Achievement of the (intended) objectives – scores **25 out of 30 points**
CDSDR	Effectiveness dimension 1 – Achievement of the (intended) objectives – scores **15 out of 30 points**

Effectiveness dimension 2: Contribution to achievement of objectives

This evaluation dimension looks at the contribution of the project to the achievement of the objectives, what outputs were produced for this purpose and to what extent the outputs and capacities were used. In addition, the evaluators analysed the internal and external factors that were decisive for the achievement or non-achievement of the intended objectives.

General achievement of SDR outputs

Under the overall programme, 130 NRM structures were constructed in eight woredas (South Jijiga in Somali and Awra, Chifra, Ewa, Gulina, Kori, Teru and Yallo in Afar). Within the SDR project, a quantitative framework has not been precisely formulated (GIZ 2013a, 2015a). At least, 70 WSW and check dams were planned; 57 were financed and implemented. The other structures were realised by the Afar Soil Rehabilitation Project (64) and IFTAR (9) (GIZ PPP2 2020, GIZ FB 2020). During the SDR project period, 13 WSW could not be implemented due to internal bureaucracy (overly long tendering procedures) and other external delays (drought, emergency aid). Data from the monitoring and evaluation of these structures, such as rehabilitated area in hectares (ha) or data on hydrological changes, were not collected as part of SDR (GIZ PPP2, 2020, monitoring data).

Some of the WSW from the initial phase had design and construction deficiencies such as the too weak construction of the walls, wrong choice of the appropriate cement, lack of suitable building material, inadequate lengths and heights of the weirs that could not cope with excessive amounts of flood water. As a result, the next weirs were built more robustly (GIZ BE 2016, Project progress report, Int 46/14 and 50/16, with communities and transect walk).

Assessment of results hypotheses (SDR)

An essential part of the evaluation is the analysis of the impact hypotheses, as presented in section 2.2 Results model including hypothesis. SDR and CDSDR were planned and approved without theory of change and result hypotheses. Both were re-worked during the inception phase.

The first SDR results hypothesis (see Table 12) links output 1 with the outcome (the direct effects of the weirs and check dams for the project site).

Through SDR, pilot measures were successfully tested in Afar and Somali and the approaches of dry stone measures, check dams and WSWs have been validated. The results of the two studies (Amede et al. 2020, Calow et al. 2019) clearly show the recovery of the degraded areas; clearly reduced erosion; replenishment of gullies; re-vegetation of the land in front of and behind the weirs; return of native grass and tree species; as well as improved conditions for rainfed agriculture; and impressive results in fodder production.

Unfortunately, the design of the WSW cascade systems did not include the creation of shallow wells, as is standard in similar projects in Mali or Sudan (Bender et al. 2011). This would have improved the water supply of the neighbouring communities, created additional sources of income and provided an additional incentive for ownership.

That this innovative approach is the most effective and cost-appropriate method to rehabilitate degraded and desertified dry valleys can be fully confirmed. A preliminary calculation during the transect walks showed that the costs for the weirs could be recovered through two to three harvests (see section 4.4 on Efficiency). This results hypothesis can be fully confirmed.

Table 13: Selected results hypotheses No 1 for SDR effectiveness

Hypothesis 1 (activity – output – outcome)	Through innovative infrastructure for rainwater harvesting (WSW as pilot measures) carried out by trained agro-pastoralists, degraded dry valleys are rehabilitated.
Main assumptions	Innovative measures such as WSW contribute significantly to the rehabilitation of dry valleys.
Risks/unintended results	Is very dependent on external funding and technical expertise that cannot be provided by agro-pastoralists, even if well trained as masons.
Alternative explanation	Water supply infrastructure and innovative rainwater harvesting requires a comprehensive approach, based on a joint and complementary intervention by government authorities, the private sector (construction companies, agro-input and agro-service providers) and (local and international) NGOs.
Confirmed/partly confirmed/not confirmed	Confirmed.

The second results hypothesis shows that through coordinated land use planning and agreements, as well as regional development planning at the community level, the use of natural resources is adapted to climate change and sustainably anchored in the annual plans.

Land use agreements have been made with the dry valley communities and their local administration. The focus was on the protection of the affected areas and their rehabilitation, but it required an integrative overall planning (strategy). The planning approach was initially very top-down and based on resources rather than community needs. Nevertheless, since there is (still) no land policy in the country and thus the rights of land use are not secured, participatory land use planning also lacks a legal basis. In the case of profitable use, for example, by agriculture, forage production, conflicts are foreseeable (Int 7, 10/2, 14/5, 18, 30 with project partners).

The implementation of the WSW was partly directly commissioned, partly through on-the-job training and partly through a partner organisation (Welthungerhilfe). Over time, the direct responsibility for construction, management and maintenance for the structures was transferred out to local executing agencies (BoLAND and PADO) (Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners).

Based on the project activities, by 2019, Somali had integrated and operationalised the DVR approach through dry stone measures and water distribution weirs in 49 woredas. In Afar, this was implemented in at least five woredas by 2021. At the end of the project, however, these NRM measures were not yet anchored in the annual planning. However, this developed very quickly in the second phase (CDSDR II), especially due to the visible effects (Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners, GIZ PPP2, 2020, GIZ FB 2020).

Still missing is a comprehensive (gender and conflict-sensitive) strategy for land utilisation, participatory land use planning, land governance and sustainable land management legally anchored in the district development plans. In addition, it is clear that construction management for NRM measures cannot be done by agro-pastoralists alone, even if they are trained. They lack the higher-level management skills to do so. Nevertheless, the pastoralists were able to build up a second source of income by using the rehabilitated land for arable farming and fodder production, thus strengthening their resilience. The second results hypothesis is partly confirmed.

Table 14: Selected results hypothesis No 2 for SDR effectiveness

Hypothesis 2 (activity – output – outcome)	Through coordinated local participatory land use planning and regional development planning and through land use agreements at community level regarding the use of natural resources in the regions, locally planned NRM measures adapted to climate change are sustainably anchored in the annual district development plans.
Main assumptions	A prerequisite for land use and regional development planning as well as land use agreements at community level is a functioning land use policy. Climate-sensitive NRM, anchored in annual district development plans is effective and sustainable.
Risks/unintended results	No land use policy available.
Alternative explanation	District development plans are strongly dependent on the respective (current) government and its development priorities. District departments are dependent on allocations from national government and or external donors.
Confirmed/partly confirmed/not confirmed	Partly confirmed.

The third results hypothesis reflects the introduction of WSW and the expected diversification of forage and crop production in terms of transitions from pastoralism to more production-oriented agriculture in order to reduce migration or exit from livestock production.

The agricultural production potential made possible by the NRM measures was confirmed by exemplary studies as well as by numerous GIS and 'before-and-after' photo documentations (see photo 2, GIZ PPP1 2020, Int 6, FGD 9/1, 10/2, 11/3, 12/4, 17/7, 19/8, 46/14) with project partner and communities). Many confirmed that pastoralists are now farming more and are proud to 'produce something with their own hands' (Int 6, 7, 8, 52, 57, 58 with project partners). Communities also reported about returnees who can now cultivate their previously degraded land again thanks to the WSW (FGD 14/5, 46/14 with communities).

There is still no reliable supply structure for extension service, quality seeds and other necessary agro-inputs. There are also no adapted agri-finance strategies that would enable agro-pastoralists to make investments, and marketing options are severely underdeveloped. Plans for improved agricultural mechanisation would also be necessary. These are important prerequisites for actually bringing the rehabilitated areas into sustainable strong production.

Flood management is a particular challenge for non-settled pastoralist communities, as was the case for communities in Afar, who move into the neighbouring highlands for at least five months of the year in search of fodder and water during the dry seasons. As the SDR project has shown, the adoption of flood-based agriculture could be an important strategy to diversify livelihoods and rehabilitate degraded pastoralist rangelands in a very short time (Amede et al. 2019; Calow et al. 2019; ICRISAT 2017, 2019).

Nevertheless, an adaptive management is important, providing sustained support to test and refine feasible strategies (e.g. WSW-based landscape management) to understand complex systems and management options using short and long-term climate projections (Hardegree et al. 2017) and expert-based assessment tools.

The WSW basically have an improving effect on soil moisture (Amede et al. 2020; Bender et al. 2011; Calow et al. 2019). Of course, the invasive plants (Prosopis, Parthenium) also benefit from this. This can be well controlled by timely management. However, where these species have already spread, it becomes very difficult for communities to control them without technical and mechanised support. The extreme case of 'Tabiadora', which was scandalised particularly in the Frontal 21 report, was such a community, where Prosopis had already spread especially in the upper catchment. The weirs led to an accumulation of seeds in front of and behind the weirs. This was not the intention of the project. However, there was no migration of the community as described in the film. The community is working hard to push Prosopis back and to immediately intensively cultivate the rehabilitated areas (Int/FGD 9/1, 10/2, 11/3 with project partners and communities). For more information, see Effectiveness dimension 4: 'Unintended results'.

Through the cooperation with SDC (co-financing), the results could be increased and complemented by the emergency measures in a very meaningful way.

Nevertheless, the results hypothesis itself is confirmed.

Table 15: Selected results hypothesis 3 for SDR effectiveness

Hypothesis 3 (activity – output – outcome)	The introduction of WSW and the expected diversification of fodder and crop production will help the transitions from (a) subsistence farming to commercial farming, and (b) from subsistence farming to out migration or exiting from agriculture.
Main assumptions	Pastoralists are willing to get more involved in agriculture. They have access to important agro-inputs such as seeds, tools and extension services, as well as improved marketing. The transitions from pure pastoralism and subsistence farming to (business) production-oriented agriculture are necessary as a result of population growth, rural migration, declining soil fertility, unsustainable farm units as well as the trend from pastoralism to agro-pastoralism.
Risks/unintended results	Prolonged droughts, invasive plants, lack of access to agro-inputs and fair marketing options, and lack of soil improvement effects from NRM measures.
Alternative explanation	No alternative explanation.
Confirmed/partly confirmed/not confirmed	Confirmed.

General achievement of CDSDR outputs

The CDSDR output indicators (A. [...] processes for planning, monitoring and implementation regarding NRM are improved; C. [...] capacity of professional institutions [...] is improved) were only partially achieved until end of project. Output indicator B (Knowledge management on drought resilience (including web-based network) is improved at the state and national level) is fully achieved.

The DREAM Conference was an important milestone for networking and an excellent forum for knowledge exchange, lobby and advocacy work. This instrument will be continued. The second conference is planned for 2021 (Int 6, 7, 22, 23, with project partner and universities).

Some 21 policy dialogues were conducted under CDSDR and included presentations at Pastoral Task Force meetings, pastoralist days, inputs into new WB and IFAD-funded projects, field visits by Ethiopian decision-makers in Afar and Somali regions, various types of learning events by regional and federal administrations. Seven policies, strategies or implementing regulations (such as Pastoral Area Development Policy and Strategy, Prosopis Management Strategy, Participatory Rangeland Planning Guideline, Community-based watershed management in lowland areas) and two comprehensive studies were produced (GIZ FB 2019, PPP1 2020).

Assessment of results hypotheses (CDSDR)

The first CDSDR results hypothesis draws the link from improved knowledge management at regional and national levels of technical/professional networks in NRM to improved planning and monitoring of NRM measures of affected districts to enhance drought resilience.

At the initiative of CDSDR, two networks in particular were strengthened: the pastoral working group and the DREAM Conference Network, which was set up during the DREAM I Conference. Basic documents such as ‘Community-based participatory watershed development’ (MoA CbPWD 2015), ‘Participatory rangeland planning with pastoral communities’ (PRM 2015), and training materials for different levels of education are now available (Int 23, 45 with vocational training institutions, GIZ FB 2019).

Until 2019, particularly planning, monitoring and implementation of NRM measures was not consolidated due to the reorganisation processes in the public administration, but also due to the initial governmental reservations towards the WSW (Int 6, 7, 21, 52 with project partners). With the recognisable success of the measures at the

end of the project, this has developed very quickly within CDSDR II (Int 1 and 2 with project staff). Various vocational schools and institutions (like the Agriculture Technical and Vocational Education and Training (ATVETS) Gewane and Gode, the Adadale College and the University of Mekelle) and woreda-level agricultural offices are using the CDSDR-funded training to teach and promote appropriate climate-sensitive/ adaptive NRM measures. Occupational standards were approved and the aforementioned training institutions conducted training courses for woreda experts, woreda and kebele development agents, as well as government development experts (Int 23 and 45 with vocational training institutions).

The regional project partners have a strong interest in capacity development because the demand from the communities is becoming increasingly urgent (Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with regional project partners). Also due to the high turnover of staff among project partners, more private sector actors and national NGOs need to be involved and trained.

The provision of context and gender-sensitive training material, as well as the strengthening of networks are important elements for knowledge management. The conclusion that the districts benefit more from this in their planning and implementation of NRM measures to improve drought resilience is partially confirmed. Key actors from the private sector – the construction companies – were not sufficiently integrated (Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with regional project partners; 5 and 40 with external consultant). This means that an important element for the efficient implementation of the necessary measures and their monitoring and maintenance is missing.

Table 16: Results hypothesis No 1 for CDSDR effectiveness

Hypothesis 1 (activity – output – outcome)	If context- and gender-sensitive teaching material such as good practice examples and manuals, as well as strategies and guidelines in the field of NRM with regard to drought resilience and adaptation to climate change are available at regional and national level, technical and professional networks will be supported and their knowledge management is improved. This will benefit affected districts in planning and monitoring drought resilience measures.
Main assumptions	Affected districts are interested in professional networks and special teaching materials (manuals) and apply improved knowledge in planning and monitoring of drought resilience measures.
Risks/unintended results	Missing teaching material and professional networks. Uncommitted district administration staff.
Alternative explanation	No alternative explanations were identified.
Confirmed/partly confirmed/not confirmed	Partly confirmed.

The second CDSDR results hypothesis reflects on improved competence development and a professional profile for effective counselling of pastoral and agro-pastoral production systems.

In the planning context, state extension workers were the predominant actors. Agricultural extension workers are currently being trained but are not yet operational. The effectiveness of the government extension service in Ethiopia is viewed critically, due to the usual difficulties of the government extension service (few resources for transport, fuel and modest commitment) (Int 2, 10/2, 11/3, 14/5, 27, 43, 46/14, 55 with project staff, partners and communities). Other actors from the private sector (e.g. agro-input traders, agro-service providers, construction companies) and NGOs are needed to ensure effective extension (Int 27, 43 with NGOs and 40, 42, 59 with external consultants).

For effective and sustainable support of pastoral and agro-pastoral production systems and communities and their livelihoods, the issues of agricultural trade/marketing, agricultural financing strategies, as well as a supportive land policy, are sustainability determining factors in addition to the important elements of NRM.

The hypothesis is only partially confirmed for the reasons mentioned above.

Table 17: Results hypothesis No 2 for CDSDR effectiveness

Hypothesis 2 (activity – output – outcome)	Through the graduate and postgraduate training of advisors in vocational training institutions, based on a competence development and professional profile, pastoral and agro-pastoral production systems can be advised more effectively.
Main assumptions	Competence development and professional profiles can effectively support pastoral and agro-pastoral production systems.
Risks/unintended results	Lack of payment for the extension workers. Unwillingness of the target group to work with incompetent and/or corrupt advisers. Uncommitted support from the public sector and donors.
Alternative explanation	Extension services adopted by agro-input and agro-service providers and/or qualified national NGOs for pastoral and agro-pastoral production systems, could be expected to more sustainably and effectively support agribusiness promotion and the innovative approach of NRM (WSW).
Confirmed/partly confirmed/not confirmed	Partly confirmed.

As mentioned earlier, the project did not measure changes in subsistence farming for improved self-sufficiency and further commercial farming, and conversely, migration to urban areas, because it was not included in the monitoring plan. SDR's contribution to achieving the objectives was successful. CDSDR suffered from the difficult reorganisation processes of the project partner, as already described above. Nevertheless, it laid an important foundation for success in CDSDR II through forward-looking and adaptive management.

SDR	Effectiveness dimension 2 – Contribution to achievement of objectives – scores **25 out of 30 points**
CDSDR	Effectiveness dimension 2 – Contribution to achievement of objectives – scores **20 out of 30 points**

Effectiveness dimension 3: Quality of implementation

Project management (factors for the successful achievement of the project objectives and obstacles)

The competent and collegial cooperation between staff of the projects within the SDR programme in Ethiopia was conducive for effective project management. The programme was designed to enable links to other more technical projects, which created a knowledge hub to introduce the approach to partner institutions (and other donors). In particular, the consistent piloting of WSW, the effective involvement of regional partners, the accompanying training of bricklayers, but also patient implementation even against resistance from within the organisation as well as from the partner, have now created a product of outstanding importance and effectiveness.

The project was obviously flexible in its approach and followed adaptive management to shift activities depending on which were more promising or to stop those that were not. After initial feedback from the communities on various measures implemented in the first year, the project focused on those that the communities preferred (Int 6, 8, 18, 21, 22, 57, 58 with project partners; FGD 10/2, 11/3, 14/5, 46/14 with communities). The learning experiences from the SDR and CDSDR project contributed significantly to the development of the GIZ SDR cluster programme in Ethiopia.

Implementation obstacles

Initial obstacles were the political situation (MoA reservations against WSW, change of government, reorganisation of the MoA) and the inexperience and relatively slow implementation strategy of the intervention due to bureaucratic tendering processes. In addition, there was a high turnover of staff among the partners, which was accelerated by political changes. This required repetitions of training courses. The organisational changes within the MoA caused delays; the time needed for such fundamental paradigm shifts (active support for the development of lowland regions, instead of favouring the highlands) at institutional and societal level

(also with regard to the interests of other donors) was significantly underestimated. Periods of drought regularly resulted in partner staff being deployed for relief activities, leaving little time for continuous implementation of the project activities. (Int 1, 2, 6, with project staff and project partners, GIZ FB 2020).

The development of technically viable, economically and socially appropriate drought resilience solutions took longer than estimated. At the beginning of the project, staff worked more on individual technical solutions (see SDR indicators 1 and 2). As implementation progressed, it became clear that a systemic approach was needed, which also significantly extended the testing phase. Both projects were affected by this. As a result, planning and implementation, but also ownership and responsibility, could be strengthened among the project partners and in the target communities (Int 6, 7, 8, 16, 18, 21, 22, 29, 52, 57 and 58 with project partners).

Monitoring system

The project has an M&E system with appropriate tools and procedures to measure outputs and changes in relation to the key indicators (GIZ PPP3). The contribution of the activities to the outcome indicators was listed under the module objective and described quantitatively or qualitatively accordingly. These include, in part, yield and biomass measurements, photo monitoring and fieldwork inventory, field data collection, gully depth and sedimentation measurement and monitoring, simple impact monitoring and case studies, application survey, and baseline and endline surveys.

The weaknesses of the results matrixes of both projects were replicated in their M&E system. Important indicators to measure the effects of WSW – for instances changes in groundwater level, number of hectares rehabilitated per weir, increase in biomass, return of native forage crops, effects on (re)settlement in the dry valleys, annual increases in production and income, but also watershed size, annual rainfall and other contextual data – were not measured or only sporadically. However, these were monitored within the Afar Soil Rehabilitation Project (Int 1, 2 and 60 with project staff).

Conflict-sensitive project management

In Afar, the SDR project addressed shared resources in a complex agro-pastoral and clan-based setting. The project tried to ensure through participatory planning that all parties with legitimate interests (primary, secondary and tertiary use rights) were included. This could not always be ensured as some clans had conflicts (or a history) with other clans over use rights and may have deliberately not been mentioned as interested parties by the local population (Int 1, 2 with project staff, Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners and FGD 10/2, 11/3, 14/5, 46/14 with communities). There is no known case where this has led to (violent) conflict, but the possibility of such an occurrence is always present in this type of context. Project staff were required to work sensitively and prudently, to gather extensive information and to check it conscientiously. This was implemented carefully and professionally by both projects (Int 7, 16, 21, 29, 52, and 58 with project partners.

CDSDR had no direct activities in the field, as they were carried out by other projects in the overall programme. However, as CDSDR had the task of collecting and analysing information from all these projects, it was the platform for discussions on (potential) conflicts. The project ensured as much as possible that other projects in the field involved all relevant parties in decisions about resources and avoided situations where land use rights were contested or other conflicts could escalate. The management always tried to have a deescalating effect on all actors.

Security risk monitoring

The project monitoring systems involved close contact with relevant agencies and other donors to constantly assess security risks. The partner organisations' staff (MoA, BoLAND, etc.) always informed the management very quickly about upcoming critical events and situations (Int 1, 7, 29, 30, 57 with project staff and partners). This led to a fairly good overview of the risks. The two regional project managers were able to provide detailed analyses of situations and risks due to their extensive networking with political and clan-based decision-makers, and were in close contact with the programme management. This efficient approach to monitoring risks in the context of conflict, fragility and violence was very effective. Whenever risks were deemed unacceptable, project activities in the field were reduced or suspended. The project always scrupulously followed the risk management recommendations of the GIZ Risk Management Office (Int 1, 2, 44 with GIZ staff).

In 2018, an additional risk was included in the project progress report that named 'ethnically based conflicts', in particular the conflict between Afar and Amhara and Oromia and Somali regions. Tensions between the Somali and the Afar region are also on the rise. All security incidents were listed in the reports.

The quality of implementation (project management, dealing with obstacles during implementation, conflict-sensitive project management, as well as the monitoring of security risks) is regarded as good. The weak point is the monitoring system.

SDR	Effectiveness dimension 3 – Quality of implementation – scores **18 out of 20 points**
CDSDR	Effectiveness dimension 3 – Quality of implementation – scores **18 out of 20 points**

Effectiveness dimension 4: Unintended results

Unintended negative results

Unintended negative effects were caused by isolated new erosion ditches due to improper weir design and construction (Int 5, 6, 40 with project partners and consultants). This phenomenon is known and predictable, as the measures are implemented in a rapidly changing environment and it is difficult to always find the optimal place for the weirs or, indeed, know the amounts of flash flooding. Not all environmental changes (intensity of rainfall, alteration of river flows due to the amount of water or altered geomorphology) are predictable, but they can be controlled through regular monitoring of the weirs. This requires rapid adaptation measures by the communities and should be taken into account in the district development plans. A starting basis for these aspects has been provided by the ICRISAT modelling (ICRISAT 2020), see recommendations for suggested improvements. Early weather warnings and preparedness would also help to prepare for such events. CDSDR has discussed these aspects with the regional partners. One result was that pastoralists can be held less accountable because of their way of living (transhumance). At the end of the CDSDR programme in mid-2019, it was not possible to empower all communities to deal with these challenges. However, at the time of the evaluation, a number of agro-pastoral communities demonstrated that they had successfully learnt to deal with these infrastructures by observing, analysing and correcting and had carried out the maintenance work independently and with the support of the trained masons (Int 6, 7, 27, 52, 57 with project partners and NGOs; FGD 10/2, 11/3, 14/5, 46/14).

Conflicts between mobile pastoralists and more sedentary agro-pastoralists, especially during periods of drought – to the knowledge of the evaluation – rarely occurred. Project measures have not contributed to escalating or intensifying conflicts. Risks of conflict and violence are resolved by the communities themselves (Int 7, 16, 21, 26 with project partners; and Int 37, 55 with project stakeholders).

On some unused sites in dry valleys (e.g. Tabiadora), there was a rapid spread of Prosopis and Parthenium (the most invasive plants in all sub-Sahara African countries and beyond). Wherever soil moisture is improved through (NRM) measures, invasive plants have advantage over other species due to their ecological designation (Ilukor et al. 2016, Shiferaw et al. 2021, Treydte et al. 2015), especially owing to a lack of or delayed land and pasture use and management. This was a learning experience for the target group (FGD 9/1,

11/3). Meanwhile, the communities have organised themselves and are combating Prosopis by uprooting or burning. Prosopis in particular has an extremely invasive growth and actually requires continuous (mechanised) control. The communities have difficulty, especially during droughts, to keep up this 'control', as their capacities are tied up with water and food for livestock and family (FGD 9/1, 11/3). The project partner and the communities were well aware of the problem and informed SDR and CDSDR about it. Since these effects had not been foreseen in the project matrix, there was no strategy to deal with this (GIZ 2013a, 2015a). Furthermore, GITEC was supposed to implement a strategy for Prosopis control, financed by KfW, so that the project management did not want to duplicate the intervention. Because of delays, this was not started until March 2021 (Int 20, 25 with GITEC staff). In addition, the prolonged droughts and emergency aid measures were also a reason for communities to neglect Prosopis control during the project period (Int 1, 2, 7, 52 and 58 with project staff and partners). In principle, the advanced Prosopis invasion requires a different management approach that cannot be managed by the (agro) pastoralists alone. (Int 5, 20, 25, 40, 42, 59 with project stakeholders).

Other negative effects, such as the spread of malaria through standing shallow pools of water (as described in the TV documentary Frontal 21) were not confirmed by the population, the authorities, or by health posts staff (8, 9/1, 11/3, 12/4, 14/5, 16, 18, 19/8) with project partner, community members and leaders.

Formally not agreed positive results

For formally not agreed positive effects, the project noted the raising of the groundwater level, the filling of (deep) gullies through sedimentation, the significant recovery of degraded vegetation, the return of native flora and fauna, and the improved protection of near-river infrastructure (houses, bridges, etc.), which was confirmed by the communities and pastoralists in the rehabilitated valleys (FGD 10/2, 11/3, 14/5, 46/14). These were as a result of the improved river regulation (braking effect of the water flows) by the weirs, as well as the reduction of soil degradation. In the context of watershed management, however, these are actually intended effects.

Other formally not agreed positive effects are that people now collect the sand sediment in the river-course in front of the weirs and sell it to construction sites in nearby cities, and thus generate additional income (Int 52, 55, and FGD 56/19 with project staff and communities).

Explicit monitoring of the unintended negative and positive effects will be carried out from 2021 within the CDSDR III project.

SDR	Effectiveness dimension 4 – Unintended results – scores **15 out of 20 points**
CDSDR	Effectiveness dimension 4 – Unintended results – scores **15 out of 20 points**

Photo 2: A comparison; before and after the rainy season (source: CDSDR Project)

Methodology for assessing effectiveness

Table 18: Methodology for assessing OECD/DAC criterion: effectiveness

Effectiveness: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Achievement of the (intended) objectives	The basis are the respective output indicators from the project matrix and the results of the monitoring system	**Evaluation design:** The evaluation team uses the project result monitoring system and the contribution analyses to assess the results at outcome level **Empirical methods:** The evaluation team examined the results produced in terms of qualitative and quantitative performance and the implementation approach. Interviews with stakeholders and the indirect target group are part of the contribution analysis The evaluation of the indicators was based on project reports, interviews with stakeholders, field observations and expert review and comparison with thematically similar projects. Triangulation was used to validate the information	• The evidence base for the assessment of (intended) objective achievement is good, as it is based on the interviews with the project partners, the rural communities and the project's monitoring system. Triangulation of data and methods (e.g. through transect walks) is strong
Contribution to achievement of objectives	The SDR outcome hypotheses 1–3 and the CDSDR outcome hypotheses 1–3. See previous section on dimension 2	**Evaluation design:** Project result monitoring system and contribution analyses were used to assess the causal links between project activities, outputs and outcomes **Empirical methods:** Progress reports, publications and other products developed by the project team and partners were analysed in combination with interviews with stakeholders to assess the contribution of the outputs from different perspectives	• Good data quality, triangulation possible, strong evidence
Quality of implementation	The success factors of Capacity Works (result-based monitoring, strategy, cooperation, governance, processes, learning and innovation) are effectively implemented	**Evaluation design:** Explorative following the evaluation questions with project staff, stakeholders and review of reports **Empirical methods:**	• Good data quality, triangulation possible, strong evidence

Effectiveness: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
		Progress reports, publications and other products developed by the project team and partners analysed in combination with interviews with stakeholders to assess the contribution of the outputs from different perspective	
Unintended results	It is examined whether non-intended positive or negative effects have occurred or are foreseeable, what potentials and risks result from them and whether the projects have valued positive non-intended effects or reacted adequately to negative non-intended effects. The evaluation also reflects particularly on the (unintended) negative effects mentioned in the Frontal 21 media documentation. The facts and assessments were made and evaluated by the evaluators	**Evaluation design:** Most significant changes targeted questions on expectable negative outcomes have proved to be useful for assessing unintended results. **Empirical methods:** Interviews with stakeholders (partners, field staff, target group members, health post staff), transect walks and participatory observations to assess unintended results	• Good data quality, triangulation possible, strong evidence

4.5 Impact

This section analyses and assesses the impact of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex 1a/1b).

Summarising assessment and rating of impact

Table 19: Rating of OECD/DAC criterion: impact

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Impact	Higher-level (intended) development changes/results	25 out of 30 points	25 out of 30 points
	Contribution to higher-level (intended) development results/changes	32 out of 40 points	40 out of 40 points
	Contribution to higher-level (unintended) development results/changes	25 out of 30 points	25 out of 30 points
Impact score and rating		Score: **82 out of 100 points** Rating: **Level 2: successful**	Score: **90 out of 100 points** Rating: Level 2: **successful**

‘If there is anything GIZ has done for Ethiopia, this is one model they should be proud of and promote further in the wider Ethiopian lowlands and beyond’ (Tilahun Amede, PhD, Head of Resilience, Climate and Soils, Alliance for a Green Revolution in Africa). This quote was similarly voiced by many different interviewees

recognising and testifying the widely appreciated impact of the project results. Based on the project's own GIS and photo documentation, site visits and participant observations, and interviews with many different stakeholders, outcome is evident within the social, environmental and economic impact categories.

The social impact begins with a noticeable change in awareness among pastoralists, communities, regional and national government institutions, namely that degraded land can be rehabilitated and even made more productive. Pastoralists are proud to have produced something 'with their own hands' (Int 6, 10/2, 11/3, 14/5, 46/14) that serves their food and income. It can be observed that pastoralists are settling more in the rehabilitated valleys, which is especially welcomed by women. Environmental/ecological impacts such as significant environmental recovery, biodiversity enhancement, and strengthened ecosystem services can be confirmed. In addition, the economic effects range from the generation of an additional individual source of income, to an improvement in the basis of production and housing, to a (possible) considerable contribution to the national gross domestic product (GDP) (Int 5, 7, 8, 16, 18, 21, 22, 29, 40, 42, 52, 57, 58 with project partners, experts and target group; and monitoring data).

Table 20: Impact and evidence contribution

Impact	Evidence of contribution
Contribution to Agenda 2030. In particular to SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 13 (Climate activities), and SDG 15 (Living in the countryside)	Studies (Amede et al. 2020; Calow et al. 2019; ICRISAT 2017, 2019, 2020; Tilahun et al. 2015) from the project area have impressively analysed the agricultural potential that is possible in the rehabilitated dry valleys. Through more intensive agricultural production, additional income can be generated and more food can be grown for peoples' consumption. This was confirmed by interviewees from communities visited as well as regional project partners and NGOs. During the village visits, signs of improved livelihood could be identified such as investments in house and roof, water and fodder storage and working tools. Interviewees reported increased settlement near the weirs, encouraging success with agricultural production and marketing (FGD 9/, 10/2, 11/3, 12/4, 15/6, 17/7, 19/8 with communities, Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners and Int 27, 43, 55 with NGOs). Field visits before and after the rainy season, photos and satellite images confirm the re-vegetation (recovery of the environment) of the desertified sites, which also makes a (small) contribution to climate protection. The rehabilitation of rural dry valleys has made a general contribution to SDG 15 by combating desertification and land degradation, and promoting biodiversity through the restoration of terrestrial ecosystems and their sustainable management.
Contributions to Ethiopia's 'Growth and Transformation Plan' (GTP II), for the agricultural sector, especially for pastoralists and agro-pastoralists	With GTP II Ethiopian Government aims among others to (i) increase agricultural and livestock production and productivity of smallholder farmers (and pastoralists), (ii) improve marketing systems, (iii) increase private sector participation, (iv) increase irrigated land and (v) reduce the number of households with inadequate food. In particular, SDR has contributed to increasing agricultural and livestock production and productivity of smallholder farmers (and pastoralists), expanding the area of land under cultivation and reducing the number of households with insufficient food (FGD 9/1, 10/2, 11/3, 12/4, 14/5, 15/6, 17/7, 19/8, 46/14 with communities and Int 8, and 18 with project partners).
Gender equality	SDR training and interventions along income-generating measures and value chains specifically target women, e.g. by promoting milk marketing. The customised training and income increase through e.g. milk sales enable women to improve their social status (FGD 10/2, 12/4, 14/5, 15/6, 17/7, 19/8, 32/9, 33/10, 34/11, 50/16, 53/17 with communities' female members).
Improved resilience of agro-pastoral communities due to improved absorptive, anticipatory and adaptive capacities	Through initiated fodder cultivation, fodder storage (hay) and improved pasture management and through improved agricultural production, the resilience of the rural population in Afar and Somali was strengthened. (FGD 9/1, 10/2, 11/3, 12/4, 14/5, 15/6, 17/7, 19/8, 46/14 with communities and Int 8, and 18 with project partners).

Increased GDP through strengthened pastoral employment sector	By strengthening the pastoral production system (see previous points), it can be assumed that this will also have a positive contribution to the pastoral employment sector. This was confirmed at the livestock market in Yallo (Int 12/14, 48/15, 49 with pastoralists, communities and project staff).

In total, the impact of the SDR project is rated Level 2: successful, with 82 out of 100 points, the impact of the CDSDR project is rated Level 2: successful, with 90 out of 100 points.

Analysis and assessment of impact

Impact dimension 1: Higher-level (intended) development changes/results

Overarching developmental results plausibly achievable in the future

This dimension analyses the extent to which the overarching developmental changes to which the projects were intended to contribute are identifiable or foreseeable. A differentiation is made between the level of the intended beneficiaries and particularly disadvantaged or vulnerable groups involved and affected.

Increasing drought resilience is the overarching objective of the projects. The outcome indicators address the increased use of agricultural and pastoral technologies adapted to climate change. Even though GIZ projects do not usually have the financial clout to reach large numbers, they have an important role in identifying suitable technologies, testing them and having them scientifically evaluated. Prepared, cleverly designed and following developed approaches to scaling-up (e.g. Thomas 2018), they can then be implemented widely and effectively by KfW or other organisations. Both projects have made a significant contribution to this (Int 5, 6, 42, 59).

Another important contribution of SDR and CDSDR is the current channelling of national and regional budgetary resources through the regional authorities BoANRD and BoPAD into the expansion of the DVR approach. The government M&E system has not yet provided exact figures on this, but an estimated additional 2,000 households from the marginalised (pastoral) population are currently benefiting (Int 7, 8, 16, 18, 21, 22 with project partners).

Indirect target groups and ‘leave no one behind’

The WSW methodology focused on the development, testing and implementation of an innovative technical approach rather than on helping the poorest of the poor and marginalised groups. The pastoralists particularly in Afar, and Somali, belong to the marginalised group. SDR has undertaken specific activities that benefit women and, to a lesser extent, youth. During the participatory planning sessions, special sections were created to allow marginalised groups to voice their concerns and wishes. Nevertheless, the traditions of the target groups are difficult to change and it is a slow process. SDR carried out an intervention in Somali region to enable IDPs to participate in agricultural activities through seed distribution. The results were moderate because many IDPs soon further migrated (Int 1, 2, 49, 51 and data from observer mission).

CDSDR plays a role in unifying innovative approaches across the German technical cooperation, strengthening drought resilience projects and developing a clear strategic outlook for all projects within the overall programme. There was little focus on the benefits for women and youth (GIZ 2015a). More could have been achieved with a defined output and design (project), especially considering that SDR alone had a duration of more than 7 years. At least there is enough material and information from similar projects that the next intervention should be able to build on (Int 1, 2, 25, 41, 49, 51). The private sector in terms of contractors and agro-input/agro-service providers were not sufficiently involved and considered, but they are important players, especially for an upscaling process.

Owing to the limited reporting (less quantitative data) on the overarching goals, the data situation is only of limited reliability for making a sound statement on the achievement of the overarching (intended) development policy changes.

SDR	Impact dimension 1 – Higher-level (intended) development changes/results – scores **25 out of 30 points**
CDSDR	Impact dimension 1 – Higher-level (intended) development changes/results – scores **25 out of 30 points**

Impact dimension 2: Contribution to higher-level (intended) development results/changes

This dimension analyses the extent to which it is plausible that the projects have contributed to the overarching developmental changes defined via the impact results hypotheses. The evaluation takes account of internal and external factors for the (non-)achievement of the contribution. The extent to which the projects have led to structural or institutional changes and the extent to which they were/are exemplary and have a broad impact are also considered.

The first impact hypothesis of the SDR project looks at the extent to which the rehabilitation of degraded land and diversified fodder and food production through climate-adapted cultivation and production methods significantly increases the income of the pastoral and agro-pastoral population in Afar and Somali, through production, processing and marketing.

Studies have impressively described the agricultural potential of field and tree crops as a result of water capture by WSW (Amede et al. 2020, Calow et al. 2019, ICRISAT 2017, 2019). These studies have been conducted at selected representative sites/communities in the project area by ICRISAT, the University of Cambridge and the national universities of Mekelle (Int 13, 23, 42). In addition to agricultural potential and options, it also became clear what support the affected communities need and that this cannot be covered by a government extension service. This requires a broad alliance of actors from the private sector, NGOs and government agencies (Int 5, 37, 40 with consultant). The potential is considerable, not only for Afar and Somali, but for the entire region (see section 4.4 on Effectiveness).

As evidenced by interviews with stakeholders a mind-set change among the pastoralists towards a livelihood based on agro-pastoralism was clearly noticeable within the communities, and regional and national government institutions. Pastoralists in Afar were evidently proud to have produced food and fodder with their own hands as a result of water spreading and retention. The increased settlement in the vicinity of the weirs leads to a marked reduction in transhumance and is especially beneficial for women for reducing time and distances travelled to collect water, and better access to health and education facilities. Better water quality results in a reduction in health problems (Int 7, 8, 10/2, 11/2 with project partners and target group).

Because of the interventions, especially by SDR at community level, a stable basis of trust has grown. This has created remarkable entry points, for example for women's empowerment through education, family health training, better food and nutrition, and the possible establishment of village savings and credit clubs (Int 9/1, 10/2, 12/4, 15/6, 17/7, 32/9, 33/10 with communities' female members). On the ground, improvements to housing are also evident from the use of greater biomass and the use of construction knowledge, primarily for the weirs, but now extended to housing (FGD 10/2, 11/3, 14/5, 46/14).

The interventions have stimulated greater dialogues among community leaders *'Kedoh Abbobati'* who debate the pros and cons of NRM innovations, choices among interventions such as crops and fodder species. This helps build on and reinforces customary rules and regulations that must be part of the solution to better community-managed natural resources (FGD 10/2, 11/3, 14/5, 46/14).

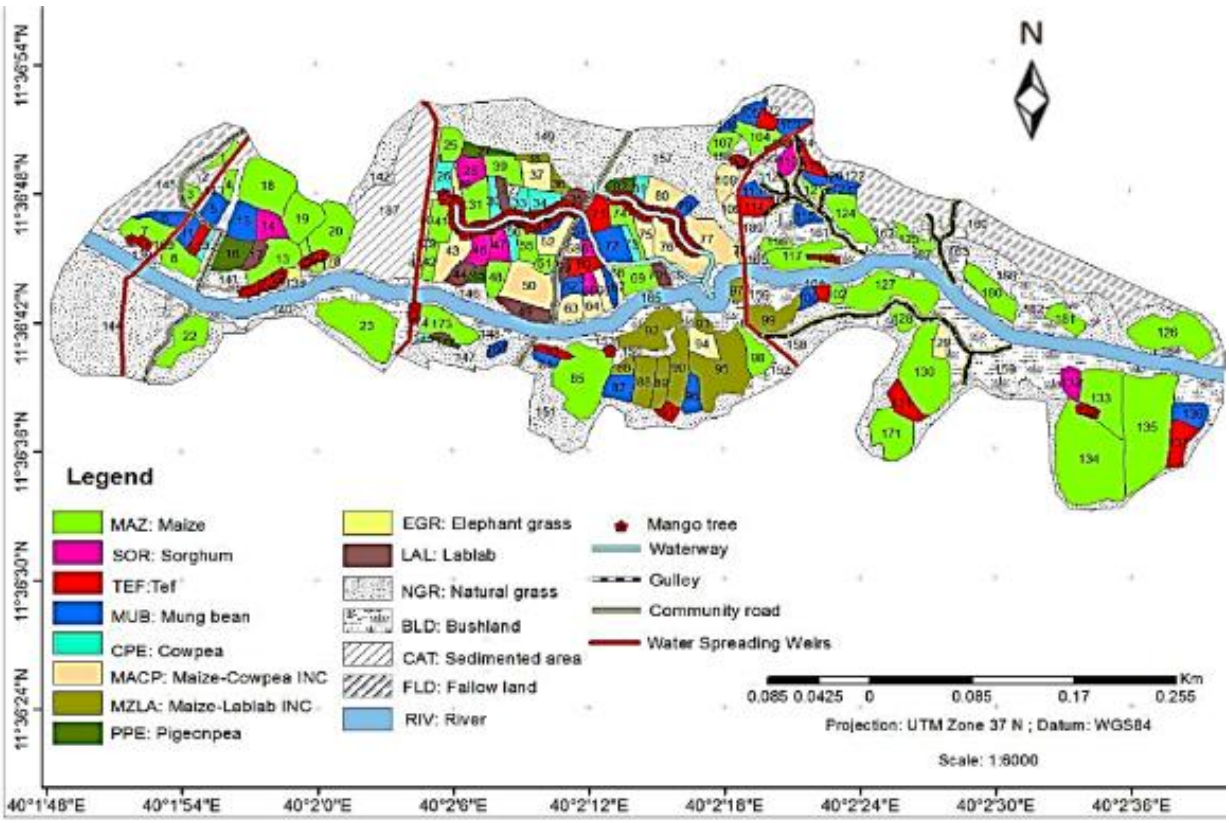
The innovations and changed attitudes of the target group regarding agricultural production help to build local trust, attract the attention of state institutions, identify areas for investment and attract global donors. This stimulates the development of implementation strategies, defines the changes desired by the communities, and promotes economic exchange between and within communities (Int 18, 21, FGD 10/2, 11/3, 14/5, 46/14 with project partners and target group). Improved NRM, especially in watersheds, combined with diversified climate-

sensitive agricultural production including marketing can ensure sustainable food security. This also includes nutrition education and training for women, which has not taken place in SDR. Women are requesting better nutrition, access to water and income generation (Int 18, 21, FGD 10/2, 11/3, 14/5, 46/14 with project partners and target group). This contributes to both better health and wealth for agro-pastoral and pastoral households.

In Afar, the WSW in Shekayboru in Chifra district (11°45′N; 40°57′E) and the Wokredi site in Yallo district (12°21′N; 39°52′E) have resulted in remarkable water capture and storage, slowed down erosive run-off, fertilised the soils and rapidly filled in gullies that are big enough to impede movement and transport of animals and goods. Although not really quantified, a rise in groundwater levels is evident and increases in fodder and biomass is most probably as great as 150%. The flooding patterns and capture of soil, nutrients and water creates up to four different zones behind, between and in front of the weirs (see photo 3). Local indicators of soil moisture in these zones are being used to determine what should be grown and where on the rehabilitated land (Amede et al. 2020).

Communities (Gulina, Tabiadora, Awro, Ewa, Sheykaburo, Amadle and Bolidid) report a return of native species of fauna and flora (especially popular, because they are nutritious forage grasses and trees), indicating an enrichment of the biodiversity that they report was being lost due to land degradation (FGD 10/2, 11/3, 14/5, 17/7, 19/8, 33/1, 34/11 with communities in Afar and Somali).

Photo 3: Crop allocation map of intervention area in Chifra, Afar for 2017 main season (Source: Technical report June 2017 to Dec 2017 by Tilahun Amede ICRISAT).



The principles and challenges of NRM, and in particular the introduction, implementation and maintenance of WSW, are well explained in the GIZ publication ‘Water-spreading weirs for the development of degraded dry river valleys’ (GIZ 2012). The GIZ projects under evaluation have extended this strategy paying greater attention to institutional and organisational issues that are recognised as essential for improving NRM. It is important to consider both the surface water aspects of captured floodwater that can be used for plant production within the first growing season and the groundwater aspects that may have longer term implications for future water supplies and rising water tables (Bender et al. 2011).

In particular, the studies mentioned above have outlined the potential for market-oriented production with cereal, vegetable and tree products that go beyond food security. The diversification of field and tree crops grown by the agro-pastoralists has increased significantly; and there is still much room for improvement here. The increased fodder availability has increased milk production and improved the condition of livestock which can contribute to the national level production of animal products. For perhaps the first time there is an entry point for small-scale business-oriented farming including small-scale irrigation activities that usually favour women and strengthen their socio-economic position in families and communities. The training of masons has provided additional income and job opportunities including house construction, sand 'mining' and water sales (Int 11/3, 14/5, 46/14 with target groups).

SDR has mainly been concerned with the implementation of the WSW, and the accompanying increased agricultural production and promotion of products. Therefore, there are some project sites with high productivity, but the majority is still more involved in subsistence farming. Consequently, impact hypothesis 1 can only be partly confirmed, as the rehabilitated dry valleys are a core prerequisite for increased income; but only professional, sustainable and comprehensive agricultural management improves living conditions and livelihoods – and avoids occupation by invasive plants.

Table 21: Impact hypothesis 1 for SDR impact

Impact hypothesis 1 (activity – output – outcome)	The rehabilitation of degraded land and increased, diversified feed and food production through climate-adapted cultivation and production methods will significantly increase the income of the pastoral and agro-pastoral population based on production, processing and marketing in the Afar and Somali states.
Main assumptions	Pastoralists and agro-pastoralists are willing to invest more in agricultural production, are fully supported and advised on sustainable agricultural production, and have at least an adequate and reliable supply of seeds and other agro-inputs. Access to fair marketing is ensured.
Risks/unintended results	Crop failure due to climatic extremes, insect infestation or conflicts. The lack of a reliable competent advisory service, agriculture-adapted credit options and no access to markets.
Alternative explanation	If the rural population in the rehabilitated dry valleys is intensively and promptly supported through comprehensive agricultural support (effective extension service, access to agro-input and service, agricultural credit, and professional support in developing value chains of their products), their income will significantly improve and further sustainable sources of income/jobs in the upstream and downstream agricultural value chain will be created.
Confirmed/partly confirmed/not confirmed	Partly confirmed.

The second impact hypothesis of SDR links the qualified agricultural (government) extension and improved policy and administrative frameworks with the strengthened resilience of pastoral and agro-pastoral populations. This is to contribute to the Agenda 2030 goals SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 13 (Build capacity to adapt to climate change) and SDG 15 (Protect and sustainably use terrestrial ecosystems and combat desertification).

As outlined above, the government extension services have major weaknesses in terms of providing effective extension services (Int 5, 37, 40 with consultant). Also, the complicated political and administrative framework and especially the lack of land policies, which are extremely determined by the current government, are core elements that cannot be solved quickly and thus only improve the capacities for long-term climate-adapted NRM, to a limited extent (Int 5, 6, 38 and 40 with project stakeholders). Therefore, this impact hypothesis is partially confirmed.

Table 22: Impact hypothesis 2 for SDR impact

Impact hypothesis 2 (activity – output – outcome)	Through advanced training for agricultural advisors and improved political and administrative framework conditions, the capacities for climate-adapted management of natural resources are sustainably improved. This increases the resilience of the pastoral and agro-pastoral population and contributes to SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 13 (Capacity building for adaptation to climate change) and SDG 15 (Protection and sustainable use of terrestrial ecosystems and combating desertification).
Main assumptions	The will to urgently improve the political and administrative framework conditions, including a smallholder/pastoralist-friendly land policy and sustainable agricultural support programmes.
Risks/unintended results	Preference for agro-industrial and agro-input intensive agriculture, lack of political will and financial support to encourage this innovative approach, and political unrest that makes the security situation unpredictable.
Alternative explanation	No alternative explanations were identified.
Confirmed/partly confirmed/not confirmed	Partly confirmed.

CDSDR mainly worked at the meso and macro level to sustainably anchor the innovative approach of NRM measures in the country strategy of the MoA, to train capacities and to build networks. The first impact hypothesis of CDSDR considers knowledge management and planning processes related to drought resilience and climate change adaptation for pastoral production systems by public institutions for sustainable land management and improved income of the agro-pastoral population.

The functionality of public institutions in terms of knowledge management and planning processes regarding drought resilience and climate change adaptation for pastoral production systems was only improved to a limited extent at the end of CDSDR I (Int 1, 2, 6 with project staff and partners; GIZ FB 2019). A dynamic emerged only with CDSDR II, also due to the increasingly visible successes of the WSW. But in particular, the growing demand from affected and inspired communities seems to have created this momentum (Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58 with project partners).

In the meantime, this ‘bottom-up’ development has led to a considerable expansion of the approach; districts have supported communities being responsible to build their own WSW cascade system and with their own financial resources. The need and demand by the rural communities are considerable (Int 26, 29, 52, 57, 58 with project partners). The district administrations cannot cope with this demand, neither in terms of personnel nor financially (Int 6, 7, 26, 52 with project partners). The need for timely agricultural management, as described above, lags much further behind. This gives invasive plants a competitive advantage that will be very detrimental to the communities (5, 23, 28, 37, 40, 59 with researchers and project stakeholders). But in principle, this hypothesis is confirmed.

Table 23: Impact hypothesis 1 for CDSDR impact

Impact hypothesis 1 (activity – output – outcome)	If knowledge management and planning processes regarding drought resilience and climate change adaptation for pastoral production systems are improved by public institutions (MoA) and its subordinate agencies, and funds are made available for increased implementation, more land will be cultivated sustainably and the income of the agro-pastoral population will increase.
Main assumptions	Competent planning capacities in public institutions, transparent prioritisation of applicant communities and fair selection, promotion of NRM especially for pastoralists and agro-pastoralists, and sufficient funds for a broad approach. Pastoralists get competent support in managing the rehabilitated land, also in terms of 'farming as a business'.
Risks/unintended results	Non-transparent selection, nepotism, overstretched pastoralists without agricultural extension and support, and no adequate Prosopis management strategy.
Alternative explanation	No alternative explanations were identified.
Confirmed/partly confirmed/not confirmed	Confirmed

The second impact hypothesis draws a line from professional government advice on innovative NRM, to improved food and nutrition security, strengthened livelihoods and thus contributes to the goals of the 2030 Agenda; in particular (SDG 1) No poverty; (SDG 2) Zero hunger; (SDG 13) Capacity building for climate change adaptation; and (SDG 15) Protection of terrestrial ecosystems/combating desertification.

The first steps towards developing a context-adapted approach that uses all available natural resources to improve degraded pastoral livelihood resources have been taken through the SDR project. Relevant policy and strategy proposals are slowly moving through government processes, but there is resilience within the system from forces that would prefer to see more funding for highland development. This competition over policy and funding priorities time and again proves to be a political obstacle, despite progress such as the Country Programming Paper (CPP) and other strategy papers that have been tabled from time to time. Moreover, there are still influences that would rather see agro-industry as the appropriate development strategy for the lowlands, although this would most likely be at the expense of the affected population. (Int 6, 25, 27, 41, 43, 59 with project partners, NGOs, experts and others). Neither project has provided enough monitoring data and ways to show the economic performance and impact that can be achieved by the DVR approach, nor with regard to migration, displacement and job opportunities and national food production.

Improving the capacity of the public and private institutions targeted by the project leads directly to an expanded replication of this innovation by the partners and the target group. This was partly financed by other German projects, other donors or national/regional budget funds. The demand for DVR is huge as already stated, but plans to scale up (out) the approach have yet to be decided and/or implemented. Donors and budget funds are available for the DVR approach and economic promotion of the pastoralists and agro-pastoralists (Int 41). The DVR approach has been officially adopted by the Afar region as the primary approach, which is a considerable success of the projects evaluated here (NPPM 2020, Int 6, 7, 18, 21, 26, 28 and 31 with project partners).

It is clear that public institutions have accepted and are enthusiastic about the outcomes of the intervention with respect to the improvements in processes for planning, monitoring and implementing NRM for drought resilience and adaptation to climate change even without the complete achievement of the outcomes as outlined in section 2.2. Organisational and institutional changes at the government level were partly responsible for these shortcomings. Public stakeholders as well as pastoralist representatives recognise that the project approach can, has, and will continue to a make positive change to the livelihoods of Afar and Somali communities and societies (Int 6–8, 10/2, 11/3, 14/5, 46/14 with project partners and communities).

‘If the project had not taken place’

Had the project not occurred, the country and the government would most probably still have no strategic and no practical approach to rehabilitating degraded lands, and no adequate way to deal with droughts, floods and failing livelihoods, other than emergency relief and resignation among the target groups. Regeneration and rehabilitation of the natural genetic potential would not have materialised. The rural exodus would certainly have increased further with all the undignified manifestations of poverty in the cities, which are overburdened anyway. At the technical level, partners would continue to implement inappropriate governmental approaches developed for the highlands. These approaches (mainly implemented by the Productive Safety Net relief programme) are very costly and only create some short-term food security but have no discernible results in improving the environment and ecosystem services (Int 5, 7, 8, 40 with project partners and experts).

Without this intervention, GIZ would not have gained an exemplary product that is scalable, applicable in many regions of Africa with similar conditions, which are likely to increase with climate change. The approach is very well suited to be promoted by larger donors, and thus to make a significant cross-regional contribution to strengthening the resilience of pastoralist societies while improving the environment (Int 5–8, 42, 59 with project partners and experts).

The hypothesis is confirmed.

Table 24: Impact hypothesis 2 for CDSDR Impact

Impact hypothesis 2 (outcome – impact)	If professional advice and innovative NRM by national and local authorities for pastoral and agro-pastoral populations increases food and nutrition security as well as their livelihoods, then this also contributes overall to the SDGs of the 2030 Agenda; in particular SDG 1 (No poverty); SDG 2 (Zero hunger); SDG 13 (Building capacity to adapt to climate change); and SDG 15 (Protect and sustainably use terrestrial ecosystems and combat desertification)
Main assumption	National and local authorities are more committed to the concerns of pastoralists and have a strong interest in ensuring that they have a dignified existence and that their livelihoods improve so that they do not migrate to the cities. National and local authorities are willing to work with other stakeholders to protect natural resources and their ecosystem services and to combat degradation and desertification
Risks	Change of government and political intensions, civil war, as well as catastrophic environmental disasters
Alternative explanation	No alternative explanations were identified
Confirmed/partly confirmed/not confirmed	Confirmed

The likelihood that a contribution can be made to the overarching development policy goals is high, because the phenomenon of degraded dry valleys and desertification is not a matter of small areas. In the Horn of Africa region approximately 1.8–2.2 million ha are affected, which could be rehabilitated and converted to sustainable agricultural production. It is obvious that this approach is not a niche product (see section 4.4 on Efficiency).

SDR	Impact dimension 2 – Contribution to higher-level (intended) development results/changes – scores **32 out of 40 points**
CDSDR	Impact dimension 2 – Contribution to higher-level (intended) development results/changes – scores **40 out of 40 points**

Photo 4: Community discussion on how to combat invasive plants (Source. H. Hempel).

Impact dimension 3: Contribution to higher-level (unintended) development results/changes

Unintended results

No unintended negative results on high-level development outcomes through SDR and CDSDR could be identified. Both projects have no discernible negative impact on the tense socio-political situation in either Afar or Somali. Risks that were known during the planning phase were seriously taken into account during implementation (GIZ FB 2019). CDSDR and SDR have worked very closely with local authorities to assess developments in a timely manner and draw appropriate consequences, such as temporarily suspending activities in places that were found to be corrupt and untrustworthy and deemed unacceptable (Int 6, 7, 29 with project partners). The risk of institutional weakness was explicitly addressed as a goal of the CDSDR project. Corruption, improper accounting and nepotism are recurring challenges. For SDR, this meant stopping direct implementation for a while. Both projects are very partner (public institution) oriented in their environment and thus naturally very vulnerable to this sort of corruption and project abuse. A broader and more even set-up, involving both the private sector and civil society organisations, promotes competition and opens up fall-back positions if necessary.

Deterioration of the health situation due to high incidence of malaria, displacement of entire communities due to malaria epidemics, increased erosion, landscape degradation through overwhelming invasive plants, could not be identified nor attributed to the SDR project at any site (Int 7, 8, 16, 18, 21, 22, 29, 52, 57, 58; FGD 10/2, 11/3, 14/5, 46/14; and insights through the transect walks).

In some dry valleys (e.g. Tabiadora), Prosopis and Parthenium have spread invasively as undesirable plants. Wherever soil moisture is improved by NRM measures, invasive plants have advantage over other species due to their ecological determination, suppressing valuable forage grasses and native tree species (Ilukor et al. 2016, Shiferaw et al. 2021). With this learning experience, the respective communities have organised themselves to control Prosopis by uprooting or burning (FGD 9/1, 11/3), but with moderate success. The ongoing droughts and emergency relief measures were also a reason for the communities to neglect Prosopis control during the project period, as their capacities were tied up in other matters (Int 1, 2, 7, 52, 58 with project staff and partners).

The invasive plant problem has been known in the Horn of Africa region and beyond for more than two decades (Ilukor et al. 2016). Yet this issue (problem) was not foreseen in the project matrix, and there was no tested strategy for it (GIZ 2013a, 2015a). Regarding financial cooperation to tackle this problem, MoA –

supported by the implementing consultant-company GITEC – were to test a strategy for Prosopis control, which owing to delays only became operational in March 2021 (Int 20, 25 with GITEC staff). The approach of using heavy equipment to control Prosopis needs to be evaluated. For KfW and GITEC, this measure appears promising under the local conditions in Afar, but there is no evidence to support this. The evaluation team has strong doubts about the use of heavy equipment, as experience from other countries shows. In addition, such machinery seems difficult to apply in smallholder structures with mountainous and rocky terrain. It is obvious that an advanced Prosopis invasion needs a management approach that cannot be handled by the (agro-) pastoralists alone (Int 5, 20, 25, 40, 42, 59 with project participants).

Nevertheless, recent studies (Shiferaw et al. 2021, Ilukor et al. 2016; Treydte et al. 2015) underline the above-average carbon sequestration capacity of Prosopis, as well as the above-average phosphorus supply of the soils under Prosopis. The basic idea of the DVR approach, as developed by SDR, is to combine economic, social, environmental and cultural dimensions in an integrated approach through technical innovations. The technical solutions enable social, environmental and economic gains for local residents as well as the public sector. The distribution and use of these gains is a matter of socio-cultural adaptation. The pastoral lifestyle is not only an economic system with a considerable contribution to the GDP and protein supply of an entire region (Robinson et al./ILRI 2021), but a cultural institution with strong rules, beliefs and value systems (e.g. among the Afar, biodiversity is highly valued and hunting of wild animals is absolutely frowned upon). The upcoming socio-cultural change will determine how the rural target population will develop. For this, DVR solutions are also crucial to enable marginalised groups to benefit in an equitable way. So far both projects focused mainly on the technical and organisational aspects, while socio-economic issues have not yet received the same level of attention (Int 6, 7, 8, 40, 42*).*

SDR has established a good and trusting basis for cooperation with the communities. This seems to be an advantageous situation for follow-up projects to encourage communities to make a stronger contribution, for example, by establishing protection zones (closures) for large-scale grass sowing. Communities are usually not easy to convince to carry out such measures, as they fear the (short-term) lack of fodder. With the successes of the existing WSW in mind, faster results are achievable here and ownership is additionally strengthened.

SDR	Impact dimension 3 – Contribution to higher-level (unintended) development results/changes – scores **25 out of 30 points**
CDSDR	Impact dimension 3 – Contribution to higher-level (unintended) development results/changes – scores **25 out of 30 points**

Methodology for assessing impact

Table 25: Methodology for assessing OECD/DAC criterion: impact

Impact: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Higher-level (intended) development changes/results	This dimension is assessed on the basis of the selected impact goals (like substantial changes in the ecological/economical system, SDGs, national policy goals, etc.)	**Evaluation design:** Contribution analysis **Empirical methods:** Surveying a broad spectrum of stakeholders to capture different perspectives on the hypotheses. Document analysis. Interviews with final beneficiaries Good photographic material was collected to document the recognisable results. This is complemented by statistics, available satellite images and observation of hydrological impacts. Drone images provide both convincing results regarding the positive change in vegetation in dry valleys and show the extent of the erosion problem due to the impressive size of gullies	• Good availability of data and collection of additional data • Data/method triangulation • Strong evidence
Contribution to higher-level (intended) development results/changes	This dimension is assessed on the basis of the impact hypotheses.	**Evaluation design:** This assessment dimension refers to the analysis of the contributions of project activities to outputs and outcomes achieved using contribution analysis as a minimum standard. **Empirical methods:** Document analysis, interviews, survey, focus group discussions, observation	• Good availability of data and collection of additional data • Data/method triangulation • Strong evidence
Contribution to higher-level (unintended) development results/changes	Here it is examined whether non-intended effects especially mentioned in Frontal 21 have occurred or are foreseeable at impact level, what potentials/risks arise from them and whether the project has put a value on positive non-intended effects or reacted adequately to negative non-intended effects.	**Evaluation design:** Contribution analysis **Empirical methods:** Document analysis (project reports external studies), interviews with team, partners and other stakeholders, focus group discussion with community members, transect walks.	• Good availability of data and collection of additional data • Data/method triangulation • Strong evidence

4.6 Efficiency

This section analyses and assesses the efficiency of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex 1). The basis for the evaluation of efficiency is the efficiency tool developed by GIZ.

Summarising assessment and rating of efficiency

Table 26: Rating of OECD/DAC criterion: efficiency

Criterion	Assessment dimension	Score and rating SDR	CDSDR
Efficiency	Production efficiency (Resources/outputs)	55 out of 70 points	55 out of 70 points
	Allocation efficiency (Resources/outcome)	20 out of 30 points	15 out of 30 points
Efficiency score and rating		Score: **75 out of 100 points** Rating: **Level 3: moderately successful**	Score: **70 out of 100 points** Rating: **Level 3: moderately successful**

The proper expenditure of project funds was confirmed by annual audit reports. The following table gives an overview of the project budgets; the total budget, project costs, co-financing and overarching costs (efficiency tool).

Table 27: Project budget overview

	SDR	CDSDR
Total project budget	€8,392,110.85	€5,921,013.63
BMZ costs	€3,937,404.06	€5,921,013.63
Total costs	€3,489,124.98	€5,256,922.98
Overarching costs	€448,279.08	€664,090.65
Co-financing	€4,454,706.79	€0.00
Partner contributions	€0.00	€0.00

The SDR project was topped up by co-financing from SDC. Further funding as a supportive measure in an emergency situation was added during the drought in 2016–2018 (GIZ 2016a progress report).

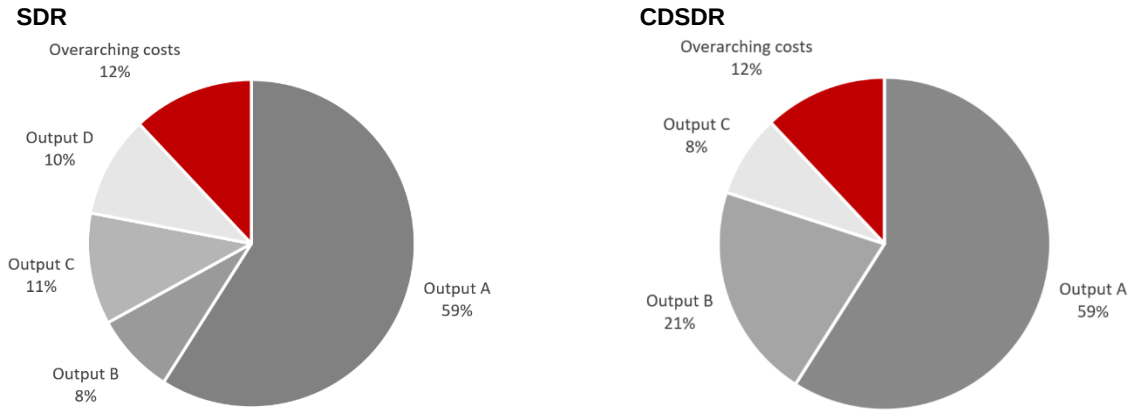
In total, the efficiency of the SDR project is rated Level 3: moderately successful, with 80 out of 100 points, the CDSDR project is rated Level 4: moderately unsuccessful, with 60 out of 100 points.

Analysis and assessment of efficiency

Efficiency dimension 1: Production efficiency

At the time of planning, as well as during the course of the project, GIZ's planning tool 'KOMPASS' did not exist. Neither project was planned according to the 'follow-the-money' approach. All costs were entered into the respective efficiency tool and subsequently attributed to outputs and overarching costs. Figure 9 below gives an overview of the allocation of the project budget to outputs and overarching costs.

Figure 9: Budget allocation according to outputs



All the following information is based on data from the efficiency tool. SDR used approximately 59% of the total budget for Output A ('Access to water, pasture and arable land and knowledge about sustainable use adapted to climate change is improved'). This included in particular the construction projects of WSW, which were funded in total by approx. EUR 1,017,344.

For Output B ('Land use agreements, local land use planning and regional development planning are coordinated'), approx. 8% of the total budget was spent. This seems low but appropriate, because on the one hand, it mainly involved advisory services and coordination services of the regional authorities, which are not very costly; on the other hand, since there is still no land policy in Ethiopia, this task was/is strongly dependent on political goodwill and interest, and requires time and patience (Int 5, 6, 40 with project partner and consultants).

For Output C ('The capacity of local public service providers to promote sustainable resource management [...] is increased'), a total of 11% of the total budget was spent. This is mainly based on capacity development of the partner, technical advice and management support, consulting for organisational development, and training 150 agricultural extension workers. The total costs appear reasonable.

For Output D ('The conditions for improving the policy framework [...] have been created'), a total of 10% of the total budget was spent. This included policy dialogues to share experiences and knowledge from the Afar and Somali regions at national level and, in cooperation with IGAD, at international level. In addition, the project partners were mentored to ensure that the livelihood concerns of (agro-)pastoralists were taken into account in policies, strategies and implementing regulations at the regional level. The total costs appear reasonable.

The overarching costs are stated at 12%. There was no evidence of non-essential overarching costs. According to a GIZ handout, overarching costs above 10% are to be classified as high (GIZ 2019n). However, compared to other evaluated projects by the authors, overarching costs in the range of 15–20% appear to be more the norm and thus not above average.

Due to planning shortcomings, the outputs were not chosen with sufficient clarity and priority (see section 4.2 on Relevance and Figure 5) and neither internal nor external project experience was considered when planning the projects (e.g. the GIZ project Watershed Management Mai Aini, Eritrea, Bender/GIZ et al. 2010). This is reflected here as a clear minus in the efficiency assessment, because if the planning had been based on this prior experience, and following a stringent implementation strategy, probably more WSW could have been built within the project period.

Whether the outputs could have been maximised with the same resource input and under the same framework conditions with the same or better quality cannot be proven; also due to the lack of comparative figures. SDR Outputs C and D, as well as the general objective of CDSDR ('Institutional actors apply improved management, [...] to drought resilience') were mainly aimed at government partners, and less at actors from the private sector and NGOs. Coordination processes with the partner, GIZ internal approval procedures delayed tender

processes and thus reduced production efficiency. Experience has shown that greater involvement of the private sector could have increased production efficiency (Int 1, 2, 6, 7, 36, 37, 40, 57 with project staff and partners). A redistribution of resources between outputs would not have maximised the overall outputs.

However, it is assumed that a clearer separation of outputs (see Figure 7) would have sharpened the implementation strategy and, for example, increased production efficiency (more WSW) through stronger cooperation with the private sector. To what extent remains speculative, due to a lack of comparative figures.

SDR	Efficiency dimension 1 – Production efficiency – scores **55 out of 70 points**

CDSDR used about 59% of the total budget for Output A ('Public institutions have improved processes for planning, monitoring and implementing NRM…').To this end, staff of federal institutions were trained in the use of improved management tools for annual planning and gender-specific monitoring of activities, as well as in supporting districts (10) in planning and monitoring drought resilience activities. Only 50% of this output was achieved (see section 4.4 on effectiveness). This shows an obvious imbalance between costs and output. According to statements, this is mainly because of the constant changing of federal institution (MoA) staff, and two reorganisation processes during the project period. No alternatives were apparently possible or developed (Int 1, 2, 6 with project staff and partners).

For Output B ('Knowledge management on drought resilience is improved at state and national level, including a web-based network'), about 21% of the total budget was used. Professional networks in the context of NRM were established and strengthened, an international conference (DREAM I Conference) was organised, and area- and gender-specific documents ('good practice' examples, manuals, strategies and guidelines on NRM, drought resilience and climate change adaptation) were developed. The total expenditure appears reasonable.

About 8% of the total budget was spent on Output C ('Improved capacities of professional institutions for training and further education in the field of pastoral and agro-pastoral production systems'). For this, professional profiles were developed, training and development institutions were supported and events were held for BoPAD, BoANRD and BoLPD extension workers and other relevant actors for capacity development. The total expenditure appears reasonable.

The overarching costs for CDSDR are also reported at 12%. There is no evidence of non-essential overarching costs. As previously stated, a GIZ handout considers overarching costs above 10% as high (GIZ, 2019n). However, compared to other evaluated projects, overarching costs in the range of 15–20% appear to be more the norm and thus not above average.

It is also applicable to CDSDR that a clearer separation of outputs (see Figure 7) and fields of action would have sharpened the implementation strategy and thus increased production efficiency (e.g. more trained skilled workers/technicians for construction and agriculture, both in the private sector and among NGOs).

CDSDR	Efficiency dimension 1 – Production efficiency – scores **55 out of 70 points**

Efficiency dimension 2: Allocation efficiency

In the following, it is analysed to what extent the projects' outcomes could have been maximised with the same use of resources, to the same or better quality. Allocation efficiency is to be assessed here according to the extent to which the investment has paid off.

According to the project logic, the project outputs should contribute to the project outcome (represented with indicators). The outcome of SDR (measured with the module indicators) was achieved with just under 80%, which is a sufficient result. The outputs were achieved at an average of approx. 85%.

CDSDR outputs were achieved at an average of about 80%. The outcome of CDSDR was achieved at 50%, which is not a sufficient result (see section 4.4 on Effectiveness). This is explained by design and revision shortcomings of the project matrix.

Some studies (Amede et al. 2020; Calow et al. 2019; ICRISAT 2017, 2019, 2020; Tilahun et al. 2015) have carried out different cost-benefit calculations. The productivity and the landscape changed from a degraded area to a productive landscape within three years of the intervention. The flooding patterns and sediment loads created at least four different agro-ecological zones and productivity levels (Amede et al. 2020). Based on the moisture and nutrient regimes, the result was a rapid recovery of the landscapes with a 150% increase in biomass yields and improved access to forage and food in the dry season in year 2 after the construction of the WSW. These positive results could be attributed to the WSW approach (Amede et al. 2020).

With regard to economic growth, there is still too little specific data, but from parallel studies and data from other comparable areas, it can be said that investment in sustainable land management (SLM) technologies across the country's 12.8 million ha agricultural land would enable Ethiopia's economy and its agricultural sector to grow by 38% of the country's 2016 real GDP, and by 110% of 2016 real agricultural GDP over the period 2020–30 (Tilahun 2020). By investing in SLM technologies,

> Ethiopia could create a maximum of 5.96 million rural jobs at an annual wage of USD 468 per person per year and at least 3.92 million rural jobs at an annual wage of USD 713 per person per year over a five-year period (2020–2024) during the establishment phase of SLM technologies. In addition, the retention of SLM technologies could create a maximum of 11.79 million rural jobs for the period 2021–2040.
>
> (Tilahun et al. 2020)

The evaluation of the construction investments showed that a net benefit[6] of 1:1.20 to 2.80 is possible, provided that agricultural production is implemented promptly and professionally (Calow et al. 2019).

The net benefit can be confirmed by data collection and a rough calculation during the field visits to the community of Awra in Afar (see photo 4) and the village of Bolidid, Shabeley district in Somali (FGD 17/7, 34/11 with communities). Conservative calculations showed that investment[7] in WSW would pay for itself after a maximum of two years through the harvesting of maize (2.5–5.5 t/ha), sorghum (1.2–2.5T/ha) and mung bean (0.8–1.9t/ha) alone, as well as biomass (maize 7–13 t/ha) for livestock feed; provided that the WSW structures were properly (robustly) constructed and accordingly no repair and maintenance costs were incurred, and the rehabilitated areas are professionally and immediately cultivated. The average growth factor for the cultivated area is 2.9 in a before/after analysis and the yield increase is on average 2–3.5 times.

Other studies have calculated that approx. 5 ha of flood-based farming provides an income for a family of about seven members, and approx. 4 ha provide a full-time job for one farmer (Kowsar et al.,2005). Well-developed agriculture can secure additional jobs in the upstream and downstream value chain (agro-input dealer, mechanisation, processing, transport and sales).

The Horn of Africa covers about 2 million km^2 (Djibouti, Eritrea, Ethiopia, Somalia and Somaliland). Arid and semi-arid areas (mostly lowlands) make up about 70% of this land area. That is about 1.4 million km^2. And areas from Sudan, South Sudan and Kenya are not included in that figure. The work in Afar indicates that about 1.3–1.6% of the land area is likely to be flooded, an estimated 900,000 ha are affected and suitable for rehabilitation by WSW (ARSP 2021, Int 62). Extrapolating this value to the entire Horn of Africa would result in a potential area of between 1.8–2.2 million ha. Even if these can be only rough calculations, it still shows the great potential in the region in terms of job creation, which already starts with the construction of the weirs (construction companies), as well as food crop production (Thomas 2021). For Afar, a very conservative calculation of an average maize yield of 2 t/ha would put potential food production at 1.8 million tonnes of

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[6] Calculating the net benefit is a three-step process. Step 1 involves calculating the costs and benefits (crop revenues) of growing food crops on the potential land before the cascade is built to represent the counterfactual or baseline situation. Step 2 involves calculating the costs and crop revenues associated with growing crops in year 2 after the construction of the cascade. Step 3 consists of estimating the net benefit (total crop revenue) generated by the construction of the weirs, minus the costs of the cascade system.

[7] The basis for the calculation is a rough estimate. First, the total area gained in ha after the construction of the cascade system was estimated. In Awra, for example, 8 WSW were built as a cascade system. Each weir allowed an area of 10–30 ha to be cultivated. Farmers were then asked about their harvest volumes per ha last season and what income they had received per 100 kg bag. The harvest quantities and prices for maize and mung bean varied. The construction costs for the cascade system were deducted from the conservatively calculated total revenue.
Depending on the dry valley and its geological characteristics, a cascade system consists of 8–12 weirs and thus enables flood-based agriculture on about 100–300 ha. More precise figures are not yet available.

maize. The demand on WSW by the pastoralists and agro-pastoralists in the woredas was noticeably high (Int 7, 8, 16, 18, 22, 29, 52, 57 with project partners).

As has been pointed out here, effort, return, impact and cost are in an appropriate ratio, and make a decisive difference (see sections 4.4 and 4.5 on Effectiveness and Impact). By using adaptive management, sustained support to test and refine feasible strategies (e.g. WSW-based landscape management) to understand complex systems and use management options with different agronomic and management tools, there is a great opportunity to improve the livelihoods of pastoralists in East Africa (Amede et al. 2019, Int 5, 6, 40, 42, 59 with experts).

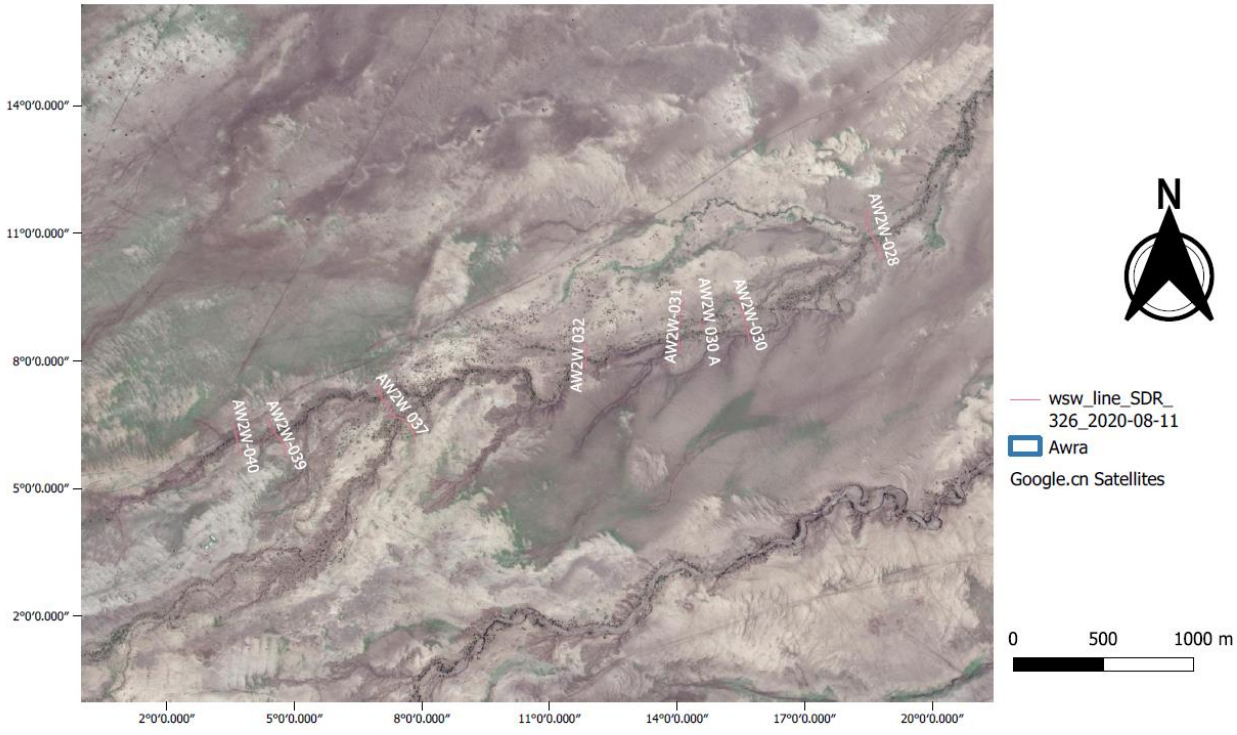
The results from the studies cited above refer to a few communities that were selected representatively, but not all communities had the support and access to commodities such as seeds and seedlings. There are some project sites with high productivity, but the majority still practice rather subsistence agriculture. Here, too, a strategically better choice of fields of action (outputs) for SDR, with an efficient implementation strategy, for example, with strong support (as a separate output) for agricultural production (involvement of agro-input and service providers) could have increased allocation efficiency (more increased income for the agro-pastoralists).

It would probably also have been possible for CDSDR to attract and empower additional partners (from the private sector and civil society) with a sophisticated selection of action areas (outputs) and a flexible implementation strategy. With such competition among the different actors (public, private and civil), the allocation efficiency could probably have been increased (e.g. more technical experts and construction companies would be available to meet the high demand for WSW, more agro-input and service providers could provide agricultural support).

The outcome indicators are only half achieved, also due to a one-sided partner alignment. The project could have achieved more in terms of allocation efficiency. Scale-up options were always under discussion, but overall assessed as too early until 2019 (Int 1, 2, 41 with project staff and donors). With the strategy outlined above, the upscaling approach/process could have already been developed.

SDR	Efficiency dimension 2 – Allocation efficiency – **scores 20 out of 30 points**
CDSDR	Efficiency dimension 2 – Allocation efficiency – **scores 15 out of 30 points**

Photo 5: The cascade system in Awra (Source: SDR project).



Methodology for assessing efficiency

Table 28: Methodology for assessing OECD/DAC criterion: efficiency

Efficiency: assessment dimensions	Basis for Assessment	Evaluation design and empirical methods	Data quality and limitations
Production efficiency (resources/outputs)	The analysis of this assessment dimension is based on the efficiency tool in which costs are retrospectively assigned to outputs	**Evaluation design:** The analysis of the data using the efficiency tool follows the analytical questions in the evaluation matrix, which are based on the 'follow-the-money' approach (level 1 method). **Empirical methods:** Efficiency tool, interviews with the project team and document analysis. The results of the efficiency tool are discussed with the responsible officer.	• The evidence is moderate, as the cost-output allocation is based on estimates by the project team. A precise allocation of personnel costs to outputs was not always clearly possible. • It is debatable whether to use comparative figures to assess the extent to which the project achieved its outputs in a cost-effective manner.
Allocation efficiency (resources/outcome)	The analysis is based on (i) the economical use of resources to achieve the outcome and the maximisation of the outcome based on the consideration of possible alternatives; (ii) the possible and actual outcomes from studies and field observations based on simple cost recovery contribution calculations and before-and-after evaluations; (iii) reflection on alternative scenarios	**Evaluation design:** The analysis of efficiency dimension 2 follows the evaluation questions and is only partly based on cost data. In addition, it reflects current field data collected on-site on crop yields, last year's crop revenues, construction costs, needs assessments and economic development and job creation studies. **Empirical methods:** Cost-based data from the efficiency tool to assess the outcome-resource ratio, interviews to explore the extent of cooperation and synergies as a means to maximise results. Information from the interviews is triangulated with progress reports. Extrapolation of comparable figures and results, converted into euro or surplus.	• It is debatable whether to use comparative figures to assess the extent to which the projects achieved their outcome in a cost-effective manner. • It is difficult to assess the extent to which the projects have achieved their outcomes in a cost-effective manner using comparative figures.

4.7 Sustainability

This section analyses and assesses the sustainability of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex 1a/1b).

Summarising assessment and rating of sustainability

Table 29: Rating of OECD/DAC criterion: sustainability

Criterion	Assessment dimension	Score and rating	
		SDR	CDSDR
Sustainability	Capacities of the beneficiaries and stakeholders	15 out of 20 points	15 out of 20 points
	Contribution to supporting sustainable capacities	25 out of 30 points	25 out of 30 points
	Durability of results over time	45 out of 50 points	4 out of 50 points
Sustainability score and rating		Score: **85 out of 100 points** Rating: **Level 2: successful**	Score: **80 out of 100 points** Rating: **Level 3: moderately successful**

The overarching challenges to project sustainability are in the areas of governance, policy and maintenance issues. Governance and policy challenges include: (i) improving consultation and participation mechanisms for pastoralists and agro-pastoralists based on traditional customs; (ii) dealing with conflicting interests and claims to improved land; and (iii) strengthening relationships and understanding between communities and government agencies so that decisions do not undermine livelihoods, traditional customs and rights, and human well-being. Both projects had a strong focus on training national partners of public institutions, as well as vocational schools. CDSDR in particular had taken on an arduous task, which was Sisyphus in nature, especially due to the high turnover of staff and two reorganisational processes of the respective authorities.

In terms of maintenance, in addition to ensuring adequate and continuous training of stonemasons, training of contractors, NGO workers and government agencies would have been important. Fundamentally, the development of financing mechanisms is important, starting with communities in addition to government grants, possible insurance schemes, and access to and use of foreign aid. Neither project has contributed to this.

There are concerns about participatory mechanisms and relationships among communities, NGOs and government agencies in relation to good governance and the lack of funding mechanisms to ensure interventions are sustained. Key to this dimension is the capacity of communities to build and maintain the WSW and other structures. Currently, there are not enough financial resources to ensure this sustainability (Int six to eight with project partners).

At the household level, there is still a lack of access to markets, basic business skills, and ways to rehabilitate the surrounding rangelands, including a viable approach to Prosopis management. Arrangements for herd mobility as well as herd management (adjusting herd size to forage supply), resource sharing, both within and outside the immediate communities, and conflict resolution circles are all insufficiently developed.

SDR	In total, the sustainability of the project is rated **Level 2: successful, with 85 out of 100 points**
CDSDR	In total, the sustainability of the project is rated **Level 2: successful, with 85 out of 100 points**

Analysis and assessment of sustainability

Sustainability dimension 1: Capacities of the beneficiaries and stakeholders

Results are anchored in partner structures

Afar regional state has officially adopted the DVR approach as a proven successful and preferred methodology to be used by all stakeholders. Somali region has decided to use funds from two to three different projects to introduce the DVR approach in more woredas with degraded natural resources. In Afar and Somali, internal guidelines and regulations have been drafted, partly based on the experience of the projects. At the national level, the approach was incorporated into two policy papers (NPPM 2020; Int 6, 26, 28, 31 with project partners).

The knowledge and skills acquired are continuously applied by local public administration staff. However, the high turnover of staff and their low numbers, especially at kebele level, is a problem for the communities which slows down the overall operationalisation (Int 7, 8, 16, 18, 21, 22, 29, 30 with project partners).

Staff turnover has been and remains to be a constant challenge in the government departments of the project partners. The project has continuously provided training for the staff of the partnering departments, but there was and is no functioning internal training programme within the partner organisations (Int 6, 7, 31 with project partners). This limits their ability to maintain the acquired knowledge at a sufficient level without external assistance. This situation (experience) is almost similar in public institution capacity building programmes, as the consultants' evaluation experience shows (Int 5, 40, 42, 59). Basically, the question must be asked why public authorities should have this technical knowledge – when it is more sustainable to generate and anchor this technical expertise within the private sector – while the public authorities are taking over the regulation and monitoring. Of course, having the technical expertise is, to some extent, also necessary for monitoring and building approval (Int 40)

National government funds are available for the implementation of relevant NRM measures. These come from the government's own revenues and from donor funds such as the Lowlands Livelihood Resilience programme (funded by WB in cooperation with IFAD), which flow through the usual budget channels. WB funding for the Productive Safety Net Programme and the Drought Resilient and Sustainable Livelihoods Programme will also be used for government upscaling in Somali and Afar regions (Int 6, 7, 31 with project partner).

Counselling content and concepts institutionalised

Capacity development was the main objective of the CDSDR project with the aim of improving professional standards for construction and maintenance for WSW and the DVR approach, as well as institutional capacity development, which was an important aspect of sustainability (GIZ 2015a). However, these innovative approaches also require fundamental training for the construction companies involved. Occupational standards for 16 occupational areas have been updated with the corresponding contents, which form the basis for the courses offered by ATVETs. Exchange visits and training were conducted for relevant staff at regional and local level, as well as training for bricklayers. The ATVETs have adapted their curriculum to these changes (Int 5, 23, 28, 45 with training institutions). This strengthened the entire value chain from design to completion (planning of the measure with consultancy and the population, promotion by advisors at kebele and woreda levels, and implementation by private contractors). SDR's contribution at national level after the establishment of the CDSDR project was withdrawn, as CDSDR I took on this mandate.

The awareness-raising efforts within the government and supporting agencies has been extremely successful as indicated by survey and interviews (Int 6, 7, 13, 16, 18, 22, 23, 26, 30, 31 with project partners and universities). At least two experts with regional responsibilities proposed that the interventions should extend beyond Ethiopia to other countries with similar lowland conditions (Int 5, 40).

There was great enthusiasm for the measures from the main direct target group, the government authorities and the indirect target group (final beneficiaries), the local population. More areas for WSW measures were selected and the construction of WSW started. In Afar, the DVR approach has been replicated by the state

(BoLAND) in 12 woredas (some with very large schemes) and in Somali in 49 woredas; all financed with district funds. In addition, eight WSW constructions are planned for this year alone under the WB-supported Lowlands Livelihood Resilience programme. The regional government's implementation area mainly reaches pastoralist communities. This represents significant progress for Afar and Somali region.

Continued training of bricklayers, for example, ensured that capacity was increased at the individual and organisational level; however, future funding for continued support of vocational training remains uncertain. Although government agencies have responded positively to project outcomes and investments have been made with their own (district development) funds, they fall far short of needs (Int 6, 7, 31 with project partners). The fruits of the capacity development approach of both projects really developed under CDSDR II. It would have been even more sustainable with the involvement of both the private sector (for reasons described above – see section 4.4 and 4.6 on Effectiveness and Efficiency) and national civil society (NGOs).

SDR	Sustainability dimension 1 – Capacities of the beneficiaries and stakeholders – scores **15 out of 20 points**
CDSDR	Sustainability dimension 1 – Capacities of the beneficiaries and stakeholders – scores **15 out of 20 points**

Sustainability dimension 2: Contribution to supporting sustainable capacities

Resources and capacities to continue the results achieved

In order to sustain the results achieved, the capacity of the communities (administration as well as villages) to build and maintain the WSW and other structures is crucial. The need for dry valley rehabilitation is great and financial resources would be possible, for example via KfW, to ensure sustainability. As mentioned above, additional funds are available from government resources and there is scope for additional funding from other agencies with large programmes and projects such as the WB and IFAD. With further awareness-raising and the development of a 'coalition of the willing' prospects for increased funding are good. Channels like the DREAM conferences are opportunities for fund raising.

Further training is needed under CDSDR III. Experiences from the SDR and CDSDR I can be incorporated into new and/or additional activities such as house construction, water user associations, women's groups, and market development, for the purpose of general individual, as well as for further community development.

Comprehensive cultivation extension and marketing were not part of the projects. But agricultural production without better marketing and trade options, etc. will never overcome subsistence status and will always have fragile resilience (Int 5, 13, 21, 28, 30, 40 with project partner and experts). Markets for products need to be developed with fair conditions for the smallholders and pastoralists. This includes, among others, the production and sale of native high-quality forage grass seeds for use in rangeland rehabilitation.

By directly involving the local population in the process and decision-making, strong tangible support was gained from the target population (Int 5, 8, 27, 31, 43, 42 with project partner, NGOs and experts; FGD 9/1 12/4, 15/6, 17/7 and 19/8 with community members). However, this approach needs to be further developed (in theory and practice) as the NRM infrastructure is part of a long-term monitoring and learning process. The WSW can only be maintained and further developed if the local populations generate sufficient resources from their use and are sufficiently organised to manage themselves with external expert supervision and guidance (with additional woreda funds for possible major upgrading measures and/or repairs, if necessary). Neither GIZ nor local authorities can ensure this form of supervision; local NGOs are predestined to do so and must also be trained to this effect.

Exit strategy

The CDSDR I project is followed by a short second phase (CDSDR II) until 2021. The third phase is in preparation and is planned to start by 2025. Experiences and findings are well documented, publications such as guidelines are available to the wider public. The approach and more detailed technical papers are regularly presented at national conferences. The project organised the first technical Conference on Development of Resilience Empowering Alternative Measures for Ethiopian Lowlands (DREAM I) in September 2019, where

the DVR approach was analysed with stakeholders and knowledge from other successful drought resilience approaches was taken up. This forum is well suited to disseminate knowledge and raise awareness and interest in the approach and create the necessary momentum to overcome remaining reservations at the national level. It serves the overall development of the lowlands through climate-sensitive and context-appropriate NRM interventions that are very different from simple agro-industrial transplants from the highlands (Int 5, 6, 23, 27, 28, 30, 31, 40, 42, 59 with project partners, experts and universities). Linking to SLM multi-stakeholder programme, development initiatives and processes will ensure adoption and wider application of the proven technologies and approaches.

For Somali, the exit strategy for CDSDR is linked to the SDC strategy for the Horn of Africa. The approach requires some adjustments to adequately take into account the different land tenure situation, as well as the fact that the consistently agro-pastoral target group in the project area is now largely sedentary.

There is tremendous interest from communities, government agencies, academics and researchers in taking the action to a level beyond the scope of projects (Int 5, 6, 7, 13, 23, 27, 31, 42, 55 with project partner, universities and NGOs). In view of the great need and demand, it is very likely that construction companies (private sector) will also be interested in joining in. However, a comprehensive strategy for this has not yet been developed, but it should be a top priority. Socio-cultural aspects must be further taken into account. Local (traditional) governance systems are not yet sufficiently strengthened. Private sector actors and NGOs have also been insufficiently involved.

Strengthening of deescalating factors

Maintaining good relations with a constantly changing governmental environment adapting to negative circumstances within the country from civil unrest and the Covid-19 pandemic has been a prominent feature of the project management. Difficulties over the delays in contracting could have jeopardised the initial progress made and dampened enthusiasm for the interventions and training. However, the constant dialogue with partners has largely helped to overcome these risks. The development of stronger local community organisations that build on traditional institutions such as the 'Medaa Aba'[8] in Afar that establish and oversee management of the improved areas will hopefully in the future help to avoid and mediate disputes among pastoralists and agro-pastoralists. A balanced mix of conflict management through traditional and formal institutions is a predictable scenario that needs to be further developed in dealing with conflict (ATPS 2013; Int 6, 7, 31, 27, and 55 with project partners and NGOs). Although the region is prone to conflict, the management has practised a level-headed approach to potential dividers. This was confirmed by several parties (Int 7, 16, 18, 31 with project partner).

SDR	Sustainability dimension 2 – Contribution to supporting sustainable capacities – scores **25 out of 30 points**
CDSDR	Sustainability dimension 2 – Contribution to supporting sustainable capacities – scores **25 out of 30 points**

Sustainability dimension 3: Durability of results over time

Ownership and durability of project results

The following statements apply to both projects, as project partners and rural/pastoral communities did not distinguish between the projects.

After some initial scepticism and reservations against SDR, local communities have undertaken the management of the WSW and have established user committees to oversee regulations and bylaws, which they have developed themselves. Local community leaders (Kedoh Abbobati) are enforcing customary rules and bylaws as well as debating and suggesting choices of interventions and approaches to establish them.

[8] The traditional institution of 'Medaa Aba' is a social system in Afar that regulates the proper management and fair use of natural resources. It is a hierarchical structure that begins with the clan leaders at the top level and extends to the head of household (ATPS 2013).

‘Medaa Aba’, a lower-level organisation helps control the management and fair use of natural resources (Amede et al. 2020). These organisational structures and their adaptation to the new conditions of improved land and water resources reflect the ownership by local communities that should ensure durability of the project outcomes provided further financial support is forthcoming. Additional support from government offices of the Pastoral and Agro-pastoral Development offices (PADO) in Afar also ensures durability (Int 7, 10/2, 11/3, 14/5, 16/, 18, 29, 31 with project partners and communities).

The commitment of resources from regional and federal government agencies has already ensured replication of installation of interventions in other areas (Int 7, 31 with project partners). With greater attention to lowland areas in government implementation plans such as the ‘Strategic Investment Framework for Sustainable Land Management’, the central government’s earlier tendency to ignore the lowlands of Afar and Somali has been modified and is now written into national policy. However, it remains a political risk because it is always dependent on the ruling party and its interests (Int 5, 6, 7, 30, 31 and 40, 59 with project partners and experts).

With the framework conditions described, long-term sustainability of the results seems very likely. Not only because the population has accepted the innovation well, ownership is tangible and the maintenance has so far posed few problems, benefits are clear to all, but especially because the potential in terms of agricultural productivity and job generation (with appropriate support), gives this approach a strong momentum. Of course, the institutional results are only sustainable as long as the leadership maintains staffing levels and continues to support the approach. The continued training of predominantly MoA staff does not seem very meaningful, for reasons already explained above.

Political risks are difficult to assess at this stage. Ethiopia is in a transitional phase and the pendulum could swing back to a more authoritarian regime with greater divisions between ethnic groups and regions, as well as unilateral independence aspirations.

Survey data collected during the evaluation indicates that there do not appear to be any major problems with potential land use conflicts. Local traditional means of conflict resolution seem to work (Int 7, 8 16, 18, 21, 22, 29 with project partners; FGD 10/2, 11/3, 14/5, 46/14 with communities).

As described at the outset, there is a strong religious and cultural justification for participatory water resource planning, including the establishment of local committees representing all stakeholders. These aspects were not explicitly considered in the planning of WSWs and other protection measures, capacity development and the project’s role in empowering communities to manage water, but this does not discernibly limit sustainability.

The involvement of clan-based traditional authorities in Afar and Somali was supported. This is still practised at the local level. But at the higher levels, however, these power structures extend into the formal political process and are quite unpredictable. Further efforts to engage the higher-level clan structures are necessary and were envisaged under CDSDR II. It is necessary that the next phase ensures all sides are informed about the benefits of the DVR approach and in particular that its economic potential is proven and demonstrated. Scaling-up for wider socio-economic and environmental impact will, however, not be without major challenges, looking particularly into the resources and knowledge and skill requirements that the interventions demand.

SDR	Sustainability dimension 3 – Durability of results over time – scores **45 out of 50 points**
CDSDR	Sustainability dimension 3 – Durability of results over time – scores **40 out of 50 points**

Photo 6: Greening effects through water-spreading weirs (Source/copyright: CDSDR project).

Methodology for assessing sustainability

Table 30: Methodology for assessing OECD/DAC criterion: sustainability

Sustainability: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Capacities of the beneficiaries and stakeholders	Basis for assessing capacities to sustain impacts over the long term, knowledge generation and sharing, frameworks developed, implementation plans, availability of long-term stable funding. Basis for assessing resilience to future risks, changes in government, environmental disasters, or conflict.	**Evaluation design:** Analyses of project documents and explorative questions. **Empirical methods:** Analysed and evaluated through interviews and documentation the partners' plans and strategies for upscaling.	• Availability of data is adequate • Possibility of data/method triangulation is good • Evidence is strong
Contribution to supporting sustainable capacities	The partners' and the target group's own efforts are evaluated, as well as the extent to which the project's achievements have been internalised and anchored, and the extent to which replication effects and autonomy have been achieved, e.g. by continuing the project with one's own financial resources.	**Evaluation design:** Analyses of explorative interviews, planning documents and transect walks, triangulation. **Empirical methods:** Interviews and study of documents regarding perspectives on sustainability and future needs, including potential investors; at government and community level.	• Availability of data is adequate • Possibility of data/method triangulation is good • Evidence is strong

Durability of results over time	The assessment is predictive and looked at forecasting the durability of future developments within the target regions based on how, innovations introduced by the project were adopted, developed, maintained, used and valued by the target groups. Reviewing the plausibility of implicitly or explicitly existing as well as potential exit and transfer strategies.	**Evaluation design:** Explorative interviews with all stakeholders, especially those who are responsible of maintenance and upscaling **Empirical methods:** Interviews and study of documents regarding perspectives on sustainability and future needs.	• Availability of data is adequate • Possibility of data/ method triangulation is good • Evidence is strong

4.8 Key results and overall rating

The SDR project aimed at 'improving the livelihoods of the affected population in the Afar and Somali region and increasing their resilience'. To this end, NRM approaches were tested in dry valleys, taking into account the watershed. With innovative measures such as the WSW, which are well adapted to the geographical and climatic conditions of the Eastern Lowlands (Afar and Somali states), the threatening desertification in the dry valleys could be stopped. Areas for sustainable agriculture, including intensive cultivation, have been created.

SDR gave rise to CDSDR, the core project of the GIZ programme for 'Strengthening Drought Resilience of the Agro-pastoral Population in the Ethiopian Lowlands'. On behalf of German Development Cooperation, the project combines competence development, knowledge management and support for partner networks as contributing to the implementation of the Ethiopian country strategy, the 'Ethiopia Country Programming Paper'.

SDR started in 2013, CDSDR in 2015. The **relevance** of both projects is rated highly successful. Both projects were excellently aligned with the country's policy and priorities and the needs and capacities of beneficiaries and stakeholders. The design of SDR and CDSDR suffered somewhat from insufficient focus on outputs. The adaptability of both projects to context and change was supported by adaptive management, but was limited by the project design.

In terms of **coherence**, both projects were very much focused on the national and regional partner. Other stakeholders from the private sector and civil society were not taken into account as much as they should have been. Therefore, coherence is rated as moderately successful.

SDR has performed successfully in achieving the (intended) objectives. The contribution to the achievement of the objectives was limited by the project design. The quality of implementation was ensured through adaptive management. Unintended results (especially the growth of invasive plants) could only be addressed to a limited extent, partly because this problem was to be dealt with in another project. SDR's overall effectiveness is rated as successful.

The **effectiveness** of the CDSDR was particularly affected by the change of government during the project period, two reorganisation processes at the partner level and a high staff turnover in the Ministry of Agriculture. The effectiveness of CDSDR can therefore only be rated as moderately successful.

The **impact** of both projects is rated successful because both projects have made a successful contribution to the overarching (intended) development outcomes. SDR, through the WSW, has introduced a very effective innovation that has made a strong contribution to improving the resilience and income options of pastoralists and agro-pastoralists, as well as the regeneration of degenerated dry valley sites. CDSDR has made a strong

contribution, especially through the DREAM Conference, by prominently representing the concerns of pastoralists in the lowlands. This created a network that received international attention. No contributions to overarching unintended development outcomes were identified.

The **efficiency** of SDR is rated as moderately successful. Coordination processes and approval procedures reduced production efficiency. A more specific design of the action fields (e.g. with strong support for agricultural production and an efficient implementation strategy) could have increased production efficiency and allocation efficiency. The efficiency of CDSDR can only be rated as moderately unsuccessful, as two of the four module indicators failed to achieve (zero percent), for reasons described above, among others. The design of the action areas and the fact that the project matrix was not revised early on weakened production efficiency. With a more differentiated selection of action areas (outputs) and project partners (target groups, e.g. from the private sector and civil society), allocation efficiency could probably have been increased. An upscaling approach/process strategy could have already been developed.

The **sustainability** of the two projects is assessed as successful. The capacity development approach of both projects was effective, but became really visible, especially in CDSDR II. With the involvement of the private sector as well as national civil society (NGOs), it would have gained a broader foundation.

There was a consistent dialogue with partners. Ownership by local communities was promoted through a balanced mix of risk and conflict management, with the inclusion of traditional organisational structures. This ensured the durability of the project results. Additional support from government agencies also ensures durability and has already enabled replication of the interventions in other areas.

From today's point of view, enough material and experience are available to prepare this approach for widespread upscaling. This approach can be divided into modules (outputs, action fields) and designed in digital form, where indicators are standardised and linked to the M&E system, including stakeholders' task distribution and comprehensive operational plan.

Photo 7: The banner logo for the DREAM Conference 2019 (Source and Copyright: CDSDR project).

Table 31: Overall rating of OECD/DAC criteria and assessment dimensions

Evaluation criteria	Dimension	Max	Score SDR	Score CDSDR	Total (max.100)	Rating
Relevance	Alignment with policies and priorities	30	30	30	SDR 92 CDSDR 92	Level 1: highly successful
	Alignment with the needs and capacities of the beneficiaries and stakeholders	30	28	30		
	Appropriateness of the design*	20	17	15		
	Adaptability – response to change	20	17	17		
Coherence	Internal coherence	50	40	42	SDR 80 CDSDR 82	Level 3: moderately successful
	External coherence	50	40	40		Level 2: successful
Effectiveness	Achievement of the (intended) objectives	30	25	15	SDR 83 CDSDR 68	Level 2: successful
	Contribution to achievement of objectives	30	25	20		
	Quality of implementation	20	18	18		Level 3: moderately successful
	Unintended results	20	15	15		
Impact	Higher-level (intended) development changes/results	30	25	25	SDR 82 CDSDR 90	Level 2: successful
	Contribution to higher-level (intended) development results/changes	40	32	40		Level 2: successful
	Contribution to higher-level (unintended) development results/changes	30	25	25		
Efficiency	Production efficiency	70	55	55	SDR 75	Level 3: moderately successful
	Allocation efficiency	30	20	15	CDSDR 70	Level 3: moderately successful
Sustainability	Capacities of the beneficiaries and stakeholders	20	15	15	SDR 85 CDSDR 80	Level 2: successful Level 3: moderately successful
	Contribution to supporting sustainable capacities	30	25	25		
	Durability of results over time	50	45	40		
Mean score and overall rating		100	**83**	**80**	**Level 2: successful * Level 3: moderately successful ***	

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Table 32: Rating and score scales

100-point scale (score)	6-level scale (rating)
92–100	Level 1: highly successful
81–91	Level 2: successful
67–80	Level 3: moderately successful
50–66	Level 4: moderately unsuccessful
30–49	Level 5: unsuccessful
0–29	Level 6: highly unsuccessful
Overall rating: The criteria of effectiveness, impact and sustainability are knock-out criteria: If one of the criteria is rated at level 4 or lower, the overall rating cannot go beyond level 4 although the mean score may be higher.	

5 Conclusions and recommendations

5.1 Key findings and factors of success/failure

Findings regarding Agenda 2030

The core element of these two evaluated projects is the rehabilitation and development of severely degraded dry valleys with an engineering approach in the Ethiopian lowlands of Afar and Somali, the construction of water-spreading weirs (WSW), and other water harvesting and conservation measures. Water is the all-determining component for strengthening drought resilience for people and nature (ecosystem services). One can attest to the projects' considerable success, tremendous socio-ecological and socio-economical relevance to the entire region, and remarkable results at the outcome and impact levels. In conclusion, the idea behind the projects is sound and promising in terms of effective reversal of degradation, water management and use, increasing plant production, and offering a more nutritious range of food for pastoral and agro-pastoral communities through crop diversification compared with a traditional milk-based diet of pastoralists. Through adaptive project management, high levels of expertise and perseverance, both projects have made their contribution to overall development goals.

A broad-based upscaling approach to rehabilitate dry valleys in the affected areas of the 'Horn of Africa', can create the necessary conditions and capacities for climate-adaptive natural resource management (NRM). It remains vital to improve (i) the policy and administrative framework, including pastoralist-friendly land policies; (ii) the implementation of innovative NRM measures [WSW] accompanied by timely and sustainably established agricultural production of the rehabilitated areas; and (iii) capacity development of various stakeholders (especially from the private sector and national NGOs), within agricultural value chains. This can achieve a significant cross-regional contribution to poverty reduction (SDG 1), food security (SDG 2), climate change adaptation (SDG 13), and conservation and sustainable use of terrestrial ecosystems (SDG 15).

Key findings

The relevance of both projects is very high. SDR's role was to test the interventions and explore the feasibility of implementing them. The CDSDR project had the task of training the national and regional partners from the Ministry of Agriculture to increase their planning capacities to implement this approach on a broader scale.

The potential for prediction and upscaling of the WSW approach has been clearly demonstrated by studies conducted by ICRISAT and others during 2015–20, particularly on hydrological modelling, validation mapping, and flood-based productivity of Afar (Gumma et al. 2020; Getnet et al. 2020; Amede et al. 2020). The intervention is aligned with international norms and standards for participation and support for vulnerable groups (the pastoralists in the Eastern Lowlands) and has made a tangible contribution to strengthening the resilience of these disadvantaged groups.

Unintended negative results, at the level of particularly disadvantaged or vulnerable groups, such as a deterioration of the health situation due to high malaria incidence, the displacement of entire communities due to malaria epidemics or Prosopis invasion, increased erosion or further land loss due to invasive plants (as presented in the TV documentation of Frontal 21) were not confirmed by any side and could not be identified and proven at any site.

This is not just a niche approach for a region with some environmental problems, but is perfectly suited for a broad approach and upscaling for similar agro-ecological regions and production systems affected by massive degradation, loss of agricultural production potential, livelihoods and ecosystem services, as well as rural migration and growing food insecurity. For example, in Afar state alone, up to 900,000 ha of lowlands with potential for cropping and fodder production are affected and suitable for this approach. In the entire Horn of Africa region, the area is estimated to be over 2.2 million ha. Even if these areas are only rough calculations, it still shows the great potential in the lowlands in terms of ecological recovery, food and forage crop production as well as job creation. We note that, as emphasised by various parties, this approach is one of the most important innovations that GIZ has introduced in Ethiopia in the last 10 years.

Factors of success/failure

GIZ is ideally suited to test such innovations and develop them into a standardised implementation approach. The training of the partners has been successful, as has the cooperation with universities and the involvement and training of local masons. What was missing was a stronger involvement of the private sector and local NGOs, as well as a stronger focus on scientifically accompanied monitoring of the project outcomes. The agricultural use of the rehabilitated areas was not anchored strongly enough in the project design. Thus, this field of action was neither addressed in planning nor in implementation as it would have been necessary and possible. As a result, important aspects of pasture management and agricultural use and valorisation were neglected. The long, extreme droughts and the enormous locust infestation during the implementation period complicated matters. Preparation of the approach for broad upscaling has regrettably not yet gone ahead.

A major success of CDSDR was the DREAM Conference, held for the first time in 2019 and designed as a regular event. It is an excellent platform to present results and learning experiences, discuss challenges and constraints with other (including high-level) stakeholders, and perceptively position a reputable coalition of supporters of pastoralists living in arid and semi-arid landscapes.

The overall managerial set-up of SDR started slowly, but has grown into a competent team with effective composition and cooperative management. CDSDR has benefited from this. The change of Ethiopian Government in 2015 also contributed to facilitating this approach, as it was successfully anchored in the MoA and its policy documents, as well as in regional district development planning. This is also due to a persistent and consistent management of SDR and CDSDR and piloting of the approach, often in the face of reservations and criticism from within the organisation as well as from partners.

Maintaining good relations with an ever-changing government environment, which had to adapt to the negative circumstances in the country owing to unrest and Covid-19, was an outstanding contribution of both projects'

management. However, the ongoing dialogue driven by SDR and CDSDR with partners largely overcame the risks of escalating or negative outcomes.

Although the region is conflict prone, SDR and CDSDR management has practised a level-headed approach to potential disputes. The development of stronger local community organisations, building on traditional institutions such as the 'Medaa Aba' in Afar (see section 4.7 on Sustainability, dimension 2), which establish and oversee the management of improved areas, will help to avoid and mediate disputes between pastoralists and agro-pastoralists.

Shortcomings in the efficiency of the intervention can be attributed to two internal factors. Although GIZ had experience with this type of intervention, the project matrixes of SDR and CDSDR, with their respective outputs, was not planned specifically enough. Internal organisational bureaucracy also led to time delays. Effectiveness was limited by the droughts and high staff turnover among partners.

Findings regarding follow-on project

The approach of this technical innovation for water harvesting and conservation methods to rehabilitate degraded dry valleys is of great importance, both for the indirect target groups and their environment, and for the economic development of these regions. Enough information, lessons learnt and practical experience has been gained to transform this approach into a (digitised) application module for larger upscaling and should definitely be manifested as a goal in the next phase (CDSDR III). The main task of CDSDR III in this regard will be to increase the involvement and skills of all actors working in the agro-pastoral context, especially government agencies, private sector actors such as construction companies, agro-input/agro-service providers, vocational schools, NGOs, universities and research centres in the next phase, to implement this approach on a broad scale. The need and demand are very high, as is the willingness of the target group to contribute. Donors (BMZ through financial cooperation, World Bank) may wish to financially support the upscaling of this approach given the urgency of the need to support lowland populations (Int 41).

The Federal Republic of Germany supports Ethiopia with a considerable budget for both technical and financial cooperation. Nevertheless, there is no designated BMZ country strategy for the country. Ethiopia plays a crucial role in the entire region in terms of security, stability and economic development. Taking this into account, isolated evaluations of individual projects from the overarching programme (as apparently planned for the second half of the year) are not efficient and are always limited in their findings. Instead, a programme evaluation of the entire GIZ SDR country programme should be carried out soon, with good recommendations for a BMZ country strategy. But even if the BMZ does not have a country strategy, it would be a key support for the SDR programme coordination of GIZ to strategically align the programme to strengthen the resilience of the pastoral and agro-pastoral population in the Ethiopian lowlands. In this context, it is worth mentioning that rural development, the introduction of agro-ecological and climate-adapted agriculture, poverty reduction and food insecurity reduction are of course important goals. However, it should not be forgotten that the country with a strong population growth (predicted to double approximately every 25 years, with a huge need for income generation, especially for young people) also needs among others strong support in (i) developing (small and medium) urban centres; (ii) creating job opportunities; and (iii) solving the severe and momentous nationwide (solid) waste problem.

5.2 Recommendations

Recommendations are based on the specific findings and conclusions of this evaluation (with reference to the evaluation matrix). The recommendations are explicitly addressed to GIZ and partners, as well as for the implementation of the planned (or ongoing) follow-up project.

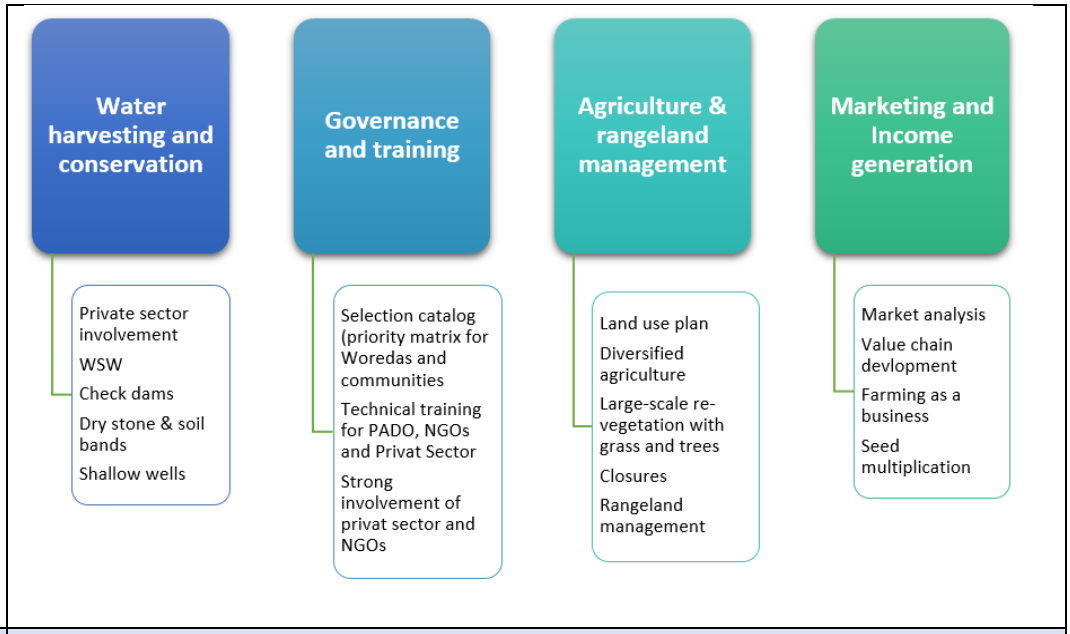
Capacity development for project partner

The new CDSDR III project needs a stronger focus on sustainability. As described in the reform strategy ‘BMZ 2030. Rethinking – Re-orientating’, the world is in a state of transition, the challenges for mankind and our planet are enormous (BMZ 2021a). Therefore, it is important to promote awareness-raising in partnership with the project partners at all levels to continue to steer the agricultural economy on a sustainable path. The approach of a conventional agricultural policy, based on an industrialised, strong and above all external input-dependent agricultural production, increases unreasonable resource consumption, additionally burdens the climate and will not take into account the requirements of a particularly necessary job policy in Ethiopia. Ethiopia should not take this detour and should instead promote sustainable agriculture based on an innovative NRM, a good policy to promote the agricultural economy, including agricultural trade and agricultural financing (Int 63).

Project management and scale-up process in the future phase

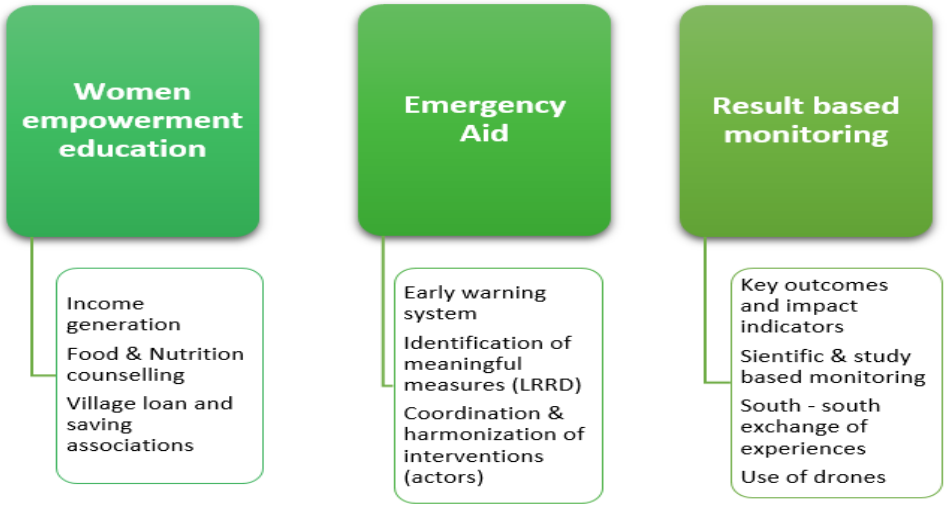
Most important is the preparation of the upscale process and the elaboration of an implementation strategy (see Figure 10). The strategy should be presented in a digitalised blueprint with clearly separated task modules. As a digitalised tool, it provides: the results model and matrix, standardised (module and output) indicators including a uniform design of the M&E system, a blueprint for the operational plan including a timetable, as well as a task plan for the various stakeholders (including a capacity development plan). It is recommended to clearly formulate this for the CDSDR III project phase. The figure below maps the module areas, lists the core outputs in the boxes, and illustrates a possible activity plan for the different stakeholders related to the fields of action (modules).

Figure 10: Blueprint for an implementation strategy



	Module ***(Field of action*** ***Output)***				
Tasks	***Donors*** *(KfW, WB, AfDB, etc.)*	• Fund allocation (as matching fund, district development fond, NGO fund, etc.) • Support for emergency measures linking relief, rehabilitation and development (CfW, FfW, EfF[9], etc.) • Upscale monitoring			
	GIZ	• Training of construction companies and others in WHC (WSW, SW, CD)[10] • Development/ introduction of a certificate system for construction companies • Training and start-up for agro-input and service providers • CD of NGOs in NRM (flood-based farming)	• Training of partners in NRM • Develop selection matrix with partners • Advice on the selection process • Partial financing of bricklayer training • (Partial) financing of specialised technical staff • CD of NGOs in OD[11]	• Train agro-input (AI)/ agro-service providers (ASP) in climate smart agriculture and seed multiplication • Train extension worker (public and NGO) in participative land use planning and 'farming as a business' • Train partners in rangeland management	• Conduct market analysis according to M4P[12] • Train public and NGO extension worker in 'farming as a business' • Train AI/ASP in marketing and market management
	Partners (MoA)	• Community selection (selection matrix) • Timely approval procedures • Supervision	• District development planning • Establish a transparent selection process • Ensure fair application process • Monitoring of the construction measures	• Support rural communities • Facilitate and supervise AI/ASP work • Early warning system and agricultural info service • Tendering of large-scale sowing contracts	• Support for registration processes for agricultural production associations and village savings and loan association (VSLA) • Supervision of market management • Yield monitoring

[9] EfF= Education for Food
[10] WHC = water harvesting and conservation; SW = shallow wells; CD = capacity development; ToT = training of trainers.
[11] OD = Organisational development
[12] M4P = Making Markets work for the poors

	Universities and research centres	• Participant on WHC training		• Provision of drought-tolerant seed varieties • Cultivation advice for extension service, agro-input dealer and NGO staff • Training courses for climate smart and nutrition sensitive agriculture for TOTs	• Accompaniment/ execution of market studies • Outreach to and deployment of MSc students
	Private sector *Construction enterprises/ companies* - *Agro-input dealer* *Agro-service providers (AI/ASP)*	• Participating on WHC training • Construction of WHC infrastructure	• Acquisition of the WHC certificate		• Participation in WSW tenders
			• Seed branding of drought resistant quality seeds	• Sale of diversified range of drought-tolerant seeds • Seed multiplication • Sale of agro-input for irrigation etc. • Tractor services (ploughing) • Large-scale sowing	• Support markets and commercialisation
	NGOs (INGOs)	• Mobilisation of communities • Education and counselling of the communities • Monitoring and supervision of WHC measures	• Support for communities in the application process • Clarification of contributions (closures, afforestation, cash or kind) and monitoring	• Train and support pastoral and agro-pastoral communities in climate smart agriculture • Train target group in hay production and fodder storage	• Train TG in Farming as a business • Link TG with AI/ASP • Introduce voucher approach for AI/ASP • Introduce VSLA • (Market) monitoring
Additional modules (outputs)					
Tasks	***GIZ***	• Train NGOs and consultants in women's empowerment and nutrition • Supervision of ToTs • Contracting female trainers	• Counselling of partners regarding: - Early warning system for farmers and pastoralists • - Round table for emergency actors - Harmonising development-oriented emergency aid measures	• Collaboration agreements between GIZ and universities • Development of an evidence-based M&E system • Context and conflict-sensitive monitoring	
	Partners (MoA)	• Safeguard and supervision of women rights regarding land rights etc. • Gender-related conflict resolution	• Introduction of early warning system (broad casting) • Establish Round Table for Relief Actors • Specifying standardised emergency measures and monitoring	• Harmonisation of M&E systems • Facilitation of modern monitoring tools (drones, etc.)	

	Universities and research centres	• Training courses for nutrition trainees (ToT) • Research on women rights and women empowerment	• Accompaniment through studies	• Collaboration between MoA and Universities • Presentation of results for further
	Private sector *Women's education officers (nutritionists)*	• Train communities in WASH, nutrition and nutrition sensitive agriculture, 'One-Health', family management, VSLA, etc. • Initiate VSLA groups	• Train women in disaster preparedness	• Provide data for research and monitoring purposes
	Agro-input dealer *Agro-service providers (AI/ASP)*	• Train women regarding diary value chain • Equipping women groups		• Provide data for research and monitoring purposes
	NGOs (INGOs)	• Train communities in WASH, nutrition and nutrition sensitive agriculture, 'One-Health', family management, VSLA, etc. • Initiate VSLA groups	• Conduct emergency aid measures (FfW, CfW, etc.) • Train women in disaster preparedness • Monitoring	• Collection of results-oriented monitoring data • Provide data for research and monitoring purposes

The strategy in summary: Local authorities and NGOs should be trained by GIZ to support the communities in the application process. For the planning process at the district level, a priority list (matrix) is necessary, which has to make a selection from the community proposals (applications). This selection matrix should be prepared by the administration with the support of GIZ. It is based on criteria such as urgency of the measure, number of beneficiaries, number of achievable hectares that can be rehabilitated (cost/benefit ratio), environmental impact, etc. The administration should make sure that aspects such as the number of hectares that can be rehabilitated are taken into account. The administration should ensure that aspects such as the clarification of own contributions to the measure, as well as land use rights are taken into account in order to recognise own initiative, ownership and commitment. Construction is done by qualified and certified construction companies, trained by GIZ. Construction supervision and acceptance are carried out by the authorities and, if necessary, supported by NGOs. NGOs and agro-input/and agro-service providers, trained by GIZ, support sustainable land use.

There is tremendous interest from communities, academics, researchers and government agencies in taking action to a level beyond the scope of single projects. Programme funding is necessary and should be provided by international donors, for instance, as matching funds, district development funds, NGO funds, etc.

External support could be involved from international networks. A consortium of Ethiopian partners should take advantage of these networks, as suggested by an interviewee (Int 42 with expert).

All in all, there is the possibility of extending this approach to 'Strengthening drought resilience in arid and semi-arid areas' to other sub-Saharan countries, including Kenya, Uganda, Somalia and others.

Further identify extrapolation domains

To promote wide-scale adoption of WSW there is a need to identify further the extrapolation domains for siting WSW in river valleys. The work done by ICRISAT (ICRISAT 2019) is a very good start. The evaluation recommends that where appropriate, future projects should establish links with initiatives such as the Worldwide Hydrological Mapping and Assessment Programme (WHYMAP) and discuss with, for example, the US GRACE (Gravity Recovery and Climate Experiment) and German space agencies that can help determine changes in groundwater. The lowlands of Ethiopia are areas with complex hydrological structures that need to be further understood. One advantage of these areas is that they appear to have medium groundwater recharge capacities indicating good potential for groundwater storage of flood and irrigation waters (ICRISAT 2020, Calow et al. 2019). The project is currently exploring new sources of GIS that should consider the water aspects.

Hydrological and climate data needs monitoring at district level to improve modelling and forecasting. Village-based monitoring systems could be set up, organised and run by local participants (see GIZ-supported work of the Watershed Organisation Trust in India, www.wotr.org [15.06.2021]).

Undertake economic analyses

Land rehabilitation in developing countries requires concerted long-term efforts involving all stakeholders (governmental, non-governmental, pastoralist communities as such, community-based organisations, cooperatives, land owners and managers, research and extension agencies and donor agencies). All stakeholders need an agreed clear vision of outcomes, tasks, rights, and cost and benefits. There is a dearth of information on the economic costs and benefits especially in the lowlands of Africa.

Cost-benefit analyses of the project interventions have not been sufficiently addressed. They are urgently needed, perhaps not so much from the household perspective as changes from project outcomes will probably only initially bring marginal improvements in food security and self-sufficiency in the absence of market activity. There is a need for regional-level economic data, to provide evidence to policy-makers on the value of investments and for upscaling. Initial studies from other sources in Ethiopia on the benefits of reducing soil erosion and nutrient loss (mainly in highlands), for example, have indicated benefit/cost ratios above 4, and agricultural GDP and job creation can be substantially improved (Tilahun et al. 2015).

It is recommended that further economic analyses are undertaken as part of a scaling strategy in subsequent projects and as part of communication efforts to inform local communities and policy-makers. A suitable instrument for this is the ‘Making markets work for the poor’ (M4P) tool. As with all proposed SLM options, such studies need to take into account co-benefits identified by affected communities, some of which are likely to be non-economic in nature.

Develop a long-term strategy for DVR as a part of a country/regional programme strategy

Human well-being in the drylands is acutely dependent on the full range of ecosystem services that the land provides. These include not only provisioning services such as food, fodder freshwater, fuelwood but also the key regulating services such as hydrological regulation and water balance, climate regulation via land and water management and the often under-appreciated cultural services that are key to pastoralism including landscape features, folklore and traditions.

Thus, a major challenge is to identify the dimensions of human well-being that are relevant to dryland ecosystems and how proposed changes in land use affect these dimensions. This requires efforts to analyse the spatial and temporal changes in ecosystem services and their effects on human well-being and the environment over time. Here we have a timeline of at least 10–20 years associated with the establishment and maintenance of the main interventions, the WSW and other water harvesting technologies. This cannot be achieved in a three to five-year project cycle; but a positive development is the relatively long-term commitment of German development agencies for NRM, agriculture and food security. The projects do not yet fully understand the directions that such changes may take as this requires much more socio-economic and environmental studies on, for example, market development for products of diversification and off-site environmental impacts. The projects have delivered limited information on these changes as a result of the valid limitations noted in the reported logframes and the narratives of progress.

The majority of the population are pastoralists with some becoming agro-pastoralists with some encouragement from government policies. While there has been a huge and successful effort to establish physical structures with training on stone masonry and governance, more effort is required on communal tenure and natural resource governance. This requires time and facilitation skills in working with government and development partners, and a view to nurturing long-term changes in attitudes and practices now that the projects have established physical investments in WSW etc. These aspects are partly covered in the DVR approach via community-based organisations and bylaws within communities but need strengthening in terms of the priorities for better rangeland management with all stakeholders.

Ongoing programme execution

1. Develop an indicator on soil fertility (e.g. moisture)

The achievement of significant increases in crop production depends not only on the establishment of WSW and other structures but a continual monitoring of soil fertility, capacity building in agronomy, integrated soil fertility management, water and watershed management through user associations and the like, access to markets, improved infrastructure and community-based NRM. The rural poor are increasingly concentrated on land with poor soils of declining quality; this constraint limits agricultural productivity and the standard of living. Promoting soil fertility via interventions such as WSW can therefore contribute to rural transformation, poverty reduction and improved human well-being. The measure of soil moisture was found to be a useful proxy for soil fertility and was significantly associated with higher household living standards in arid and semi-arid lands (Barbier and Falco 2021). We recommend that soil moisture be used as one indicator of soil fertility (quality) in future studies along with measurements of groundwater and biomass yields.

2. Monitor groundwater levels

Captured flood water can be used directly for crop/fodder production (green water) or through infiltration and conserved/stored as groundwater (blue water). The proportion of water that infiltrates into groundwater depends on a number of factors including slope rate of flow etc. Since the project was initiated there have been significant advances in the measurement and estimation of groundwater. The standardised introduction of shallow wells into the WSW cascade system can be used for this purpose.

Expand the work on value chains and markets

Even with increased biomass production, isolation from markets can restrict the expected benefits as a result of increased costs of marketing and crop production in more remote areas indicating that work on value chains and market access is an essential component of improving livelihoods in rehabilitated dry valleys. With its Sector Network Rural Development Africa, the sector and global projects, GIZ has great competence and a wealth of experience in the organisation, especially on agricultural trade, agricultural financing and agricultural economic promotion, which could be increasingly brought into play in the next phase, CDSDR III. More support from GIZ's department for technical and methodological support (FMB), as well as from the portfolio or cluster coordinator, would be desirable in this context.

Develop a strategy for rangeland management beyond the intervention areas

A concentration of improved biomass will inevitably draw attention and create tensions on the use of the biomass and grazing areas around them. The project is encouraged to establish community-based rangeland management systems that include both the WSW areas and the surrounding rangelands. In East Africa, there are many examples of such institutions built on customary or traditional arrangements. Studies carried out in Kenyan rangelands, for example, emphasise that although different organisational models exist, there are common challenges (Robinson et al. 2021). These include the need for formal recognition and legal support of the organisations, ranging from community-based NRM committees, environmental management committees, water users' associations, traditional arrangement ('desso'), etc.

Community-based arrangements can also provide for increased security and implementation of rules and regulations. The project team is recommended to review these findings and develop a strategy for general rangeland management. A valuable rangeland management tool has been published to this end at: (https://cgspace.cgiar.org/handle/10568/102150 [*10.06.2021*]) that builds on the earlier toolkit prepared by GIZ and the Government of Kenya. Some of these issues appear to be ongoing in the linked GIZ projects and CDSDR III. The team may wish to consider these comments in the preparation of CDSDR III.

What now needs attention is the relation of the improved areas around the WSW with the surrounding and generally degrading rangelands. In addition, training and implementation of rangeland rehabilitation methods

will be required to relieve pressure on the improved areas while surrounding rangelands continue to degrade. These are additional to training on the construction and maintenance of WSW. Listings of possible approaches and technologies for rangeland rehabilitation can be found, for example, under World Overview of Conservation Approaches and Technologies (WOCAT) publications. WOCAT is a global network on sustainable land management (SLM) that promotes the documentation, sharing and use of knowledge to support adaptation, innovation and decision-making in SLM. Local forage seed production may be a key to this activity and lists of useful species have been collected with local knowledge.

Recommendations to the GIZ head quarters

The SDR programme in Ethiopia has grown over time, project by project, but without a country strategy. Therefore, for such a complex and multi-layered programme, it is recommended to conduct a programme evaluation of the SDR country programme soon and at least to develop a strategy in the agricultural cluster. This is to achieve a clear goal orientation, to adapt and improve implementation strategies, to avoid overlaps, to make better use of synergies and to generate gains in effectiveness and efficiency.

Last but not least, we recommend that the upscaling process should be supported so that at the end of CDSDR III there is a project-type blueprint in digital form, with goal-based modules as suggested above.

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Annex 1a: Evaluation matrix SDR

OECD/DAC criterion RELEVANCE (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The project design (1) is in line with the relevant strategic reference frameworks. Max. 30 points	Standard	Which strategic reference frameworks exist for the project? (e.g. national strategies incl. national implementation strategy for Agenda 2030, regional and international strategies, sectoral, cross-sectoral change strategies, if bilateral project especially partner strategies, internal analysis frameworks e.g. safeguards and gender (2))	No indicator, descriptive	Document analysis, interviews, survey	'Ethiopia Country Programming Paper (CPP)', the 'Five-Year Growth and Transformation Plan (GTP II)', the Agenda for Sustainable Development 2030. African Union: the 'Agenda 2063 'The Africa we want', the 'Policy Framework for Pastoralism in Africa', and the 'Comprehensive Africa Agriculture Development Programme (CAADP). Project progress report, Safeguard & Gender; relevant line ministries, regional coordinators, GIZ staff.	strong
	Standard	To what extent is the project design in line with the relevant strategic reference frameworks?	No indicator, descriptive	Document analysis, interviews, survey	'Ethiopia Country Programming Paper (CPP)', the 'Five-Year Growth and Transformation Plan (GTP II)', the Agenda for Sustainable Development 2030. African Union: the 'Agenda 2063 'The Africa we want', the 'Policy Framework for Pastoralism in Africa', and the 'Comprehensive Africa Agriculture Development Programme (CAADP). Project progress report, Safeguard & Gender; relevant line ministries, regional coordinators, GIZ staff.	strong
	and Fragility	To what extent was the (conflict) context of the project adequately analysed and considered for the project concept (key documents: (Integrated) Peace and Conflict Assessment, Safeguard Conflict and Conflict Sensitivity documents)?	Project is a line	Document analysis	Analysis of PCA, Safeguard & Gender,	strong
	Standard	To what extent are the interactions (synergies/trade-offs) of the intervention with other sectors reflected in the project design – also regarding the sustainability dimensions (ecological, economic and social)?	Interactions are reflected in the concept	Document analysis	Project proposal, Chapter 3.4.3	strong
	Standard	To what extent is the project design in line with the Development Cooperation (DC) programme (If applicable), the BMZ country strategy and BMZ sectoral concepts?	No BMZ country strategy, Global sector concept	Document review	Global sector concept Transition Aid	moderate
	Standard	To what extend is the project concept in line with the (national) objectives of the Agenda 2030? To which Sustainable Development Goals (SDG) is the project supposed to contribute?	SDG are not specifically considered during project design and development	Document review	Project proposal	moderate
	Standard	To what extend is the project design subsidiary to partner efforts or efforts of other relevant organisations (subsidiarity and complementarity)?	Project concept is at least not subsidiary, but more complementary	Document review	Project proposal	moderate
The project design (1) matches the needs of the target group(s).	Standard	To what extent is the chosen project design geared to the core problems and needs of the target group(s)?	PC is addressing the core problems and needs of TG	Interview, FGD, discussion and observations, review	Stakeholders, TG, staff, project documents	strong

Max. 30 points	Standard	How are the different perspectives, needs and concerns of women and men represented in the project design?	Activities gender disaggregated with specific target for women	Document review	Project proposal	strong
	and Fragility	How were deescalating factors/ connectors (4) as well as escalating factors/ dividers (5) identified (e.g. see column I and II of the Peace and Conflict Assessment) and considered for the project design (please list the factors)? (6)	A. Pastoral groups involved in inter- and intra-ethnic conflicts with regional and international dynamics, tensions and clashes.	Document review	Project proposal	good
	Standard	To what extent was the project designed to reach particularly disadvantaged groups (LNOB principle, as foreseen in the Agenda 2030)? How were identified risks and potentials for human rights and gender aspects included into the project design?	Disadvantaged groups are not particularly addressed in the project offer and results matrix. Risks and potentials for human rights and gender aspects are addressed in the project offer and results matrix.	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	strong
	and Fragility	To what extent were potential (security) risks for (GIZ) staff, partners, target groups/final beneficiaries identified and considered?	Potential (security) risks for (GIZ) staff, partners, target groups/final beneficiaries identified and considered in PC	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	strong
	Standard	To what extent are the intended impacts regarding the target group(s) realistic from today's perspective and the given resources (time, financial, partner capacities)?	PC was modified (time and financial) to reflect the emerging needs	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	moderate
The project is adequately designed to achieve the chosen project objective. Max. 20 points	Standard	Assessment of current results model and results hypotheses (theory of change, ToC) of actual project logic: - To what extent is the project objective realistic from today's perspective and the given resources (time, financial, partner capacities)? - To what extent are the activities, instruments and outputs adequately designed to achieve the project objective? - To what extent are the underlying results hypotheses of the project plausible? - To what extent is the chosen system boundary (sphere of responsibility) of the project (including partner) clearly defined and plausible? - Are potential influences of other donors/organisations outside of the project's sphere of responsibility adequately considered? - To what extent are the assumptions and risks for the project complete and plausible?	Objective is realistic. – Project activities, instruments and outputs are adequately designed. – Underlying results hypothesis are plausible. – System boundaries clear and plausible. – Influences of donors/other organisations are considered. – Project assumptions and risks complete and plausible.	Results model/ logframe review, PC analysis	Progress reports, results model, annual planning documents	strong
	Standard	To what extent does the strategic orientation of the project address potential changes in its framework conditions?	Potential changes in framework conditions are reflected in the offer / results matrix	Document analysis, interviews, survey	Project offer, interviews with responsible for the commission, project team questionnaire	strong
	Standard	How is/was the complexity of the framework conditions and guidelines handled? How is/was any possible overloading dealt with and strategically focused?	The project concept is strategically sufficiently focused to deal with overloading / the complexity of framework conditions	Document analysis, interviews, survey	Project offer, change offer, progress reports, interviews with GIZ responsible of the commission and project team, questionnaire	strong

The project design (1) was adapted to changes in line with requirements and re-adapted where applicable. Max. 20 points	Standard	What changes have occurred during project implementation? (e.g. local, national, international, sectoral, including state-of-the-art of sectoral know-how)?	Drought mitigation (addition of water component, additional funds, time, more staff)	Document analysis, interviews, survey	Drought assessment report, BL report, progress report	strong
	Standard	How were the changes dealt with regarding the project design?	Through change offers	Document analysis, interviews, survey	Responsible officer	strong

OECD/DAC criterion EFFECTIVENESS (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The project achieved the objective (outcome) on time in accordance with the project objective indicators.(1) Max. 40 points	Standard	To what extent has the agreed project objective (outcome) been achieved (or will be achieved until end of project), measured against the objective indicators? Are additional indicators needed to reflect the project objective adequately?	Outcome indicators partly achieved (indicators sufficiently reflect the project objective, partly, they had to be rephrased / interpreted with project team to be SMART)	ROMA	Project report, interviews	good
	and Fragility	For projects with FS1 or FS2 markers: To what extent was the project able to strengthen deescalating factors/ connectors (2,4)?	FS1: Do no harm is the basis of the project	review	Project offer, PCA	good
	Standard	To what extent is it foreseeable that unachieved aspects of the project objective will be achieved during the current project term?	It is plausible that unachieved aspects of the project will be achieved during the ongoing project term	Survey, interviews, field visits / observation	Project team questionnaire, interviews with project team and partners, field visits	strong
The activities and outputs of the project contributed substantially to achieving the project objective (outcome).(1) Max. 30 points	Standard	To what extent have the agreed project outputs been achieved (or will be achieved until the end of the project), measured against the output indicators? Are additional indicators needed to reflect the outputs adequately?	Output indicators achieved (indicators sufficiently reflect the outputs, but had to be rephrased / interpreted with project team to be SMART)	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	How does the project contribute via activities, instruments and outputs to achieving the project objective (outcome)? (contribution analysis approach)	It is plausible that the activities and instruments have contributed to outputs and the outputs have contributed to the project objective	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	good
	Standard	Implementation strategy: Which factors in the implementation contribute successfully to or hinder the achievement of the project objective? (e.g. external factors, managerial set-up of project and company, cooperation management)	Reports / interviewees identify hindering / supporting factors (external and internal)	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	What other/alternative factors contributed to the fact that the project objective was achieved or not achieved?	Reports / interviewees identify other factors that contributed to the (non-)achievement of the project objective	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	What would have happened without the project?	No indicator, descriptive	Survey, interviews	Interviews with project team, partners and other stakeholders, project team questionnaire	good
No project-related (unintended) negative results have occurred – and if any negative results occurred the	Standard	Which (unintended) negative or (formally not agreed) positive results does the project produce at output and outcome level and why?	No unintended negative outcomes can be identified · Formally not agreed positive results can be identified	Document analysis, workshop, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	good

project responded adequately. The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. Max. 30 points	and Fragility	To what extent was the project able to ensure that escalating factors/ dividers (3) have not been strengthened (indirectly) by the project (4)? Has the project unintentionally (indirectly) supported violent or 'dividing' actors?	Escalating factors / dividers have not been strengthened	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	How were risks and assumptions (see also GIZ Safeguards and Gender system) as well as (unintended) negative results at the output and outcome level assessed in the monitoring system (e.g. 'Kompass')? Were risks already known during the concept phase?	Risks and assumptions are stated in the offer · Risks, assumptions and unintended results have been covered by the project's monitoring system	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	and Fragility	To what extent have risks in the context of conflict, fragility and violence (5) been monitored (context/conflict-sensitive monitoring) in a systematic way?	The project has risks in the context of conflict, fragility and violence (5) regularly and systematically monitored	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	What measures have been taken by the project to counteract the risks and (if applicable) occurred negative results? To what extent were these measures adequate?	Project team / reports state measures to counteract risks and negative results · Project team / other stakeholders confirm adequacy of measures	Document analysis, survey, interviews, field visits / observation, focus group discussions	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	To what extend were potential (not formally agreed) positive results at outcome level monitored and exploited?	The project monitored not formally agreed positive results at outcome level · The project states how not formally agreed positive results have been exploited	Document analysis, project monitoring system, survey, interviews, field visits / observation, focus group discussions	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good

OECD/DAC criterion IMPACT (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The intended overarching development results have occurred or are foreseen (plausible reasons). (1) Max. 40 points	Standard	To which overarching development results is the project supposed to contribute (cf. module and programme proposal with indicators/ identifiers if applicable, national strategy for implementing 2030 Agenda, SDGs)? Which of these intended results at the impact level can be observed or are plausible to be achieved in the future?	Intended results at impact level can be observed, ·It is plausible that the project has contributed to the achievement of the overarching results	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partner and beneficiary representatives, field visits to Afar and Somali state region	moderate
	Standard	Indirect target group and 'Leave No One Behind' (LNOB): Is there evidence of results achieved at indirect target group level/specific groups of population? To what extent have targeted marginalised groups (such as women, children, young people, elderly, people with disabilities, indigenous peoples, refugees, IDPs and migrants, people living with HIV/AIDS and the poorest of the poor) been reached?	There is evidence of results achieved at indirect target group level, · There is evidence that marginalised groups have been reached	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partner and beneficiary representatives, field visits to Afar and Somali state region	moderate
The project objective (outcome) of the project contributed to the occurred or foreseen overarching	Standard	To what extent is it plausible that the results of the project on outcome level (project objective) contributed or will contribute to the overarching results? (contribution analysis approach)	Documents / interviewees provide plausible explanations on the contribution of results achieved to the project outcome	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	moderate

development results (impact).(1) Max. 30 points	Standard	What are the alternative explanations/factors for the overarching development results observed? (e.g. the activities of other stakeholders, other policies)	No indicator, descriptive	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	moderate
	Standard	To what extent is the impact of the project positively or negatively influenced by framework conditions, other policy areas, strategies or interests (German ministries, bilateral and multilateral development partners)? How did the project react to this?	Partly descriptive, ·The project seized opportunities and sought to counter-balance negative influences	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	good
	Standard	What would have happened without the project?	No indicator, descriptive	Interviews, focus group discussions, survey	Interviews with GIZ project staff, partners and other stakeholders, focus group discussions with beneficiaries, staff team questionnaire	good
	Standard	To what extent has the project made an active and systematic contribution to widespread impact and were scaling-up mechanisms applied (2)? If not, could there have been potential? Why was the potential not exploited? To what extent has the project made an innovative contribution (or a contribution to innovation)? Which innovations have been tested in different regional contexts? How are the innovations evaluated by which partners?	Scaling-up mechanisms were applied, Innovations have been tested, · Innovative contributions / contributions to innovations have been made	Document analysis, interviews, survey	Final report, progress reports, project team questionnaire, interviews with GIZ project staff and partners	good
No project-related (unintended) negative results at impact level have occurred – and if any negative results occured the project responded adequately. The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. Max. 30 points	Standard	Which (unintended) negative or (formally not agreed) positive results at impact level can be observed? Are there negative trade-offs between the ecological, economic and social dimensions (according to the three dimensions of sustainability in the Agenda 2030)? Were positive synergies between the three dimensions exploited?	Descriptive for unintended results and trade-offs between the ecological, economic and social dimensions, · there is evidence / examples for the exploitation of positive synergies between the three dimensions	Document analysis, workshop, interviews, survey, focus group discussions	Final report, progress reports, interviews with all stakeholders involved in the project, kick-off workshop inception mission, project team questionnaire	good
	and Fragility	To what extent did the project have (unintended) negative or escalating effects on the conflict or the context of fragility (e.g. conflict dynamics, violence, legitimacy of state and non-state actors/institutions)? To what extent did the project have positive or deescalating effects on the conflict or the context of fragility (e.g. conflict dynamics, violence, legitimacy of state and non-state actors/institutions)?	Positive and deescalating effects on the conflict or the context of fragility were assessed during Project M&E	Document analysis, project monitoring system, survey	Offer, final report and progress reports, project monitoring sheets, interviews with responsible for the commission and M&E responsible, project team questionnaire	good
	Standard	To what extent were risks of (unintended) results at the impact level assessed in the monitoring system (e.g. 'Kompass')? Were risks already known during the planning phase?	Risks were assessed during the planning phase, ·Risks are assessed in the project monitoring system	Document analysis, project monitoring system, survey	Offer, final report and progress reports, project monitoring sheets, interviews with responsible for the commission and M&E responsible, project team questionnaire	good
	Standard	What measures have been taken by the project to avoid and counteract the risks/negative results/trade-offs (3)?	If risks, trade-offs, negative results were observed, the project team took proactive measures to minimise them	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good
	Standard	To what extent have the framework conditions played a role in regard to the negative results? How did the project react to this?	If the framework conditions were not convenient, the project team took proactive measures to minimise negative results	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good
	Standard	To what extent were potential (not formally agreed) positive results and potential synergies between the ecological, economic and social dimensions monitored and exploited?	Potential unintended positive results and synergies between the dimensions have been a) monitored and b) exploited	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good

OECD/DAC criterion EFFICIENCY (max. 100 points)

Assessment dimensions	Filter – Project Type	Evaluation questions	Evaluation indicators (pilot phase for indicators – only available in German so far)	Data collection methods	Data sources (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	Evidence strength (moderate, good, strong)
The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency: Resources/Outputs] Max. 70 points	Standard	To what extent are there deviations between the identified costs and the projected costs? What are the reasons for the identified deviation(s)?	The project manages its resources according to the planned cost plan (cost lines). Deviations from the cost plan are only made if there is a comprehensible justification.	Efficiency tool, survey, interviewF4:F24	Efficiency tool, survey, interviewF4:F24	good
	Standard	Focus: To what extent could the outputs have been maximised with the same amount of resources and under the same framework conditions and with the same or better quality (maximum principle)? (methodological minimum standard: Follow-the-money approach)	The project reflects whether the agreed impacts can be achieved with the available resources.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	good
	Standard		The project manages its resources according to the planned costs for the agreed outputs. Deviations from the costs are only made if there is a comprehensible justification. The overall costs of the project are in reasonable proportion to the costs for the outputs. The services provided by ZAS notifications have a comprehensible added value for the achievement of the outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The overall costs of the project are proportionate to the costs of the outputs.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The services provided by ZAS records have a traceable added value for the achievement of the outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	Focus: To what extent could outputs have been maximised by reallocating resources between the outputs? (methodological minimum standard: Follow-the-money approach)	The project manages its resources to achieve other outputs faster/better if outputs have been achieved or cannot be achieved (final evaluation). Or: The project manages and plans its resources to achieve other outputs faster/better if outputs have been achieved or cannot be achieved (interim evaluation).	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	Were the output/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how? (methodological minimum standard: Follow-the-money approach)	The instrument concept proposed in the module proposal could be well realized in terms of estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The partner constellation proposed in the module proposal and the associated intervention levels could be realized well in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The thematic structure of the project proposed in the module proposal was well realized in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The risks described in the module proposal are well comprehensible in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The scope of the project described in the module proposal (e.g. regions) could be fully realized in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The approach of the project described in the module proposal with regard to the outputs to be produced corresponds to the state-of-the-art under the given framework conditions.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	For interim evaluations based on the analysis to date: To what extent are further planned expenditures meaningfully distributed among the targeted outputs?	See above	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
The project's use of resources is appropriate with regard to achieving the projects objective	Standard	To what extent could the outcome (project objective) have been maximised with the same amount of resources and the same or better quality (maximum principle)?	The project is based on internal or external benchmarks in order to achieve its effects in a cost-effective manner.	Survey, interviews	Survey, interviews	moderate

(outcome). [Allocation efficiency: Resources/Outcome] Max. 30 points	Standard	Were the outcome-resources ratio and alternatives carefully considered during the conception and implementation process – and if so, how? Were any scaling-up options considered?	The project manages its resources between outputs so that maximum impact is achieved in terms of the module objective. (Final evaluation) Or: The project manages and plans its resources between the outputs so that the maximum effects in terms of the module objective are achieved (interim evaluation).	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The instrument concept proposed in the module proposal was well realized in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The partner constellation proposed in the module proposal and the associated intervention levels could be realized well in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The thematic structure of the project proposed in the module proposal was well realized in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The risks described in the module proposal are well comprehensible in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The scope of the project described in the module proposal (e.g. regions) could be fully realized in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The approach of the project described in the module proposal with regard to the module objective to be achieved corresponds to the state-of-the-art under the given framework conditions.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	To what extent were more results achieved through cooperation / synergies and/or leverage of more resources, with the help of other ministries, bilateral and multilateral donors and organisations (e.g. co-financing) and/or other GIZ projects? If so, was the relationship between costs and results appropriate or did it even improve efficiency?	The project takes the necessary steps to fully realize synergies with interventions of other donors at the impact level.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
	Standard		Cost-effectiveness losses due to insufficient coordination and complementarity with interventions of other donors are sufficiently avoided.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
	Standard		The project takes the necessary steps to fully realize synergies within German DC.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
	Standard		Economic losses due to insufficient coordination and complementarity within German DC are sufficiently avoided.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
	Standard		Combined financing has led to a significant expansion of impacts or this is to be expected.	non-applicable (no co-financing)	non-applicable (no co-financing)	moderate
	Standard		As a result of combined financing, overarching costs have not risen disproportionately in relation to total costs.	non-applicable (no co-financing)	non-applicable (no co-financing)	moderate
	Standard		Partner contributions are commensurate with the cost of the outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate

OECD/DAC criterion SUSTAINABILITY (max. 100 points)

Assessment dimensions	Filter – Project Type	Evaluation questions	Evaluation indicators	Data collection methods (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	Data sources (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	Evidence strength (moderate, good, strong)
Prerequisite for ensuring the long-term success of the project: Results are anchored in (partner) structures. Max. 50 points	Standard	What has the project done to ensure that the results can be sustained in the medium to long term by the partners themselves?	Project documents / stakeholders verify actions that are expected to lead to sustainability of results	Document analysis, interviews, survey	Final report and progress reports, interviews with staff and partners, project team questionnaire	good
	Standard	In what way are advisory contents, approaches, methods or concepts of the project anchored/institutionalised in the (partner) system?	Project documents / stakeholders verify anchoring / institutionalisation of contents, approaches and concepts in the partner systems	Document analysis, interviews, survey	Final report and progress reports, interviews with staff and partners, project team questionnaire	strong
	Standard	To what extent are the results continuously used and/or further developed by the target group and/or implementing partners?	Project documents / stakeholders verify further use / development by the target group / implementing partners	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, focus group discussions with beneficiaries, field visits to Afar and Somali state	moderate
	Standard	To what extent are resources and capacities at the individual, organisational or societal/political level in the partner country available (long-term) to ensure the continuation of the results achieved?	Project's capacity building reports can verify the available capacities ant the individual, organisational or societal/political level	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, field visits to Afar and Somali state	good
	Standard	If no follow-on measure exists: What is the project's exit strategy? How are lessons learnt for partners and GIZ prepared and documented?	Project exit strategy is available and lessons learnt are documented and disseminated	Document analysis, interviews, survey	Final report, lessons learnt documentation, exit strategy documentation, project team questionnaire, interviews with project staff and partners (mainly focal point)	strong
	and Fragility	To what extent was the project able to ensure that escalating factors/dividers (1) in the context of conflict, fragility and violence have not been strengthened (indirectly) by the project in the long-term? To what extent was the project able to strengthen deescalating factors/connectors (2) in a sustainable way (3)?	No escalating factors are strengthened during project implementation If escalating factors are noticed, they were counteracted by the project	Data collection method focused on the addressed evaluation questions, no special design was needed: 1. projects reports, documents and national strategies analysis and collation, 2. clarification from project management and key decision-makers at GIZ and Ministry of Environment, 3 workshops and 4. interviews with key stakeholders, focus group	Project reports, project offer, national strategies and fact sheets	good
Forecast of durability: Results of the project are permanent, stable and long-term resilient. Max. 50 points	Standard	To what extent are the results of the project durable, stable and resilient in the long-term under the given conditions?	The project results are considered durable, stable and resilient in the long-term under the given conditions	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, focus group discussions with partners and beneficiaries, field visits to Afar and Somali state	moderate
	Standard	What risks and potentials are emerging for the durability of the results and how likely are these factors to occur? What has the project done to reduce these risks?	No risks emerged If risks emerged, they were counteracted by the project	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, focus group discussions with partners and beneficiaries, field visits to Afar and Somali state	good

Additional evaluation questions

Assessment dimensions	Evaluation questions	Evaluation indicators	Data collection methods (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	Data sources (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	Evidence strength (moderate, good, strong)
Follow-on project (if applicable)	Based on the evaluations results: Are the results model including results hypotheses, the results-oriented monitoring system (WoM), and project indicators plausible and in line with current standards? If applicable, are there any recommendations for improvement?	The results model including results hypotheses, the results-oriented monitoring system (WoM), and project indicators are plausible and in line with current standards	Results model/ logframe review, PC analysis	Progress reports, results model, annual planning documents	strong
Additional **technical** evaluation questions	(1) Who conducted the feasibility studies on selection of sites for the WSW?	Feasibility study	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(2) How well characterised were the chosen sites?	Selection site	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(3) Were there hydrological and geomorphological information of the basins available or were any measurements taken e.g. to determine potential aquifers, water tables, GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded using such methods as hydrological frequency analysis software, estimations of minimum rainfall required to initiate flood flows (for early warning purposes for example)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(4) During the testing of the WSW what was measured?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(5) Were water quality and amounts measured or estimated (e.g. for health and sanitation, nutrients in the floodwaters, potential risks such as excessive minerals, water pH)?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(6) Have groundwater measurements been taken (water table depths, potential aquifers under the WSW sites)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(7) Have there been attempts at estimating the water balances at the WSW in terms of how much is captured through infiltration, productive use and ongoing flows out of the basins?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(8) Was deposition of silt measured?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(9) Are there estimates of how much water is required for different land use options (crops, fodder, domestic water supplies) at each WSW? What can be said about available water capacities with regards to productive use?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong

	(10) Are there estimates of how much water can infiltrate the soil, raise water tables and be stored as a drought resilience mechanism? For example, can the captured water be estimated and related to predicted droughts in terms of maintenance of productive use, domestic water requirements?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(11) Have there been attempts to estimate what the extra water can be most effectively used for? For example an additional use of 1 m3 of water used in evapotranspiration (i.e., passage through plants) could produce an extra 1.7 kg of maize, 1.5 kg of sorghum. Similarly, an increase in plant water use of just 25 mm could increase yields of maize and sorghum by 38 and 58% respectively.	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(12) Is there enough data to estimate the costs of capturing a cubic metre of water used for crop production?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(13) Have the benefits of increased production been quantified in terms of increased income?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(14) Have the benefits of increased production per unit of land area been quantified in terms of additional job creation both on-site and potentially off-site through retailing sectors (agricultural inputs, machinery, food markets, etc.)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong

Annex 1b: Evaluation matrix CDSDR

OECD/DAC criterion RELEVANCE (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The project design (1) is in line with the relevant strategic reference frameworks. Max. 30 points	Standard	Which strategic reference frameworks exist for the project? (e.g. national strategies incl. national implementation strategy for Agenda 2030, regional and international strategies, sectoral, cross-sectoral change strategies, if bilateral project especially partner strategies, internal analysis frameworks e.g. safeguards and gender (2))	No indicator, descriptive	Document analysis, interviews, survey	'Ethiopia Country Programming Paper (CPP)', the 'Five-Year Growth and Transformation Plan (GTP II)', the Agenda for Sustainable Development 2030. African Union: the 'Agenda 2063 'The Africa we want', the 'Policy Framework for Pastoralism in Africa', and the 'Comprehensive Africa Agriculture Development Programme (CAADP). Project progress report, Safeguard & Gender; relevant line ministries, regional coordinators, GIZ staff.	strong
	Standard	To what extent is the project design in line with the relevant strategic reference frameworks?	No indicator, descriptive	Document analysis, interviews, survey	'Ethiopia Country Programming Paper (CPP)', the 'Five-Year Growth and Transformation Plan (GTP II)', the Agenda for Sustainable Development 2030. African Union: the 'Agenda 2063 'The Africa we want', the 'Policy Framework for Pastoralism in Africa', and the 'Comprehensive Africa Agriculture Development Programme (CAADP). Project progress report, Safeguard & Gender; relevant line ministries, regional coordinators, GIZ staff.	strong
	and Fragility	To what extent was the (conflict) context of the project adequately analysed and considered for the project concept (key documents: (Integrated) Peace and Conflict Assessment, Safeguard Conflict and Conflict Sensitivity documents)?	Project is a line	Document analysis	Analysis of PCA, Safeguard & Gender,	strong
	Standard	To what extent are the interactions (synergies/trade-offs) of the intervention with other sectors reflected in the project design – also regarding the sustainability dimensions (ecological, economic and social)?	Interactions are reflected in the concept	Document analysis	Project proposal, Chapter 3.4.3	strong
	Standard	To what extent is the project design in line with the Development Cooperation (DC) programme (If applicable), the BMZ country strategy and BMZ sectoral concepts?	No BMZ country strategy, Global sector concept	Document review	Global sector concept Transition Aid	moderate
	Standard	To what extend is the project concept in line with the (national) objectives of the Agenda 2030? To which Sustainable Development Goals (SDG) is the project supposed to contribute?	SDG are not specifically considered during project design and development	Document review	Project proposal	moderate
	Standard	To what extend is the project design subsidiary to partner efforts or efforts of other relevant organisations (subsidiarity and complementarity)?	Project concept is at least not subsidiary, but more complementary	Document review	Project proposal	moderate

The project design (1) matches the needs of the target group(s). Max. 30 points	Standard	To what extent is the chosen project design geared to the core problems and needs of the target group(s)?	PC is addressing the core problems and needs of TG	Interview, FGD, discussion and observations, review	Stakeholders, TG, staff, project documents	strong
	Standard	How are the different perspectives, needs and concerns of women and men represented in the project design?	Activities gender disaggregated with specific target for women	Document review,	Projekt proposal	strong
	and Fragility	How were deescalating factors/ connectors (4) as well as escalating factors/ dividers (5) identified (e.g. see column I and II of the Peace and Conflict Assessment) and considered for the project design (please list the factors)? (6)	A. Pastoral groups involved in inter- and intra-ethnic conflicts with regional and international dynamics, tensions and clashes. B. Ethiopian Government favouring settlement of pastoralists. C. High number of destitute pastoralists (dropouts) and displaced persons due to population growth, hardening of ethnic lines, increasing numbers of droughts and floods. D. Authoritarian one party regime with repressive actions against political opponents & civil society & media. E. Displaced pastoral groups/families with low bargaining power due to inability of regional/local government to enforce communal property rights. F. Ethno-nationalistically motivated conflicts between insurgents and government troops in connection with political power and regional autonomy	Document review	Project proposal	good
	Standard	To what extent was the project designed to reach particularly disadvantaged groups (LNOB principle, as foreseen in the Agenda 2030)? How were identified risks and potentials for human rights and gender aspects included into the project design?	Disadvantaged groups are not particularly addressed in the project offer and results matrix. Risks and potentials for human rights and gender aspects are addressed in the project offer and results matrix.	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	strong
	and Fragility	To what extent were potential (security) risks for (GIZ) staff, partners, target groups/final beneficiaries identified and considered?	Potential (security) risks for (GIZ) staff, partners, target groups/final beneficiaries identified and considered in PC	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	strong
	Standard	To what extent are the intended impacts regarding the target group(s) realistic from today's perspective and the given resources (time, financial, partner capacities)?	PC was modified (time and financial) to reflect the emerging needs	Document analysis, survey	Project offer, results matrix / model, gender analysis, project team questionnaire	moderate
The project is adequately designed to achieve the chosen project objective. Max. 20 points	Standard	Assessment of current results model and results hypotheses (theory of change, ToC) of actual project logic: - To what extent is the project objective realistic from today's perspective and the given resources (time, financial, partner capacities)? - To what extent are the activities, instruments and outputs adequately designed to achieve the project objective? - To what extent are the underlying results hypotheses of the project plausible? - To what extent is the chosen system boundary (sphere of responsibility) of the project (including partner) clearly defined and plausible? - Are potential influences of other donors/organisations outside of the project's sphere of responsibility adequately considered? - To what extent are the assumptions and risks for the project complete and plausible?	Objective is realistic. – Project activities, instruments and outputs are adequately designed. – Underlying results hypothesis are plausible. – System boundaries clear and plausible. – Influences of donors/other organisations are considered. – Project assumptions and risks complete and plausible.	Results model/ logframe review, PC analysis	Progress reports, results model, annual planning documents	strong
	Standard	To what extent does the strategic orientation of the project address potential changes in its framework conditions?	· Potential changes in framework conditions are reflected in the offer / results matrix	Document analysis, interviews, survey	Project offer, interviews with responsible for the commission, project team questionnaire	strong
	Standard	How is/was the complexity of the framework conditions and guidelines handled? How is/was any possible overloading dealt with and strategically focused?	The project concept is strategically sufficiently focused to deal with overloading / the complexity of framework conditions	Document analysis, interviews, survey	Project offer, change offer, progress reports, interviews with GIZ responsible of the commission and project team, questionnaire	strong

The project design (1) was adapted to changes in line with requirements and re-adapted where applicable. Max. 20 points	Standard	What changes have occurred during project implementation? (e.g. local, national, international, sectoral, including state-of-the-art of sectoral know-how)?	Drought mitigation (addition of water component, additional funds, time, more staff)	Document analysis, interviews, survey	Drought assessment report, BL report, progress report	strong
	Standard	How were the changes dealt with regarding the project design?	Through change offers	Document analysis, interviews, survey	Responsible officer	strong

OECD/DAC criterion EFFECTIVENESS (max. 100 points)

Assessment dimensions	Filter – Project Type	Evaluation questions	Evaluation indicators	Data collection methods (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	Data sources (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	Evidence strength (moderate, good, strong)
The project achieved the objective (outcome) on time in accordance with the project objective indicators.(1) Max. 40 points	Standard	To what extent has the agreed project objective (outcome) been achieved (or will be achieved until end of project), measured against the objective indicators? Are additional indicators needed to reflect the project objective adequately?	· Outcome indicators partly achieved (indicators sufficiently reflect the project objective, partly, they had to be rephrased / interpreted with project team to be SMART)	ROMA	Project report, interiews	good
	and Fragility	For projects with FS1 or FS2 markers: To what extent was the project able to strengthen deescalating factors/ connectors (2,4)?	FS1: Do no harm is the basis of the project	review	Project offer, PCA	good
	Standard	To what extent is it foreseeable that unachieved aspects of the project objective will be achieved during the current project term?	It is plausible that unachieved aspects of the project will be achieved during the ongoing project term	Survey, interviews, field visits / observation	Project team questionnaire, interviews with project team and partners, field visits	strong
The activities and outputs of the project contributed substantially to achieving the project objective (outcome).(1) Max. 30 points	Standard	To what extent have the agreed project outputs been achieved (or will be achieved until the end of the project), measured against the output indicators? Are additional indicators needed to reflect the outputs adequately?	Output indicators achieved (indicators sufficiently reflect the outputs, but had to be rephrased / interpreted with project team to be SMART)	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	How does the project contribute via activities, instruments and outputs to achieving the project objective (outcome)? (contribution analysis approach)	It is plausible that the activities and instruments have contributed to outputs and the outputs have contributed to the project objective	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	good
	Standard	Implementation strategy: Which factors in the implementation contribute successfully to or hinder the achievement of the project objective? (e.g. external factors, managerial set-up of project and company, cooperation management)	Reports / interviewees identify hindering / supporting factors (external and internal)	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	What other/alternative factors contributed to the fact that the project objective was achieved or not achieved?	Reports / interviewees identify other factors that contributed to the (non-)achievement of the project objective	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	Standard	What would have happened without the project?	No indicator, descriptive	Survey, interviews	Interviews with project team, partners and other stakeholders, project team questionnaire	good

No project-related (unintended) negative results have occurred – and if any negative results occured the project responded adequately. The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. Max. 30 points	Standard	Which (unintended) negative or (formally not agreed) positive results does the project produce at output and outcome level and why?	No unintended negative outcomes can be identified Formally not agreed positive results can be identified	Document analysis, workshop, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	good
	and Fragility	To what extent was the project able to ensure that escalating factors/ dividers (3) have not been strengthened (indirectly) by the project (4)? Has the project unintentionally (indirectly) supported violent or 'dividing' actors?	Escalating factors / dividers have not been strengthened	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	How were risks and assumptions (see also GIZ Safeguards and Gender system) as well as (unintended) negative results at the output and outcome level assessed in the monitoring system (e.g. 'Kompass')? Were risks already known during the concept phase?	Risks and assumptions are stated in the offer · Risks, assumptions and unintended results have been covered by the project's monitoring system	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	and Fragility	To what extent have risks in the context of conflict, fragility and violence (5) been monitored (context/conflict-sensitive monitoring) in a systematic way?	The project has risks in the context of conflict, fragility and violence (5) regularly and systematically monitored	Document analysis, project monitoring system, survey, interviews	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	What measures have been taken by the project to counteract the risks and (if applicable) occurred negative results? To what extent were these measures adequate?	Project team / reports state measures to counteract risks and negative results · Project team/ other stakeholders confirm adequacy of measures	Document analysis, survey, interviews, field visits/ observation, focus group discussions	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good
	Standard	To what extend were potential (not formally agreed) positive results at outcome level monitored and exploited?	The project monitored not formally agreed positive results at outcome level. The project states how not formally agreed positive results have been exploited	Document analysis, project monitoring system, survey, interviews, field visits / observation, focus group discussions	Project offer, progress reports, assessment of monitoring data, interview responsible for the commission, project team questionnaire	good

OECD/DAC criterion IMPACT (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The intended overarching development results have occurred or are foreseen (plausible reasons). (1) Max. 40 points	Standard	To which overarching development results is the project supposed to contribute (cf. module and programme proposal with indicators/ identifiers if applicable, national strategy for implementing 2030 Agenda, SDGs)? Which of these intended results at the impact level can be observed or are plausible to be achieved in the future?	Intended results at impact level can be observed, It is plausible that the project has contributed to the achievement of the overarching results	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partner and beneficiary representatives, field visits to Afar and Somali state region	moderate
	Standard	Indirect target group and 'Leave No One Behind' (LNOB): Is there evidence of results achieved at indirect target group level/specific groups of population? To what extent have targeted marginalised groups (such as women, children, young people, elderly, people with disabilities, indigenous peoples, refugees, IDPs and migrants, people living with HIV/AIDS and the poorest of the poor) been reached?	There is evidence of results achieved at indirect target group level. There is evidence that marginalised groups have been reached	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partner and beneficiary representatives, field visits to Afar and Somali state region	moderate

The project objective (outcome) of the project contributed to the occurred or foreseen overarching development results (impact).(1) Max. 30 points	Standard	To what extent is it plausible that the results of the project on outcome level (project objective) contributed or will contribute to the overarching results? (contribution analysis approach)	Documents / interviewees provide plausible explanations on the contribution of results achieved to the project outcome	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	moderate
	Standard	What are the alternative explanations/factors for the overarching development results observed? (e.g. the activities of other stakeholders, other policies)	No indicator, descriptive	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	moderate
	Standard	To what extent is the impact of the project positively or negatively influenced by framework conditions, other policy areas, strategies or interests (German ministries, bilateral and multilateral development partners)? How did the project react to this?	Partly descriptive, ·The project seized opportunities and sought to counter-balance negative influences	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, field visits to Afar and Somali state region	good
	Standard	What would have happened without the project?	No indicator, descriptive	Interviews, focus group discussions, survey	Interviews with GIZ project staff, partners and other stakeholders, focus group discussions with beneficiaries, staff team questionnaire	good
	Standard	To what extent has the project made an active and systematic contribution to widespread impact and were scaling-up mechanisms applied (2)? If not, could there have been potential? Why was the potential not exploited? To what extent has the project made an innovative contribution (or a contribution to innovation)? Which innovations have been tested in different regional contexts? How are the innovations evaluated by which partners?	Scaling-up mechanisms were applied, · Innovations have been tested, · Innovative contributions / contributions to innovations have been made	Document analysis, interviews, survey	Final report, progress reports, project team questionnaire, interviews with GIZ project staff and partners	good
No project-related (unintended) negative results at impact level have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. Max. 30 points	Standard	Which (unintended) negative or (formally not agreed) positive results at impact level can be observed? Are there negative trade-offs between the ecological, economic and social dimensions (according to the three dimensions of sustainability in the Agenda 2030)? Were positive synergies between the three dimensions exploited?	Descriptive for unintended results and trade-offs between the ecological, economic and social dimensions. There is evidence / examples for the exploitation of positive synergies between the three dimensions	Document analysis, workshop, interviews, survey, focus group discussions	Final report, progress reports, interviews with all stakeholders involved in the project, kick-off workshop inception mission, project team questionnaire	good
	and Fragility	To what extent did the project have (unintended) negative or escalating effects on the conflict or the context of fragility (e.g. conflict dynamics, violence, legitimacy of state and non-state actors/institutions)? To what extent did the project have positive or deescalating/escalating effects on the conflict or the context of fragility (e.g. conflict dynamics, violence, legitimacy of state and non-state actors/institutions)?	Positive and deescalating effects on the conflict or the context of fragility were assessed during Project M&E	Document analysis, project monitoring system, survey	Offer, final report and progress reports, project monitoring sheets, interviews with responsible for the commission and M&E responsible, project team questionnaire	good
	Standard	To what extent were risks of (unintended) results at the impact level assessed in the monitoring system (e.g. 'Kompass')? Were risks already known during the planning phase?	Risks were assessed during the planning phase, Risks are assessed in the project monitoring system	Document analysis, project monitoring system, survey	Offer, final report and progress reports, project monitoring sheets, interviews with responsible for the commission and M&E responsible, project team questionnaire	good
	Standard	What measures have been taken by the project to avoid and counteract the risks/negative results/trade-offs (3)?	If risks, trade-offs, negative results were observed, the project team took proactive measures to minimise them	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good
	Standard	To what extent have the framework conditions played a role in regard to the negative results? How did the project react to this?	If the framework conditions were not convenient, the project team took proactive measures to minimise negative results	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good

	Standard	To what extent were potential (not formally agreed) positive results and potential synergies between the ecological, economic and social dimensions monitored and exploited?	Potential unintended positive results and synergies between the dimensions have been a) monitored and b) exploited	Document analysis, interviews, survey	Final report and progress reports, interviews with project team, project team questionnaire	good

OECD/DAC criterion EFFICIENCY (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators (pilot phase for indicators – only available in German so far)**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency: Resources/Outputs] Max. 70 points	Standard	To what extent are there deviations between the identified costs and the projected costs? What are the reasons for the identified deviation(s)?	The project manages its resources according to the planned cost plan (cost lines). Deviations from the cost plan are only made if there is a comprehensible justification.	Efficiency tool, survey, interviewF4:F24	Efficiency tool, survey, interviewF4:F24	good
	Standard	Focus: To what extent could the outputs have been maximised with the same amount of resources and under the same framework conditions and with the same or better quality (maximum principle)? (methodological minimum standard: Follow-the-money approach)	The project reflects whether the agreed impacts can be achieved with the available resources.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	good
	Standard		The project manages its resources according to the planned costs for the agreed outputs. Deviations from the costs are only made if there is a comprehensible justification. The overall costs of the project are in reasonable proportion to the costs for the outputs. The services provided by ZAS quotations have a comprehensible added value for the achievement of the outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The overall costs of the project are proportionate to the costs of the outputs.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The services provided by ZAS quotations have a traceable added value for the achievement of the outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	Focus: To what extent could outputs have been maximised by reallocating resources between the outputs? (methodological minimum standard: Follow-the-money approach)	The project manages its resources to achieve other outputs faster/better if outputs have been achieved or cannot be achieved (final evaluation). Or: The project manages and plans its resources to achieve other outputs faster/better if outputs have been achieved or cannot be achieved (interim evaluation).	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	Were the output/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how? (methodological minimum standard: Follow-the-money approach)	The instrument concept proposed in the module proposal was well realized in terms of the estimated costs in relation to the intended outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The partner constellation proposed in the module proposal and the associated intervention levels could be realized well in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The thematic structure of the project proposed in the module proposal was well realized in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The risks described in the module proposal are well comprehensible in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate

	Standard		The scope of the project described in the module proposal (e.g. regions) could be fully realised in terms of the estimated costs in relation to the targeted outputs of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard		The approach of the project described in the module proposal with regard to the outputs to be achieved corresponds to the state-of-the-art under the given framework conditions.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	For interim evaluations based on the analysis to date: To what extent are further planned expenditures meaningfully distributed among the targeted outputs?	see above	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
Allocation efficiency	Standard	To what extent could the outcome (project objective) have been maximised with the same amount of resources and the same or better quality (maximum principle)?	The project is oriented towards internal or external benchmarks in order to achieve its impacts in a cost-effective manner.	Survey, interviews	Survey, interviews	moderate
	Standard	Were the outcome-resources ratio and alternatives carefully considered during the conception and implementation process – and if so, how? Were any scaling-up options considered?	The project manages its resources between outputs so that the maximum impact is achieved in terms of the module objective. (Final evaluation) Or: The project manages and plans its resources between the outputs so that the maximum impacts in terms of the module objective are achieved. (Interim evaluation)	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The instrument concept proposed in the module proposal was well realised in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The partner constellation proposed in the module proposal and the associated intervention levels could be realised well in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The thematic structure of the project proposed in the module proposal could be realised well in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The risks described in the module proposal are well comprehensible in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The scope of the project described in the module proposal (e.g. regions) could be fully realised in terms of the estimated costs in relation to the intended module objective of the project.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
			The approach of the project described in the module proposal with regard to the module objective to be achieved corresponds to the state-of-the-art under the given framework conditions.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate
	Standard	To what extent were more results achieved through cooperation / synergies and/or leverage of more resources, with the help of other ministries, bilateral and multilateral donors and organisations (e.g. co-financing) and/or other GIZ projects? If so, was the relationship between costs and results appropriate or did it even improve efficiency?	The project takes the necessary steps to fully realise synergies with interventions by other donors at the impact level.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
			Losses of efficiency due to insufficient coordination and complementarity with interventions of other donors are sufficiently avoided.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
			The project takes the necessary steps to fully realise synergies within German DC.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate
			Economic losses due to insufficient coordination and complementarity within German DC are sufficiently avoided.	Document analysis, survey, interviews	Document analysis, survey, interviews	moderate

			Combined financing has led to a significant expansion of impacts or this is to be expected.	non-applicable (no co-financing)	non-applicable (no co-financing)	moderate
			As a result of the combined financing, the overarching costs have not increased disproportionately in relation to the total costs.	non-applicable (no co-financing)	non-applicable (no co-financing)	moderate
			The partner contributions are commensurate with the costs of the project outputs.	Efficiency tool, survey, interview	Efficiency tool, survey, interview	moderate

OECD/DAC criterion SUSTAINABILITY (max. 100 points)

Assessment dimensions	**Filter – Project Type**	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
Prerequisite for ensuring the long-term success of the project: Results are anchored in (partner) structures. Max. 50 points	Standard	What has the project done to ensure that the results can be sustained in the medium to long term by the partners themselves?	Project documents / stakeholders verify actions that are expected to lead to sustainability of results	Document analysis, interviews, survey	Final report and progress reports, interviews with staff and partners, project team questionnaire	good
	Standard	In what way are advisory contents, approaches, methods or concepts of the project anchored/institutionalised in the (partner) system?	Project documents / stakeholders verify anchoring / institutionalisation of contents, approaches and concepts in the partner systems	Document analysis, interviews, survey	Final report and progress reports, interviews with staff and partners, project team questionnaire	strong
	Standard	To what extent are the results continuously used and/or further developed by the target group and/or implementing partners?	Project documents / stakeholders verify further use / development by the target group / implementing partners	Document analysis, interviews, survey, focus group discussions, observation	Final report, progress reports, project team questionnaire, interviews with GIZ project staff, partners and beneficiaries, focus group discussions with beneficiaries, field visits to Afar and Somali state	moderate
	Standard	To what extent are resources and capacities at the individual, organisational or societal/political level in the partner country available (long-term) to ensure the continuation of the results achieved?	Project's capacity building reports can verify the available capacities ant the individual, organisational or societal/political level	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, field visits to Afar and Somali state	good
	Standard	If no follow-on measure exists: What is the project's exit strategy? How are lessons learnt for partners and GIZ prepared and documented?	Project exit strategy is available and lessons learnt are documented and disseminated	Document analysis, interviews, survey	Final report, lessons learnt documentation, exit strategy documentation, project team questionnaire, interviews with project staff and partners (mainly focal point)	strong
	and Fragility	To what extent was the project able to ensure that escalating factors/dividers (1) in the context of conflict, fragility and violence have not been strengthened (indirectly) by the project in the long-term? To what extent was the project able to strengthen deescalating factors/connectors (2) in a sustainable way (3)?	No escalating factors are strengthened during project implementation If escalating factors are noticed, they were counteracted by the project	Data collection method focused on the addressed evaluation questions, no special design was needed: 1. projects reports, documents and national strategies analysis and collation, 2. clarification from project management and key decision-makers at GIZ and Ministry of Environment, 3 workshops and 4. interviews	Project reports, project offer, national strategies and fact sheets	good

				with key stakeholders, focus group		
Forecast of durability: Results of the project are permanent, stable and long-term resilient. Max. 50 points	Standard	To what extent are the results of the project durable, stable and resilient in the long-term under the given conditions?	The project results are considered durable, stable and resilient in the long-term under the given conditions	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, focus group discussions with partners and beneficiaries, field visits to Afar and Somali state	moderate
	Standard	What risks and potentials are emerging for the durability of the results and how likely are these factors to occur? What has the project done to reduce these risks?	No risks emerged If risks emerged, they were counteracted by the project	Document analysis, interviews, survey, focus group discussions, observation	Final report, interviews with GIZ project staff and partners, project team questionnaire, focus group discussions with partners and beneficiaries, field visits to Afar and Somali state	good

Additional evaluation questions

Assessment dimensions	**Evaluation questions**	**Evaluation indicators**	**Data collection methods** (e.g. interviews, focus group discussions, documents, project/partner monitoring system, workshop, survey, etc.)	**Data sources** (list of relevant documents, interviews with specific stakeholder categories, specific monitoring data, specific workshop(s), etc.)	**Evidence strength** (moderate, good, strong)
Additional **technical** evaluation questions	(1) Who conducted the feasibility studies on selection of sites for the WSW?	Feasibility study	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(2) How well characterised were the chosen sites?	Selection site	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(3) Were there hydrological and geomorphological information of the basins available or were any measurements taken e.g. to determine potential aquifers, water tables, GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded using such methods as hydrological frequency analysis software, estimations of minimum rainfall required to initiate flood flows (for early warning purposes for example)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(4) During the testing of the WSW what was measured?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
	(5) Were water quality and amounts measured or estimated (e.g. for health and sanitation, nutrients in the floodwaters, potential risks such as excessive minerals, water pH)?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong

(6) Have groundwater measurements been taken (water table depths, potential aquifers under the WSW sites)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(7) Have there been attempts at estimating the water balances at the WSW in terms of how much is captured through infiltration, productive use and ongoing flows out of the basins?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(8) Was deposition of silt measured?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(9) Are there estimates of how much water is required for different land use options (crops, fodder, domestic water supplies) at each WSW? What can be said about available water capacities with regards to productive use?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(10) Are there estimates of how much water can infiltrate the soil, raise water tables and be stored as a drought resilience mechanism? For example, can the captured water be estimated and related to predicted droughts in terms of maintenance of productive use, domestic water requirements?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(11) Have there been attempts to estimate what the extra water can be most effectively used for? For example an additional use of 1 m3 of water used in evapotranspiration (i.e., passage through plants) could produce an extra 1.7 kg of maize, 1.5 kg of sorghum. Similarly, an increase in plant water use of just 25 mm could increase yields of maize and sorghum by 38 and 58% respectively.	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(12) Is there enough data to estimate the costs of capturing a cubic metre of water used for crop production?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(13) Have the benefits of increased production been quantified in terms of increased income?	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong
(14) Have the benefits of increased production per unit of land area been quantified in terms of additional job creation both on-site and potentially off-site through retailing sectors (agricultural inputs, machinery, food markets, etc.)	GIS mapping for soils, slopes, digital elevation models, precipitation measurements, rainfall intensities, storm events recorded, current satellite-based data	Document analysis, survey, interviews, field visits / observation, focus group discussions	Progress reports, project monitoring data, interviews with project team and partners, assessment of partner products, project team questionnaire, field visits to Afar and Somali state, FGDs with final beneficiaries	strong

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