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**STRATEGIC COUNTRY CLUSTER EVALUATION:
GEF SUPPORT TO DRYLANDS COUNTRIES
VOLUME 2 – TECHNICAL DOCUMENTS**

(Prepared by the Independent Evaluation Office of the GEF)

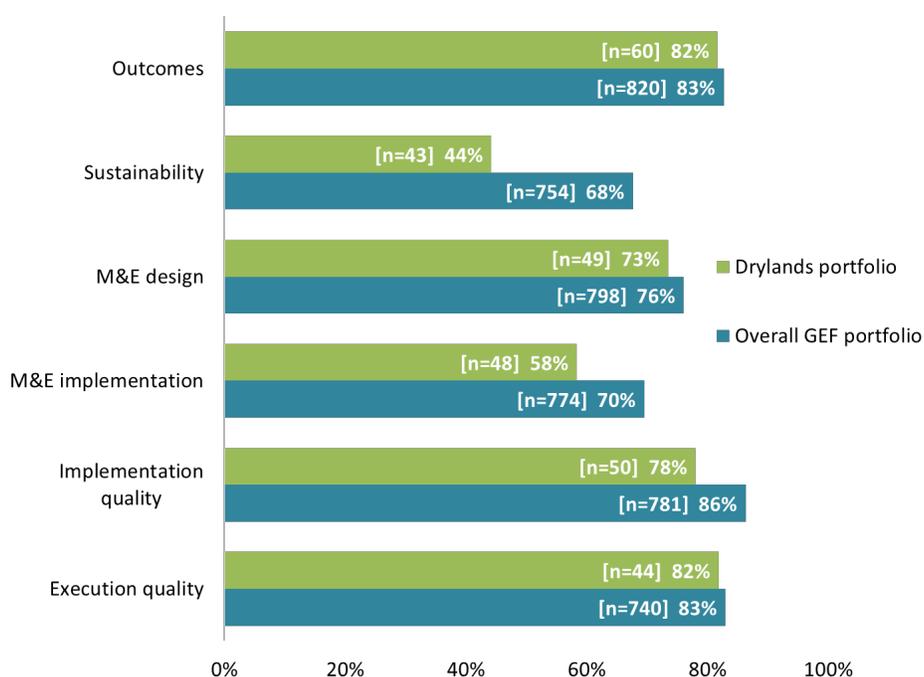
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TECHNICAL DOCUMENT 1 - PERFORMANCE ANALYSIS

Analysis of terminal evaluation ratings from the most recent IEO Annual Performance Report (APR) 2021 database shows that projects in the Drylands evaluation portfolio underperformed when compared with the overall GEF portfolio (Figure 1).

Figure 1. Percentage of (GEF4, GEF5 & GEF6) projects with performance ratings in the *satisfactory/likely* range



Note: The "n" count excludes projects with no rating available in APR 2021 dataset

Source: own elaboration based on GEF IEO APR 2021 database

Focusing on the two dimensions of interest to this evaluation—project outcomes and the likelihood of their sustainability (See Table 1 and Table 2 for further details):

- 82% of projects were rated as having outcomes in the satisfactory range¹. This is slightly lower than the overall GEF portfolio (83% of projects), although the difference between these cohorts is not statistically significant. It is important to remark that the Drylands portfolio underperformance in terms of outcomes is explained by the GEF-4 cohort of projects - 76% of GEF-4 projects in the evaluation portfolio were in the positive range, compared to 81% in the overall GEF portfolio.

¹ This range includes three ratings: moderately satisfactory, satisfactory, and highly satisfactory.

- Ratings for the likelihood of sustainability of outcomes at project closure followed a clearer pattern: only 44% of projects in the evaluation portfolio were rated in the *likely* range for sustainability², compared to 68% of the overall GEF portfolio, with such difference being statistically significant (i.e., the p-value for the sustainability differ, $p < 0.0005$.)
 - Land degradation (LD) and Climate Change (CC) projects in the evaluation portfolio performed better on outcomes but lower on sustainability. A larger percentage of LD (85%) and CC (86%) projects were rated as having satisfactory outcomes in the evaluation portfolio, compared to 83% and 80% (respectively) in the overall GEF portfolio. Instead, MF projects in the evaluation portfolio performed worse (75% in the satisfactory range) when compared to MF projects in the overall GEF portfolio (83%). When looking at sustainability, LD, CC, and MF projects in the evaluation portfolio had a lower average performance when compared to the GEF overall portfolio. None of these differences in effectiveness and sustainability average ratings at the focal area level are statistically significant.
 - Africa and Asia projects in the evaluation portfolio performed better on outcomes but lower on sustainability. A larger percentage of Africa (80%) and Asia (100%) projects were rated as having satisfactory outcomes in the evaluation portfolio, compared to 78% and 85% (respectively) in the overall GEF portfolio. Instead, LAC and ECA projects in the evaluation portfolio performed worse (67% and 75% in the satisfactory range, respectively) when compared to projects in the overall GEF portfolio (80% and 86%). When looking at sustainability, projects from all regions in the evaluation portfolio had a lower average performance when compared to the GEF overall portfolio. Only the difference between the Asia cohorts is statistically significant for both effectiveness and sustainability.
 - MSPs performed better than FSPs within the evaluation portfolio and when compared to the GEF overall portfolio. All the MSP projects in the evaluation portfolio were in the positive range regarding outcomes, above FSP drylands projects (79%) and GEF overall portfolio MSP projects (83%). Both differences are statistically significant.
- Performance on effectiveness and sustainability based on the aridity classification of the projects in the Drylands evaluation portfolio was also examined. Given the small size of the sample (only 52 and 36 national projects in the evaluation portfolio have outcome and sustainability ratings available, respectively), projects were grouped into two broad categories, based on the intervention areas: projects in "hyper-arid, hyper-arid & arid, or arid areas" (n=25) and projects in "arid & semi-arid, semi-arid, or dry sub-humid areas" (n=27). Projects in "hyper-arid, hyper-arid & arid, or arid areas" were found to perform better on effectiveness (88% in the positive range, compared to 81% for projects in "arid & semi-arid, semi-arid, or dry sub-humid areas") but lower on sustainability (35% and 47%, respectively). None of these differences were found to be statistically significant.

² This range includes two ratings: moderately likely to be sustained and likely to be sustained.

Table 1. Percentage of (GEF4, GEF5 & GEF6) projects in the evaluation portfolio and in the GEF overall portfolio with outcome ratings in the satisfactory range³

Average effectiveness (% of ratings in the <i>positive</i> range)											
		Size		Focal Area			Region				Total
		MSP [n=7]	FSP [n=53]	LD [n=33]	CC [n=7]	MF [n=20]	AFR [n=40]	Asia [n=9]	LAC [n=3]	ECA [n=8]	
Drylands [n=60]	GEF - 4 [n=33]	100%	70%	80%	50%	67%	75%	100%	50%	0%	76%
	GEF - 5 [n=26]	100%	88%	100%	100%	79%	88%	100%	100%	83%	88%
	GEF - 6 [n=1]	-	100%	-	100%	-	-	-	-	100%	100%
	Total	100%	79%	85%	86%	75%	80%	100%	67%	75%	82%
		Size		Focal Area			Region				Total
		MSP [n=317]	FSP [n=499]	LD [n=54]	CC [n=267]	MF [n=122]	AFR [n=235]	Asia [n=227]	LAC [n=157]	ECA [n=122]	
GEF overall portfolio [n=820]	GEF - 4 [n=598]	81%	82%	74%	80%	81%	79%	83%	77%	87%	81%
	GEF - 5 [n=214]	86%	87%	100%	80%	84%	77%	87%	90%	84%	86%
	GEF - 6 [n=8]	100%	0%	100%	100%	100%	67%	100%	-	-	88%
	Total	83%	83%	83%	80%	83%	78%	85%	80%	86%	83%

Source: GEF/IEO based on the Annual Performance Review dataset 2021

³ Note: The "n" count excludes projects with no rating available in APR 2021 dataset

Table 2. Percentage of (GEF4, GEF5 & GEF6) projects in the evaluation portfolio and in the GEF overall portfolio with sustainability ratings in the likely range

Average sustainability (% of ratings in the <i>likely</i> range)											
		Size		Focal Area			Region				Total
		MSP	FSP	LD	CC	MF	AFR	Asia	LAC	ECA	
		[n=5]	[n=38]	[n=27]	[n=6]	[n=10]	[n=25]	[n=8]	[n=2]	[n=8]	
Drylands [n=43]	GEF - 4 [n=25]	50%	43%	47%	50%	25%	50%	40%	0%	0%	44%
	GEF - 5 [n=17]	100%	38%	38%	33%	50%	29%	33%	100%	50%	41%
	GEF - 6 [n=1]	-	100%	-	100%	-	-	-	-	100%	100%
	Total	60%	42%	44%	50%	40%	44%	38%	50%	50%	44%
		Size		Focal Area			Region				Total
		MSP	FSP	LD	CC	MF	AFR	Asia	LAC	ECA	
		[n=297]	[n=453]	[n=46]	[n=252]	[n=101]	[n=206]	[n=211]	[n=144]	[n=119]	
GEF overall portfolio [n=754]	GEF - 4 [n=560]	65%	69%	52%	74%	60%	58%	76%	64%	70%	68%
	GEF - 5 [n=187]	74%	60%	67%	63%	65%	55%	72%	59%	68%	67%
	GEF - 6 [n=7]	83%	-	100%	75%	100%	50%	100%	-	-	86%
	Total	68%	67%	59%	71%	62%	57%	75%	63%	70%	68%

Source: GEF/IEO based on the Annual Performance Review dataset 2021

TECHNICAL document 2 - Online SURVEY RESULTS

The online survey for this evaluation was open between May 27 and July 6, 2023, and was sent to 319 country-level respondents that are representatives from country governments, this is, all GEF operational and political focal points and convention national focal points for the CBD, the UNCCD, and the UNFCCC. The survey had 81 responses⁴ in total, for a response rate of 25 percent.

Q1. Which of the following options describe your function? (Check all options that apply)

Function	No.	Percent
GEF operational focal point	19	23%
GEF political focal point	3	4%
Convention focal point (CBD, UNCCD, UNFCCC)	48	59%
Other	5	6%
More than one role	6	7%
Total respondents	81	100%

Source: GEF/IEO based on Stakeholder Survey review

Q2. How long have you been involved with GEF programming in your country?

Length of involvement with GEF programming	No.	Percent
Less than 1 year	16	20%
1-2 years	8	10%
3-5 years	15	19%
More than 5 years	42	52%
Total respondents	81	100%

Source: GEF/IEO based on Stakeholder Survey review

⁴ Responses are counted if at least one of the options for questions 4, 5 or 6 of the survey was checked by the respondent.

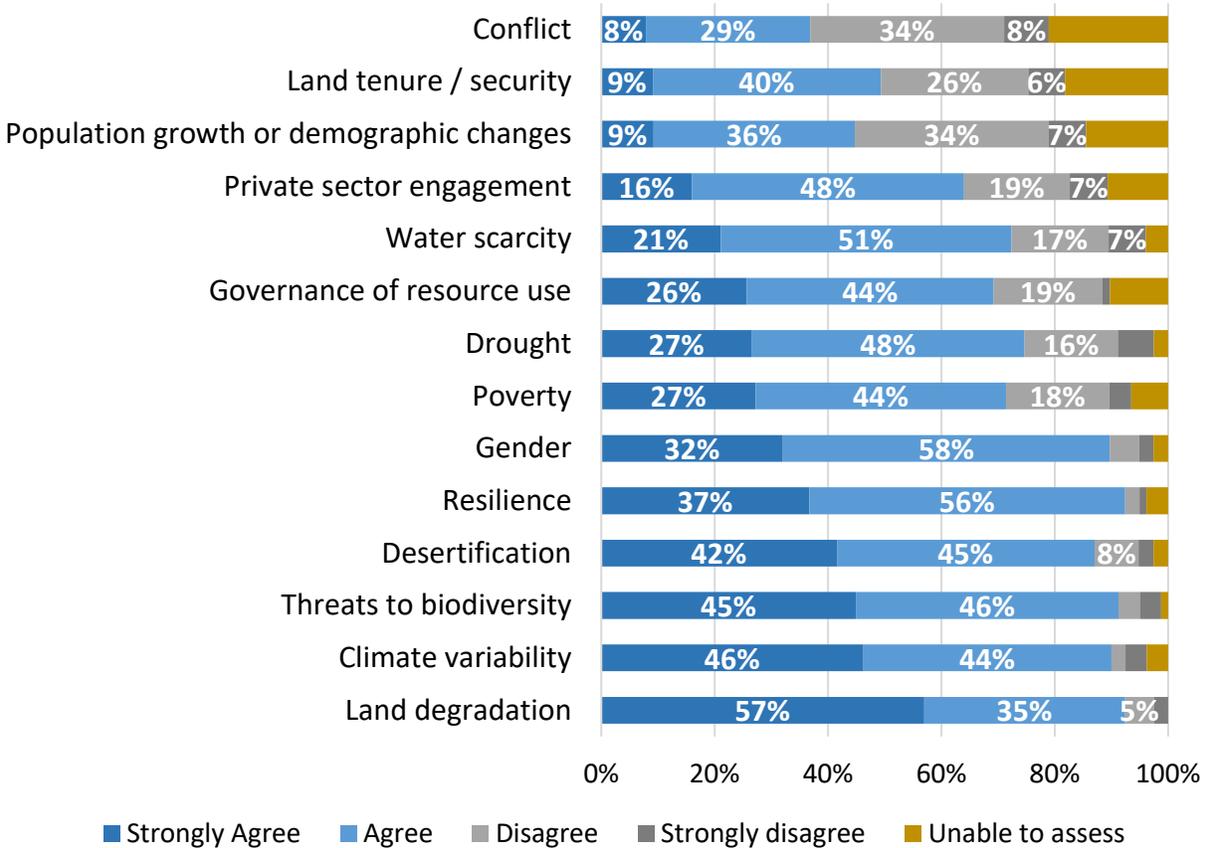
Q3. In which region are you located?

Region	No.	Percent
Africa	53	65%
Eastern Europe and Central Asia	8	10%
Asia and the Pacific	11	14%
Latin America and the Caribbean	9	11%
Total respondents	81	100%

Source: GEF/IEO based on Stakeholder Survey review

Q4. Please indicate your agreement with the following statements - "GEF programming in dryland areas of my country has adequately considered" (n=72):

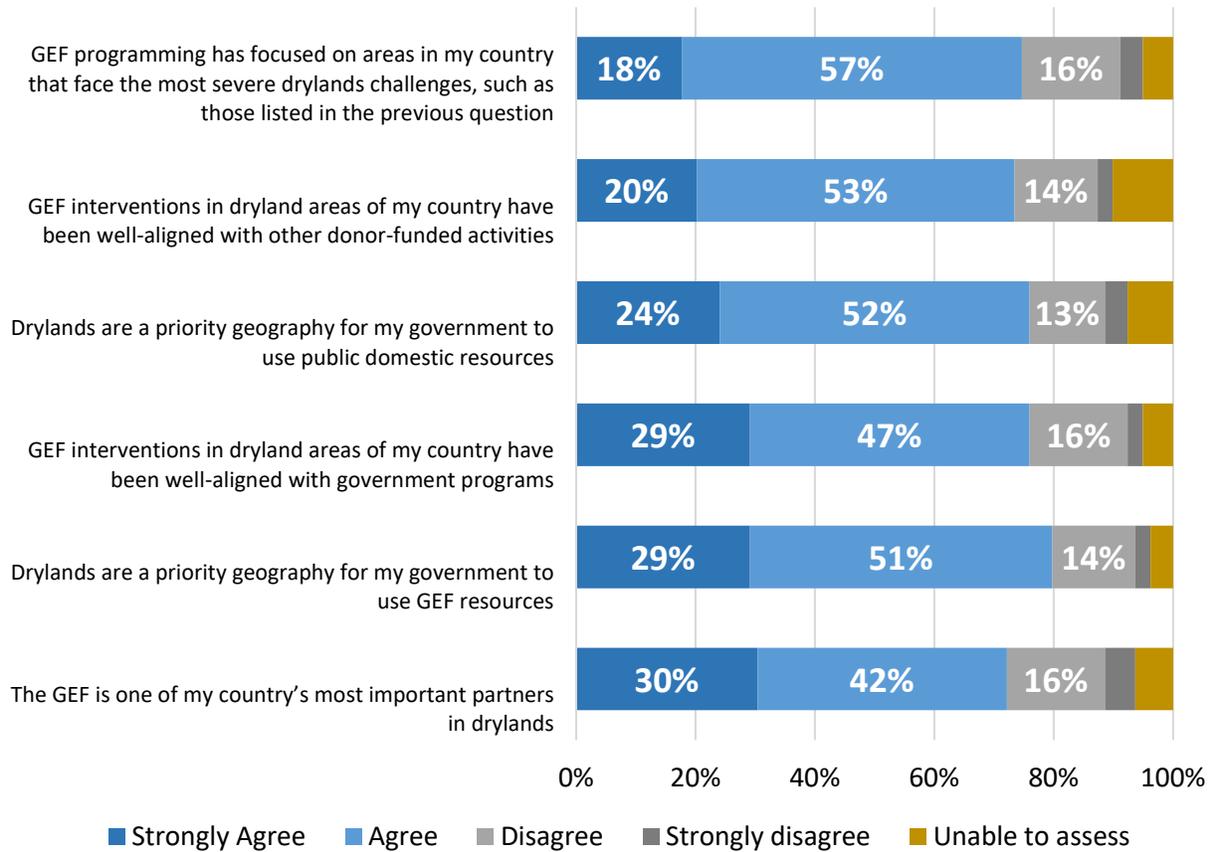
- Land degradation (92%), threats to biodiversity (91%), climate variability (90%) and desertification (87%) are the environmental challenges whose adequate consideration within GEF programming collect the highest levels of agreement ("agree" and "strongly agree" responses) among country-level respondents. In addition, resilience (92%) and gender (90%) are the most outstanding cross-cutting issues.
- On the other hand, conflict (42%), population growth (39%), and land tenure (32%) are the factors whose adequate consideration within GEF programming reflects the highest levels of disagreement ("disagree" and "strongly disagree" responses).



Source: GEF/IEO based on Stakeholder Survey review

Q5. To what extent do you agree with these statements? (n=79):

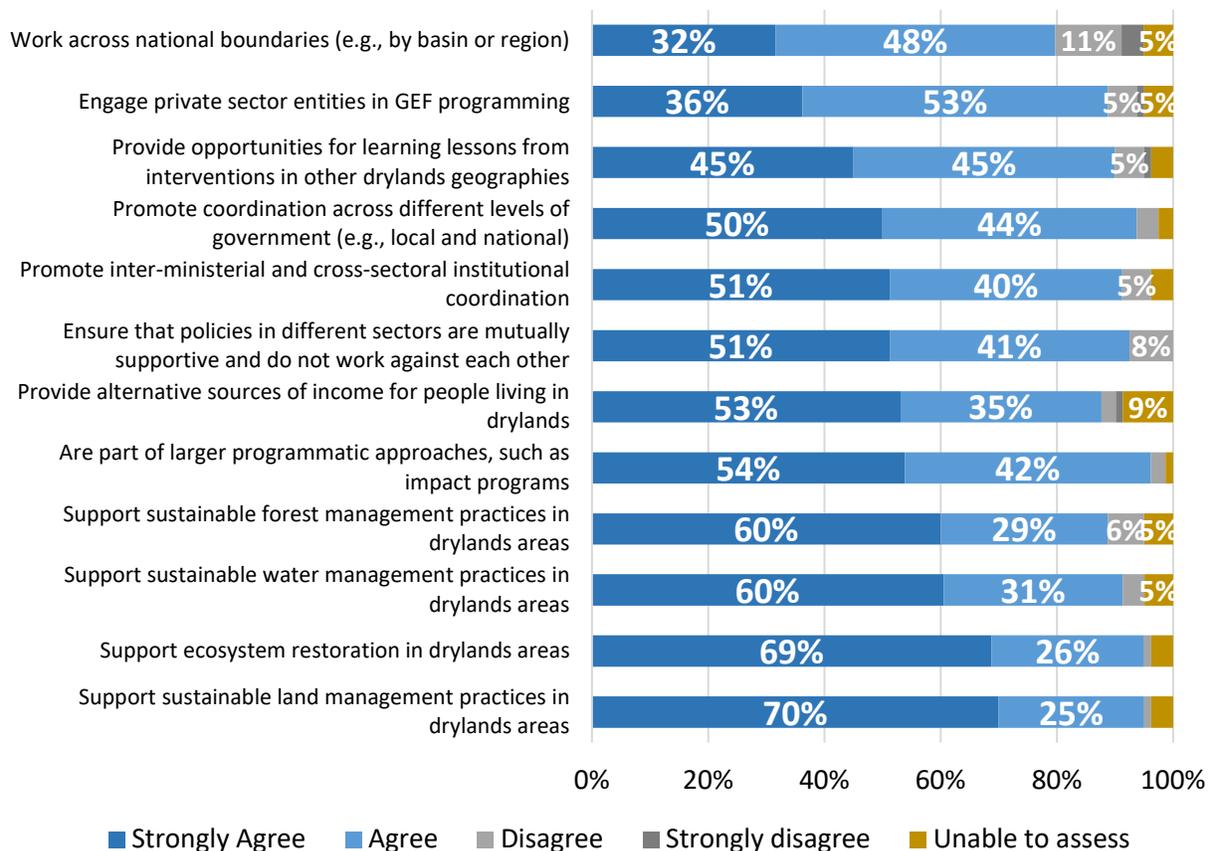
- Degree of agreement (“agree” or “strongly agree”) with the statements below is well above two thirds in all cases; with “drylands are a priority geography for my government to use GEF resources” being the statement with highest level of agreement (80%), and “the GEF is one of my country’s most important partner in drylands” being the statement with lowest level of agreement (72%).



Source: GEF/IEO based on Stakeholder Survey review

Q6. Please indicate your agreement with the following statements - "To achieve environmental goals in dryland areas of my country, the GEF should provide more support for interventions that...": (n=80):

- All statements yield very high levels of agreement; with responses on the “agree” range averaging 91%. Based on the responses collected, the most outstanding opportunity areas to achieve environmental goals are related to the GEF providing more support for interventions that “are part of larger programmatic approaches, such as impact programs” (96%), “support ecosystem restoration in dryland areas” (95%) and “Support sustainable land management practices in drylands areas” (95%).
- On the other hand, the need to further “work across national boundaries (e.g., by basin or region)” to achieve environmental goals is the opportunity area that yields the highest level of disagreement (15%).



Source: GEF/IEO based on Stakeholder Survey review

TECHNICAL DOCUMENT 3 - PROJECT REVIEW ANALYSIS

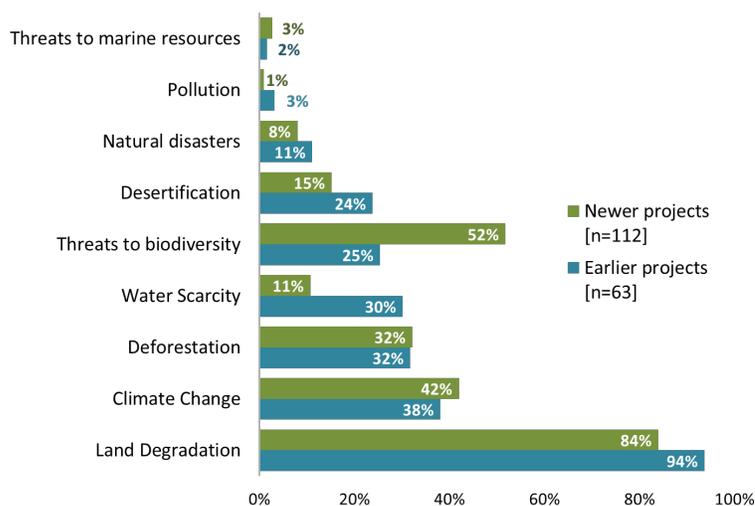
Relevance – Alignment and Coherence

- All earlier (n=63) and newer (n=112) projects described alignment with national government’s development and/or environmental priorities, operational strategies and/or plans.
- Among earlier projects, 70% discussed support to or interaction with countries’ environmental legislation; such share is slightly higher (77%) among newer projects.
- Rio Conventions:
 - **78% of earlier projects** discussed alignment with at least one of the Rio Conventions (UNFCCC, UNCBD, UNCCD), the most cited convention being the UNCCD (63%), followed by UNFCCC (44%) and UNCBD (30%).
 - **71% of newer projects** discussed alignment with at least one of the Rio Conventions (UNFCCC, UNCBD, UNCCD). The most cited convention being the UNCCD (54%), followed by UNFCCC (43%) and UNCBD (43%). Other relevant Conventions referred to within this cohort of projects are the RAMSAR Convention on Wetlands, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- 63% of earlier projects and 57% of newer projects referred to the existence of GEF strategies linking GEF investments to a programmatic portfolio addressing dryland environmental and socioeconomic issues.
 - The most frequently mentioned programmes are the TerrAfrica framework and its Strategic Investment Program for Sustainable Land Management (SLM) in Sub-Saharan Africa (SIP Program), which aims to optimize natural resource use at the landscape level by integrating and implementing SLM across sectors; the Sahel and West Africa Program (SAWAP) in Support of the Great Green Wall Initiative (GGWI), which aims to expand Sustainable Land and Water Management in targeted landscapes and in climate vulnerable areas in West African and Sahelian countries; and the GEF regional Sustainable Land Management Initiative “Central Asian Countries Initiative for Land Management” (CACILM), which aims to combat land degradation and improve rural livelihoods in the Central Asian Countries.
 - Among newer projects (i.e., GEF-6 and GEF-7), besides the SIP Program and the SAWAP in support of the GGWI, linkages are also described with the Food Systems, Land Use and Restoration (FOLUR) Impact Program (IP); the Dryland Sustainable Landscapes (DSL) Impact Program; The Restoration Initiative (TRI) and the Integrated Approach Programme (IAP) on Food Security (IAP-FS) (also known as the Resilient Food Systems -RFS- program).
- 86% of earlier projects discussed interactions between the GEF project and other GEF funded projects in the project area or country, while 84% discussed interactions with other donor-funded projects. These shares are 80% and 74%, respectively, among newer projects.

Relevance – Environmental challenges and Natural resources governance

- All earlier (n=63) and newer (n=112) project documents included references to specific environmental challenges which were intended to be addressed by the projects' objectives, components and/or activities. Land degradation is the most frequently referred challenge (94% and 84% of earlier and newer projects, respectively, referred to it). Other commonly mentioned challenges are climate change, deforestation, water scarcity, threats to biodiversity, and desertification (See Figure 1 below). There are no major differences between the cohorts, except for “threats to biodiversity”, which is more frequently mentioned by newer projects (54%) compared to earlier projects (25%); and “water scarcity”, mentioned by 30% of earlier projects compared to 11% among newer projects.

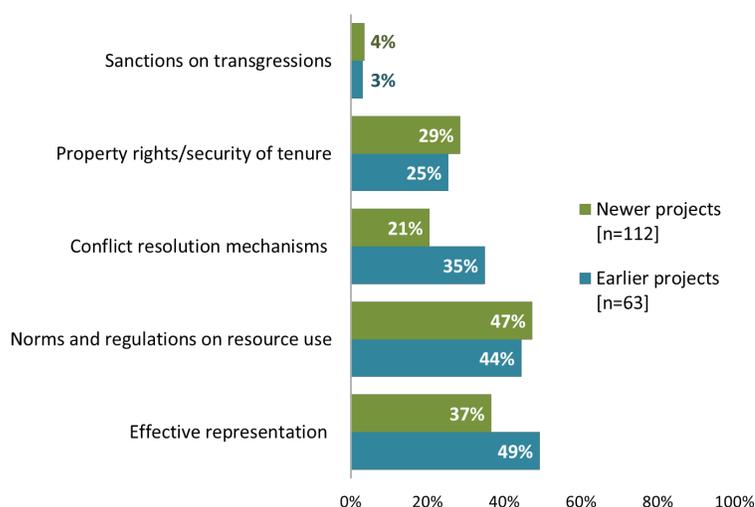
Figure 1. Environmental challenges aimed to be addressed in the evaluation portfolio's projects (as % in total)



Source: GEF/IEO based on projects' documents review

- 75% and 70% of earlier and newer projects, respectively, aimed to influence at least one of the aspects of natural resource governance. The main ones being the “effective representation in decisions of the interests of different stakeholder groups”, and the “existence and application of negotiated norms and regulations on resource use”. (See Figure 2 and Box I for further details and examples).

Figure 2. Natural resource governance aspects sought to be influenced by the evaluation portfolio's projects (as % in total)



Source: GEF/IEO based on projects' documents review

Box 1. Examples of projects seeking to influence natural resource governance.

Effective representation in decisions of the interests of different stakeholder groups

- **ID 3379 (Mauritania, earlier):** This project focused on combating desertification, protecting the ecosystem functions and productivity, and improving the livelihoods of the rural poor in the oases of Mauritania. To ensure effective participation of all stakeholders and a bottom-up natural resources management approach, the project's activities promoted the further empowerment and capacity of local associations and local municipalities (Communes) for participatory management of oasis as well as to become full partners in the use and management of natural resources (Project document, p. 20).

Existence and application of negotiated norms and regulations on resource use

- **ID 5083 (Kenya, newer):** This project aims at delivering multiple biodiversity, climate change adaptation and livelihood benefits through participatory forest management in the Kirisia Forest. Among its intended outputs, the project expects to facilitate the Samburu community groups to formulate bio-cultural community protocols (BCPs) to increase their capacity to drive the local implementation of international and national environmental laws. The (BCP) will be based on communities' consultative processes to outline their core ecological, cultural, and spiritual values and customary laws relating to their natural resources and indigenous knowledge, based on which they will provide clear terms and conditions to regulate access to their knowledge and resources (Project document, p. 58).

Conflict resolution mechanisms (e.g., mediation, arbitration, litigation)

- **ID 3450 (Iran, earlier):** This project focused on removing barriers (including weak participation and cross-collaboration, unsustainable practices, and lack of sustainable alternatives to resource use) to participatory integrated sustainable land and forest management in Iran. The project document acknowledged that differences of opinion among participants in the planning process would be inevitable, particularly if management regimes for natural resources were to be changed. Therefore, the project emphasized the design of a participatory planning process. This included the coordination of training courses and mechanisms for conflict resolution at the village, province, and national levels (Project Document, p. 41-42).

Property rights and security of tenure

- **ID 10222 (Moldova, newer):** This project aims at supporting and scaling up the introduction of innovative climate-smart agriculture practices and sustainable forest and land management to achieve land degradation neutrality (LDN) in Moldova. Among its participatory land use planning activities, the project will carry out an assessment of all types of land to set LDN targets and plan interventions. This assessment involves the clarification of legal and tenure issues, building on newer FAO support to Farmer Field Schools as well as on the FAO Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the context of National Food Security (VGGT) (Project document, p.17).

Sanctions on transgressions of norms or regulations

- **ID 10356 (Uzbekistan, newer):** This project objective is to enhance the resilience and sustainability of landscapes and livelihoods in the Aral basin, and progress LDN, through integrated resource management. Among its outputs, the project plans to introduce a monitoring and enforcement system for spatial and land use planning, providing land inspectors with protocols to monitor LDN. The project also intends to identify the roles and responsibilities of the government institutions involved in territorial planning and define enforcement based on their functional roles. The system will have sanctions attached, based on the current Land Code (1998) and the rules for rational land use (Project Document, p. 26).

Global Environmental Benefits

- Among earlier projects (n=63), reporting on GEBs is weak and non-systematic. At design, most earlier projects (67%) referred to GEBs broadly and mostly in qualitative terms, among which one fourth also included some quantitative expectations (e.g., tons of carbon sequestration, hectares of land restored/reforested/protected/sustainably managed). At completion, a similar pattern is found, with 71% of projects reporting some sort of progress in environmental outcomes or GEBs (e.g., carbon sequestration, hectares of land restored/reforested/protected/sustainably managed). It is not possible to systematize/aggregate such progress across projects.
- Among newer projects (n=112), 91% reported GEBs expectations at design. 97 out of the 102 projects that reported on GEBs included quantitative targets. It is important to highlight that almost 90% of newer projects correspond to GEF-6 or GEF-7 cycles, where design documents request systematic reporting on project's target contributions to global environmental benefits. Among GEF 7 projects, the most frequently mentioned GEBs are "Area of land restored (million hectares)", "Area of landscapes under improved practice", and "Greenhouse Gas Emissions Mitigated". Among GEF 6 projects, these are "sustainable land management in production systems", "supporting transformational shift toward a low-emission and resilient development path", and "maintaining globally significant biodiversity and ecosystem goods and services".

Effectiveness

- **71% of earlier projects (n=63) reported having achieved at least some positive environmental outcomes, changes, or trends.** 54% reported positive changes that were related to land degradation; 29% to deforestation; 25% to climate change; 21% to water scarcity and 17% to threats to biodiversity (See Box II for examples). This is in line with the main environmental challenges that were intended to be addressed, at design.

Box 2. Examples of projects that were on the positive range for effectiveness and which reported positive environmental changes at completion.

Land degradation

- **ID 2794 (Ethiopia):** This project focused on reducing land degradation in agricultural landscapes and improving the agricultural productivity of smallholder farmers living in 35 large watersheds assisted by the project. At completion, a study to determine the vegetation cover (using the NDVI methodology), showed an increase of 9.1% in the intervention areas over the period 2009-2013 suggesting that gradual plant regeneration and consequent reduction of land degradation had occurred because of the project. In addition, a study conducted to measure the change in carbon content of soils in 15 project supported watersheds showed that during the period 2009-2013, the average carbon content in sampled soils increased from 1.87% to 2.45% providing an indication of the overall improvement in soil conditions. The positive trends and correlations in NDVI and soil carbon content values suggested that SLM practices applied on farmlands and communal areas had improved the ecological functions and agricultural productivity potential throughout the targeted landscapes (Terminal Evaluation, p. 9)

Deforestation

- **ID 5215 (Benin):** The objective of the project was to assist Benin in its effort to lay the foundation for a collective integrated ecosystem management system for its forests and adjacent lands. At completion, the terminal evaluation reported lower rates of deforestation and degradation within gazetted forests in the project zone compared to the rest of the country (2.8% and 3.7%, respectively) (Terminal Evaluation, p. 22).

Climate Change

- **ID 4642 (Uzbekistan):** This project focused on fostering the introduction of selected renewable energy and energy efficiency technologies of relevance to agri-businesses and farms and on strengthening capacity for improving degraded irrigated land and water conservation in the project area. An independent scientific assessment at project completion found that when all installed equipment was in full operation, an estimated reduction of 39 million tons of Carbon Dioxide equivalent (tCO₂ eq) over 20 years was expected to be achieved, well above the target set at the baseline of 3.3 million tCO₂ eq over the lifetime of the project investments. (Terminal evaluation review, p. 7).

Water scarcity

- **ID 5229 (Lebanon):** This project aimed at promoting sustainable land and natural resource management to land degradation, maintain ecosystem services, and improve livelihoods in the Qaroun Catchment. In the context of the project and with the objective of promoting the rational use of surface water (to limit groundwater abstraction) and rainwater harvesting irrigation canals were implemented and rehabilitated in 7 villages in the project area, over a total length of 37 km covering a total area of agricultural lands of 6,277 ha and benefiting over 5,700 farmers (Terminal Evaluation, p. 23).

Threats to biodiversity

- **ID 3368 (Gambia):** This project promoted the development of innovative sustainable land management technologies and community-based participatory watershed/landscape management planning approaches in Gambia's upland and lowland ecosystems. To address human-wildlife conflicts, anti-hippo barriers were constructed in 8 communities. In addition, the improved vegetative cover (898 ha) in degraded woodland and rangelands (appraisal target of 600ha) and the achievement of 3,738 ha of improved vegetative cover and restoration in habitat diversity in 13 protected areas (against an appraisal target of 1,500 ha) has enhanced habitat provision for rare and endangered species of global importance as well as spawning and nursery ground for fish and birds.

- **83% of earlier projects (n=63) reported having achieved at least some positive socioeconomic outcomes, changes, or trends.** 51% reported positive changes that were related to income generation and/or diversification; 37% to gender equality and women's empowerment; 19% to civil society engagement and development, 19% to access to communal services and 16% to food security (See Box III for examples).

Box 3. Examples of projects that were on the positive range for effectiveness and which reported positive socioeconomic changes at completion.

Income generation and/or diversification

ID 3382 (Niger): This project focused on improving Rural Communes' capacity to design and implement in a participatory manner Communal Development Plans (CDP) and Annual Investment Plans (AIP) and therefore contributing to enhance rural livelihoods. Under component 2, the project sought to channel grants to communes and grassroots communities to support socioeconomic microprojects as well as activities to generate income and manage land and other natural resources. At completion, the incomes of roughly 75% of beneficiaries (against an appraisal target of 60%) of the 627 economic microprojects financed under such component were reported to have increased by more than 30 percent. (Terminal evaluation, p. 14)

Gender equality and women's empowerment

- **ID 5449 (Senegal):** The project aimed at developing inclusive commercial agriculture and sustainable land management through investments in infrastructure (irrigation in particular), technical assistance to key public institutions (rural communities in particular), and support to the private sector (including smallholders) all along the agribusiness value chains. The project made deliberate effort to ensure women's representation in various organs, including the Land Conflict Management Committees, the Technical Support Committees for Securing Land and the Land Use and Allocation Plan Management Committees. Also, by design, women's access to developed land (which included secondary and tertiary canal works) were expected to be about 10%, against less than 1% in a without-project scenario. Under matching grants, women represented nearly 60% of the members of Economic Interest-based Groups that received funding. As a result, the number of jobs created for women was 2,298 (out of a project revised target of 2,200) (Terminal evaluation, p. 12).

Civil society engagement and development

- **ID 3608 (China):** This project focused on piloting more effective and innovative ways of providing poverty reduction assistance to the poorest communities and households through Community Driven Development (CDD) and participatory approaches. At completion, the project was reported to have been one of the more successful operations piloting CDD approaches in poverty reduction. The introduction of the CDD approach gave poor rural communities the opportunity to collectively manage project resources and take ownership of development. Several community level groups, such as project decision making committees and supervision committees, and implementation and monitoring groups at the natural village level, were established and were still functioning well at the end of the intervention (Terminal Evaluation, p. 20).

Access to communal services

- **ID 3529 (Djibouti):** The project aimed at improving the living conditions of pastoral communities through targeted investments and participatory integrated natural resources management in Djibouti. Among its activities, the project aimed at establishing surface water management measures to meet the water needs of the community and its herd. At completion, it was reported that water was available to all the target households, due to the construction of water storage facilities (ponds) and underground tanks with a dedicated system for storing rainwater, with gabion walls or dams (Terminal evaluation, p. 26).

Food security

- **ID 3370 (Kenya):** This project aimed at providing land users and managers with the enabling policy environment, institutional, financial incentives, and capacity for effective adoption of SLM in four agropastoral districts of Kenya. The project contributed to enhance agricultural productivity through the introduction of conservation agriculture strategies and drought tolerant crops, which led to an increased food availability in the pilot areas. Over 1700 households had adopted improved farming practices and at least a 50% increase in agricultural produce for those adopting drought tolerant crops had been reported. In addition, dependence on food handouts decreased by 40 % amongst households in the target sub-counties. (Terminal evaluation, p. 47-48)

- **95% of earlier projects (n=63) reported having achieved some positive capacity, institutional and/or governance outcomes, changes, or trends.** 63% reported positive changes that were related to capacity and skills development; 44% to Knowledge management, information-sharing, and systems; 33% to development of plans, policies, codes, covenants, laws and regulations; 32% to institutional and decision-making processes, structures and systems and 27% to awareness raising (See Box IV for examples).

Box 4. Examples of projects that were on the positive range for effectiveness and which reported positive capacity, institutional and/or governance changes at completion.

Capacity and skills development

- **ID 5699 (Kazakhstan):** The project aimed at transforming land use practices in steppe and semi-arid zones of Kazakhstan to ensure ecological integrity, food security and sustainable livelihoods. Capacity building was an important aspect of the project's strategy. Institutional and individual capacities were enhanced through learning-by-doing and skills development as part of the demonstration activities, as well as delivery of trainings, and strengthening partnerships, including through participation at agricultural exhibitions in some European and Central Asian countries. Training covered topics related to good farming and livestock raising practices, land and livestock productivity enhancing technologies. Over 18 training modules were developed, and 2,000 participants took part in the capacity building events of the project. (Terminal evaluation, p. iv)

Knowledge management, information-sharing and systems

- **ID 5463 (Tanzania):** The project aimed at promoting sustainable land and natural resource management to alleviate land degradation and improve livelihoods in the Ruvu and Zigi catchments of the Eastern Arc Mountains, Tanzania. In such context, the project developed Integrated Land Use Management Plans and Village Land Use Management Plans to ensure optimal allocation of land. As part of those activities, the project reported that a GIS-based LD/SLM database and land-use decision support-tool/system had been put in place and was being used at least by 50% of land use planning officers, while front line extension workers and community associations were trained in the use of the decision-support tool to strengthen land use planning and develop land use maps. (Terminal evaluation, p. 61).

Development of plans, policies, codes, covenants, laws and regulations

- **ID 6960 (Turkmenistan):** This project supported climate resilient livelihoods in agricultural communities in Lebap and Dashoguz veloyats in Turkmenistan. One key mechanism to achieve that was the design and adoption of Local Adaptation Plans (LAPs) for six farmers' associations and two livestock farms. At completion, it was reported that LAPs continued to be under implementation, through grant means provided by the project as well as own means, with

targeted assistance provided by the local project team (Terminal evaluation, p. 72). Another area of significant contributions of the project was the development of policy documents and legal instruments. For example, Turkmenistan's National Strategy on Climate Change (NCCST) adopted in 2012 was revised with project support and adopted in 2019. In addition, the project supported the drafting of key pieces of legislation related to climate change adaptation – e.g., Law of Land Cadastre, Land Code, amendments to Law on Farmers' Associations and Law on Farmers Societies (Terminal evaluation, p. 77).

Institutional and decision-making processes

- **ID 5436 (Niger):** The project focused on improving Niger's resilience to natural hazards through selected disaster risk management interventions in targeted project sites and strengthening of Government's capacity to respond promptly and effectively to an eligible crisis or emergency. At completion, the project reported improvement in the capacity, the equipment, the ability to mobilize resources, the provision of timely information of the five key national institutions involved in Early warning and disaster management. The project also provided training and technical support to each institution for improved preparedness and response planning, and interinstitutional collaboration and coordination in terms of information and data sharing, and the establishment of coordination protocols for disaster preparedness and response. (Terminal evaluation, p. 17)

Awareness raising

- **ID 5270 (Mali):** The project aimed at fostering the adoption of sustainable land and water management practices in targeted areas in Mali. The terminal evaluation reported that the public had been sensitized to the impacts of climate change and the need to adopt sustainable land and water management (SLWM) practices to preserve biodiversity and prevent the degradation of ecosystems. The project implemented a comprehensive media campaign that was built around nearly 10,000 radio messages, strategic messaging in public debates, sketches on climate change and SLWM, film documentaries about the project and key achievements translated into multiple languages, and various print material distributed across 30 project communes. (Terminal Evaluation, p. 18-19)
-
- **30% of earlier projects (n=63) reported linkages between activities that were directed towards influencing natural resource governance arrangements, and the achievement of positive environmental, socioeconomic and/or institutional changes.** 16% reported positive changes that were related to the effective representation in decisions of the interests of different stakeholder groups; 13% to the existence and application of negotiated norms and regulations on resource use; 10% to property rights or security of tenure; and 8% to existence of conflict resolution mechanisms (e.g., mediation, arbitration, litigation) (See Box V for examples).

Box 4. Examples of projects that reported positive linkages between activities directed towards influencing natural resources governance arrangements, and the achievement of positive environmental, socioeconomic and/or institutional changes.

Effective representation in decisions of the interests of different stakeholder groups

- **ID 3383 (Niger):** The project intended to overcome the causes and negative impacts of land degradation on the structure and functional integrity of the Maradi region's ecosystem resources through addressing the barriers and bottlenecks to scaling up successful sustainable land management technologies. As part of its activities, the project provided training to the members of the local village *gestion de terroir* subcommittee to equip them with the organizational and technical skills required to plan, implement, and monitor field level SLM activities. At completion, the terminal evaluation reported that such activities had fostered the strengthening of social cohesion between the beneficiaries, while targeting the most vulnerable had improved their status, particularly in decision-making on the management of natural resources. (Terminal evaluation, p. 42).

Existence and application of negotiated norms and regulations on resource use

- **ID 3376 (Chad):** The project aimed at reducing land degradation in the Shire River Basin through improved institutional, policy and payment for ecosystem services arrangements. To address local level governance for charcoaling in the Shire Basin, the project facilitated the review of traditional land and resource management institutions and their suitability for providing governance for sustainable charcoal production. This review resulted in important contributions to new policies on forestry, charcoal, agricultural policy, and energy as well as related legislation. Governance was also enhanced by the implementation of bylaws at community and district level in the field of SLM and bush fire management.

Property rights or security of tenure

- **ID 5220 (Ethiopia):** The project focused on reducing land degradation and improving land productivity in selected watersheds in targeted regions in Ethiopia, through the provision of capital investments, technical assistance, and capacity building for small holder farmers in the watersheds and government institutions at national and sub-national levels. At completion, the project reported that activities related to land registration and certification had contributed to develop security of land tenure among landholders, which is a basis of sustainable and productive use enabled by a greater willingness to invest into productive assets and infrastructure. Furthermore, landholders also reported satisfaction with the transparency of adjudication procedures and the participatory approach used in every step of the adjudication process (Terminal evaluation, p. 19).

Existence of conflict resolution mechanisms (e.g., mediation, arbitration, litigation)

- **ID 3383 (Niger):** The project's objective was to address the causes and negative impacts of land degradation on the structure and functional integrity of the Maradi region's ecosystem resources through overcoming the barriers to scaling up successful sustainable land management technologies. The terminal evaluation reported that the activities of the GEF

component had fostered social cohesion between the beneficiaries through the joint work on the sites. The project also supported the creation and formalization of village Management and Surveillance Committees (COGES) which hold regular meetings to better conduct the sustainable management of their environment. They decide in the General Assembly on the sale prices, the distribution of sales receipts as well as the allocation to be given to the profits drawn. By promoting participatory and transparent decision-making, the COGES contribute to settling conflicts around access to and management of natural resources. (Terminal evaluation, p. xi).

Synergies and trade-offs

- 78% of earlier projects and 88% of newer projects included in their design intentions towards mitigating trade-offs and or supporting actions towards synergies between environmental and socioeconomic outcomes.
- Among earlier projects that included references to synergies and/or trade-offs, 98% placed emphasis on supporting synergies, mainly between investments in natural resources management and improving peoples' livelihoods and economic well-being (e.g., through income generating activities), based on the notion that the latter contributes to reduce pressure on the former while fostering sustainable practices in the long run. Only one project (ID 5353) referred to analyzing trade-offs between systems for sustainable land and forest management, including valuation of costs/benefits of different SFM/SLM practices and production systems and those that are dedicated for biodiversity conservation, climate protection, ecosystem services and community resource use (Project document, p. 38).
- Among the newer projects that included references to synergies and/or trade-offs, there is also a higher prevalence of references to "synergies"; however, 15% of them included in their design the need to identify and address trade-offs too. For example, project ID 9476 (Chad) supports improved forest planning through the establishment of resource management committees and select land use plans which will "help manage trade-offs between cropping, pastoral, woodland and protected areas" (CEO endorsement, p. 21). Similarly, the regional project ID 9593 (Africa) emphasizes the importance of addressing competing inter-sectoral and cooperative uses. On such a basis, it seeks to introduce an ecosystem approach at different scales and across multiple sectors in the three targeted river basins to foster collaboration between stakeholders and identify measures for cooperative governance and management (Project Identification Form, p. 17).
- 67% of projects in the earlier cohort referred, at completion, to trade-offs or synergies. Among them, 71% made such reference in terms of success, i.e., that the project had been able to make achievements in those dimensions, while for the remaining 29% the degree of success was less clear. Among the "successful" examples, project ID 5215 (Benin) reported that interviews with community members participating in the IGAs had been

conducted throughout the project zone and across activity type (e.g., livestock raising, beekeeping, agriculture, and food processing) to assess IGA implementation from the early phases. More than 85% of respondents stated that prior to the project they either took part in charcoal making or farmed within the forest boundaries, but that after beginning to implement their microproject they had completely stopped these unregulated/unsustainable activities. The other 15% of respondents stated that although not totally, they had significantly reduced conducting such unregulated activities (Terminal evaluation, p. 22-23). On the other hand, among the partially successful or unsuccessful examples, project ID 4261 (Azerbaijan) set the intention, at design, to address climate change related disaster risk reduction as well as water management related to irrigation and residential water supply. At completion, the terminal evaluation acknowledged that while both challenges can be affected by climate change and may involve some of the same institutional partners, there are limited synergies to be gained by trying to address them simultaneously. Therefore, considering the project's limited financial resources, the project would likely have been more effective if it had instead focused on one or the other of these challenges (Terminal evaluation, p. 58).

Sustainability

- **78% of earlier projects referred to contributing factors supporting sustainability of outcomes at completion:** 40% referred to both project-related and contextual factors; 33% referred only to project-related factors, and the remaining 5% only to contextual factors:
 - The project-related contributing factors that were most frequently mentioned were “Strong buy-in and a strong sense of project ownership among key stakeholders” (43%); “Good engagement of key stakeholders / Stakeholders involved at design and decision-making” (38%) and “Follow-up initiatives or projects planned / implemented” (24%).
 - For example, project ID 2184 (Regional-Africa) reported a strong engagement with stakeholders at all levels (local communities, academic research institutions to government ministries and departments and NGOs), starting in the initial phases and continuing through implementation. Not only did this increase awareness and capacity for replication, but also promoted community and political buy-in and ownership of the project (Terminal evaluation, p. 43). In Turkmenistan, project ID 6960 focused on supporting climate resilient livelihoods in agricultural communities in Lebap and Dashoguz veloyats. The terminal evaluation reported that the project had been successful in securing additional funding from a variety of donor-financed local development programs and schemes, including activities on improvement of the national legislation on water and land use, gender mainstreaming, eco-

system-based management and nature protection (Terminal evaluation, p. 93).

- The context-related contributing factors that were most frequently mentioned were “National government support (e.g., budget allocated, supporting policies adopted)” (21%); “Strong institutional capacities to implement activities” (16%) and “Technical and/or financial capabilities” (11%).
 - To illustrate, in Mongolia, project ID 4744 aimed at mainstreaming biodiversity conservation, sustainable forest management (SFM) and carbon sink enhancement. The project supported 10 extension offices, strengthened 6 forest users’ groups (FUGs) associations, developed management plans, and provided capacity-building support to the governments both at Federal and Provincial levels. At completion, the project reported that the government agencies at central and district levels had had a good level of engagement on the project decision-making process; implementation of project activities and ownership on outputs generated by the project. The FUGs were fully involved in the activities’ implementation, and the engagement and ownership from the government and FUGs active participation were also instrumental in achieving the project outputs and outcomes (Terminal evaluation, p. x).
- **92% of earlier projects referred to hindering factors affecting sustainability of outcomes at completion:** 44% referred to both project-related and contextual factors; 33% referred only to context-related factors, and the remaining 14% only to project related factors.
 - The most frequent context related hindering factors were “Lack of national government support” (29%); “technical or financial shortcomings” (29%) and “Unfavorable political conditions/events (e.g., change in leadership, civil war)” (21%).
 - For example, in Benin, the terminal evaluation for project ID 5215 mentioned that while the General Directorate of Forests & Natural Resource Management (DFRN) had initiated a large scale up effort of staffing for technical forest management units, the lack of operational budget meant that this hiring had to be frozen since 2013. This caused significant problems with surveillance missions in the field, affecting the sustainability of outcomes related to forest management (Terminal evaluation, p. 42). In Burkina Faso, project ID 5187 reported that the high turnover rate of the political appointees has a direct negative effect over the sustainability of the capacity building activities that were implemented during the project, since there are no provisions on how to ensure capacity building for the newly coming (Terminal evaluation, p. 23).

- The most frequent project related hindering factors were “Shortcomings in project design” (24%); “Lack of mechanisms for sustainable financial or technical support” (17%) and “Poor project (co-) management” (17%).
 - For example, the terminal evaluation for project ID 5270 in Mali reported that some aspects of the project design that reduced efficiency had related to an implementation arrangement without a dedicated project implementation unit, which caused significant implementation delays in the early phase due to the lack of engagement from relevant stakeholders; and (b) the recognition during project preparation that land tenure was key to overcoming unsustainable practices, but with a lack of any concrete actions to address such challenge (Terminal evaluation, p. 24). In the regional project ID 3399 (Africa), the terminal evaluation reported that some interventions had been earlier toward the end of the project. This implied that there was not enough time to test the sustainability of those activities, including assessing the feasibility of the business plans for community-based investments and O&M plans for infrastructural and institutional investments, which reduces the probabilities that such measures will continue to be strictly implemented and produce the desired results beyond the project lifetime (Terminal evaluation, p. 61).

Cross cutting – Gender

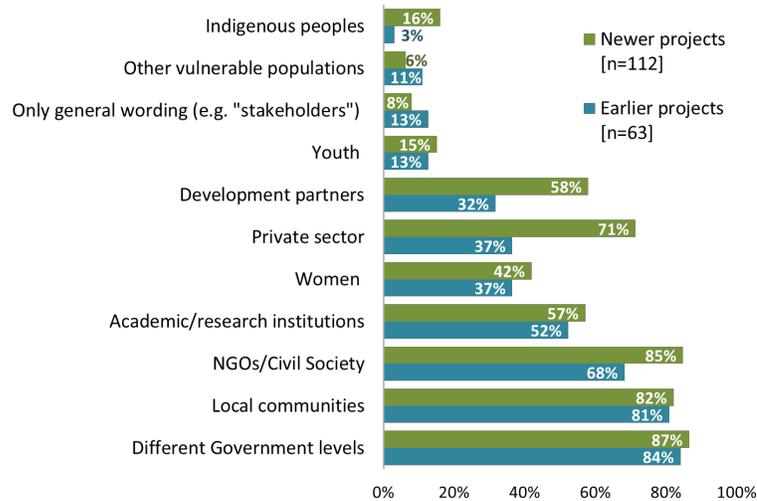
- Of the earlier project cohort (n=63), 32% included in the project document or CEO endorsement a reference to having conducted or aiming to conduct, as part of the project preparation, a gender analysis or gender assessment; in the same line, 44% referred to specific actions to address gender considerations. Only 38% of project results frameworks from this cohort included sex-disaggregated targets and/or gender-sensitive indicators.
- This contrasts with the newer cohort (n=112), where 82% and 81% of projects included a gender analysis and a gender action plan, respectively, and among them, over two thirds were supported by their corresponding background annexes (Gender Analysis and Gender Action Plan). 79% of project results frameworks from this cohort included sex-disaggregated targets and/or gender-sensitive indicators.
- Regarding areas of expected contribution, 62% of earlier projects and 85% of newer projects aimed at improving women’s participation, capacities and/or decision making; 46% and 75% at generating socioeconomic benefits or services for women; and 25% and 37% at closing gender gaps in access to and control over natural resources.
- 37% of earlier projects referred to having achieved gender-specific results in the terminal evaluations. Results included the mainstreaming of women’s participation in stakeholder trainings and capacity building, workshops, and decision-making bodies (such as local committees); the creation of income opportunities for female-headed households; and

gender equality awareness raising through the introduction of related trainings and campaigns targeting local communities as well as staff from public institutions.

Cross cutting – Resilience

- Within the earlier cohort (n=63), 59% of projects evidenced having conducted an initial stakeholder analysis and 57% a multi stakeholder engagement plan identifying the relevant stakeholders to the project and their potential roles. This contrasts with the newer cohort (n=112), where 83% and 87% of projects evidenced having conducted a stakeholder analysis and a multi stakeholder engagement plan.
- Different government levels (e.g., national, subnational), local communities, non-governmental and civil society organizations, and academic and research institutions were the main stakeholders that were engaged during the consultation processes and/or involved as beneficiaries or partners for project implementation. Among newer projects, there is an important increase (compared to the earlier cohort) regarding the involvement of the private sector, other development partners, and indigenous peoples (see Figure 3).

Types of stakeholders engaged as beneficiaries or partners in project design and/or implementation activities (as % in total)



Source: GEF/IEO based on projects' documents review

- 65% of earlier projects and 73% of newer projects included in their design documents activities or strategies to build or enhance resilience of the system to expected and/or possible shocks or stresses. Within the earlier cohort, references to resilience are circumscribed to the impacts of climate variability and change on natural resources and

the integrity of ecosystems. In other words, projects in such cohort that include resilience considerations generally aim at improving ecosystem integrity and productivity and, by that means, contribute to reducing vulnerabilities and building resilience in livelihoods (e.g., through positive effects on agricultural productivity, food security and or income generation/diversification). For example, one of the expected outcomes of project ID 4600 was to support “actual land users of all types in the districts to improve land use, increase resilience to climate variations and change, and secure long term sustainable livelihoods” (Project document, p. 79). Similarly, one of the components of project ID 4761 focused on “on scaling up of SLM best practices that will enhance carbon stocks on agricultural land as well as the resilience of agro-ecosystems to climate change and agricultural productivity” (Project Document, p. 10).

- Such resilience considerations that are linked to climate and natural disasters risks are also prominent among the newer projects cohort. However, among these newer projects there is a tendency to disentangle or elaborate further on the resilience concept, e.g., by referring to the different sub-dimensions of resilience (e.g., social, ecological, financial). To illustrate, the project document of ID 10362 refers to an integrated approach that combines the productive and social components of resilience building with a financial component. By combining climate resilient practices, disaster risk management measures and income generating activities the project expects to “help increase the productivity of poor agricultural or agro pastoral households. The increased levels of production obtained can thus improve incomes. Combined with a community-based saving and loan system or guarantee schemes (financial component), the additional income enables to increase the available capital and to improve the reimbursement of loans” (Project document, p. 80).
- 62% of earlier projects and 77% of newer projects identified either tools for measuring changes associated with resilience; targets or indicators associated with resilience within the M&E framework; and/or a role for learning in guiding implementation.
 - Examples of tools that were introduced to monitor resilience-related dimensions included vulnerability assessments; climate resilience scorecards, environmental, climate vulnerability and food security baselines and follow-up surveys; diverse resilience assessment and monitoring tools/frameworks⁵, and drought/flood forecasting and contingency planning.
 - Indicators associated with resilience that were often included in the results matrices aimed at measuring changes in crop and livestock productivity; annual gross revenues; dietary diversity; land cover; soil organic carbon; vegetation

⁵ To name a few: Resilience Atlas, Land Degradation Surveillance Framework; the Vital signs framework; the Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists

structure and composition; above ground carbon stocks, land degradation types, severity and causes; natural hazards risk indexes, among others.

Cross cutting – Fragility

- 41% and 46% of earlier and newer projects, respectively, took place in a country that had been classified as “fragile” either some time before project start and/or during the project implementation. However, only 21% and 24% of them included, in the contextual description of the design documents, references to elements that characterize such status.
 - Within the earlier cohort, these references are specific about certain risks that can be linked to fragility: e.g., insecurity and conflict risks, political unrest and instability risks, climate risks, chronic poverty, forced displacement, weak institutions etc. However, none of these projects included a reference to the country's fragility status classification, let alone a global fragility-sensitive analysis of the context.
 - Among the newer projects, there are some good examples of including a more comprehensive reference to fragility status and context. To illustrate, project ID 10792 mentions that “The 2021 List of Fragile and Conflict-Affected Situations classifies Somalia in the category of high-intensity conflict countries. Since 2007, Somalia has been considered one of the three countries with the most fragile situations. Somalia’s high level of fragility and weak resilience is due to persistent violence and extremist attacks that has lasted for almost 30 years, climate-related shocks, recurrent humanitarian crises, and low institutional capacity” (Project Implementation Form, p. 11). Similarly, project ID 10672 indicates that “Iraq has been identified as a country with extreme fragility by the International Fund for Agricultural Development, the World Bank and other international assessments: the country is also listed in the 'high alert' category in the Fund for Peace Index, which forms the basis for the Organization for Economic Co-operation and Development’s (OECD) assessment of fragility. Fragility affects rural development significantly, reducing institutional capacity and service delivery. For Iraq, this fragility is complex, subnational, and multi-dimensional mainly stemming from weak institutional capacities and structures for good governance. On the other hand, volatile and transboundary security with associated risks is not conducive to private sector investment for reconstruction, inclusive economic growth, and job creation.”
- Among earlier projects, 19% reported in their terminal evaluation having had at least some of their activities slowed down or put on hold due to fragility-related risks, and 21% referred to at least some impacts of fragility-related issues on

project outcomes or sustainability. Examples of the most frequent fragility-related issues mentioned were political and financial instability, social unrest, conflict, and insecurity.

Cross cutting – Private sector

- Among the earlier cohort, private sector engagement was mentioned in 35% of projects at the design stage (i.e., CEO endorsement or project document), and by 29% of projects after completion (i.e., in terminal evaluations). Among newer projects, engagement with the private sector was mentioned in 77% of projects at the design stage.
 - In both cohorts, private sector stakeholders were most likely to be engaged for capacity development activities (e.g., to improve the capacity of value chain actors like SME and smallholders, improve business operations); for financial reasons (e.g. to leverage finance, apply financial expertise, monetize environmental benefits, market based solutions); for technical assistance (e.g. to contribute to project design and planning), and/or for knowledge and information sharing (e.g. to develop and scale solutions by sharing new tools, methods, technologies and innovation). For example:
 - Among earlier projects, references to the type of private sector stakeholders engaged are mostly generic: 72% of projects that sought to engage the private sector referred to it in broad terms, while only 27% of these projects explicitly mentioned engagement with cooperatives, SMEs, or smallholders, and 14% with privately owned companies.
 - Among newer projects, there is more specificity in the references to the type of private sector actors to be engaged: although still 38% of projects that sought to engage the private sector referred to it in broad terms, 42% of projects explicitly mention engagement with cooperatives, SMEs or smallholders; 29% mention engagement with other actors (mainly financial institutions or intermediaries), and 22% with privately owned companies.
- Among the earlier projects, 16% referred in project documents to public private partnerships for the implementation; 13% to mobilizing or intending to mobilize private sector financing during or beyond the project's timeframe; and 8% to private sector co-financing of the project. Only 3 projects provided, at completion (i.e., in terminal evaluation), precise references about actual private sector resources mobilization:
 - ID 3399 (Regional-Africa): “LVEMP-II APL-1 provided a grant of US\$4 million and successfully leveraged the total private sector investment of US\$26 million in all five LVEMP countries (including Rwanda and Burundi).” (Terminal evaluation, p. 48).

- ID 4642 (Uzbekistan): “Through the Matching Grants Program, the project leveraged a total of US\$4,313,798 of private investments from agribusinesses and individual farmers. Discussions with the project beneficiaries confirmed that these private investments would not have taken place without matching grants provided by the project.” (Terminal evaluation, p. 20).
- ID 5449 (Senegal): “The project attracted FCFA 18 billion (US\$ 31.8 million) in private capital in two rounds. In the first round, which comprised of investors that were already in the zone, three firms signed agreements with local communities for the development of irrigation infrastructure in the amount of FCFA 6 billion (US\$ 10.6 million) covering 1,813 hectares. The second round, which was open to both domestic and international firms, attracted 8 qualifying firms, for a commitment of FCFA 12 billion (US\$ 21.2 million), covering 3,513 hectares. As part of the Matching Grant activities, 3 participating SMEs mobilized US\$ 1.4 million (690 million CFA francs) and 45 EIGs of small beneficiary producers mobilized FCFA 628 million (US \$ 1.3 million), for a grand total of FCFA 19.5 billion (US \$ 39 million). Although this fell short of the US\$ 100 million expected after restructuring, it demonstrated the potential and promise for this approach in mobilizing private capital for irrigation development (Terminal evaluation, p. 13).
- Among the newer projects, and in line with their relatively greater engagement with the private sector, 28% referred in project documents to public private partnerships for implementation; 29% to mobilizing or intending to mobilize private sector financing during or beyond the project's timeframe; and 32% to private sector co-financing of the project.

TECHNICAL DOCUMENT 4 - GEOSPATIAL ANALYSIS

Introduction

Within the Global Environment Facility Independent Evaluation Office's (GEF IEO) Strategic Country Cluster Evaluation (SCCE) on GEF's support to drylands countries, one of the key evaluations questions is:

To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

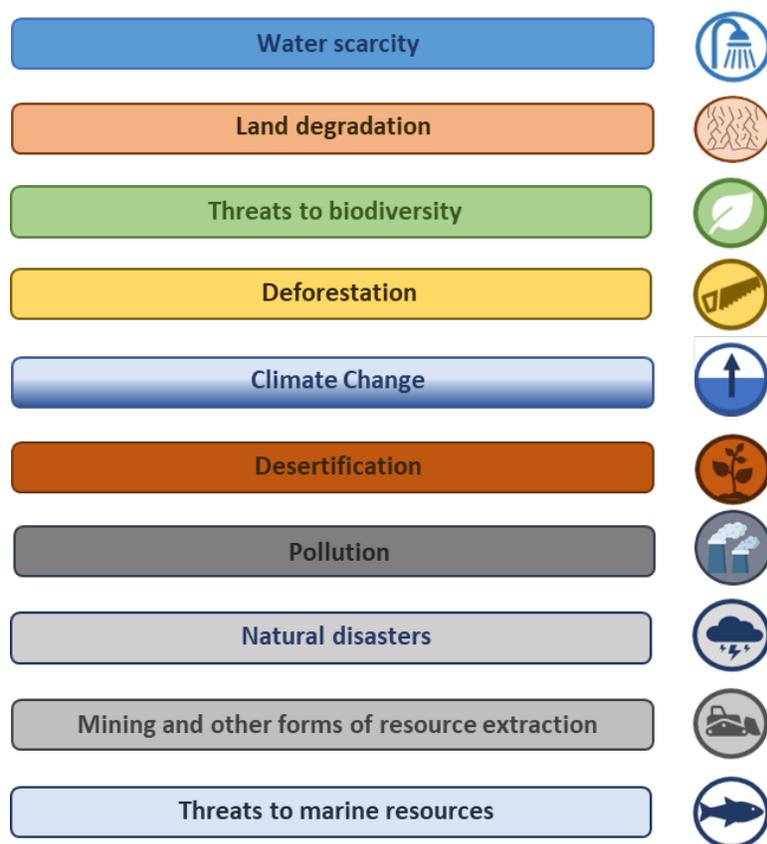
One of the key ways the evaluation team proposed to answer this question is by performing a global geospatial relevance analysis which will allow for comparison of areas with high occurrence and severity of the main environmental and socioeconomic challenges associated with drylands and the locations where GEF has intervened through its projects and programs. The purpose of this note is to detail the methodology and results of this geospatial relevance analysis. The methodology used was similar to the approach used for the recent evaluation of the GEF Integrated Approach to Address Drivers of Environmental Degradation. A technical description of that methodology can be found in Volume 2 of the [Integrated Approach Evaluation report](#).

Methodology

Geospatial layer selection

The first step in the geospatial relevance analysis was selecting the particular geospatial layers that best represented the major environmental and socioeconomic challenges most common in drylands. The most common challenges present in drylands areas were determined through an analysis of United Nations and World Bank country diagnostics.

Figure 1: Main environmental challenges in the Drylands SCCE countries



Source: own elaboration *UNEP Atlas of Our Changing Environment* publications series for countries in Africa, Latin America, and the Caribbean and Arab regions, and *World Bank Systematic Country Diagnostic* reports for countries in Europe and Asia

The evaluation team undertook a process to identify existing datasets, standard frameworks (e.g., UN Sustainable Development Goals), and methodologies that have wide adoption in the monitoring and environmental analysis literature that best represented the identified dryland challenges. Emphasis was placed on leveraging existing indicators rather than developing bespoke ones to ensure alignment with environmental drivers identified by the GEF IEO and future comparison. Ultimately, only the most critical challenges that could be represented by geospatial data layers were chosen.

Table 1 illustrates the chosen indicators used to represent each environmental challenge. Each variable underwent modification as outlined in the 'Methodological Notes' column. The selection of each data source was made in light of its relevance to the indicator it served, its scientific credibility, and availability.

Table 1. Geospatial data sources used in the analysis to represent key environmental challenges in drylands countries.

Environmental challenge	Geospatial indicator and source	Period	Methodological Notes
Water scarcity	Aqueduct Water Scarcity Area Weighted Index	2019/2023	Calculated as the dryland area weighted average index of five sub-indicators (Baseline water stress, Interannual variability, Seasonal

			variability, Groundwater table decline, Unimproved/no drinking water). Dryland area weighted is defined as the area of a given basin that is dryland (aridity <0.65).
Land degradation	Share of Land Degradation in Drylands from Trends.Earth, Conservation International SDG 15.3.1	2012 - 2021	Calculated as the share, or total area of land degradation in drylands. Drylands are defined as area with an aridity <0.65.
Biodiversity loss	Share of Key Biodiversity Areas Covered by Protected Areas using: <ul style="list-style-type: none"> • Key Biodiversity Areas Programme • World Database on Protected Areas JRC Global Surface Water	2022/ 2023	Calculated as the share, or total area of KBAs that are covered by protected areas in terrestrial drylands. Terrestrial drylands are defined as any region which has an aridity <0.65 and less than one month of permanent seasonal water defined by the JRC Global Surface Water product.
Deforestation in drylands	Share of Tree Cover Lost in Drylands from Global Land Analysis and Discovery (GLAD)	2012-2021	Calculated as the share, or total area of tree cover loss in drylands from 2012 to 2021. Tree cover is based on 2000 tree cover extent and a >10% tree canopy threshold, drylands are defined as area with an aridity <0.65.
Natural disaster risk	<u>INFORM Baseline Climate Change Risk Index</u>	2023	No adjustments
Climate change risk	<u>INFORM Climate Change Risk Index (RCP 8.5 & SSP 3)</u>	2050	No adjustments.
Pollution	<u>Population Weighted PM2.5 Air Pollution, Mean Annual Exposure</u>	2017	No adjustments
Desertification was not included because it was deemed to be captured sufficiently in the land degradation and deforestation datasets. Mining and other resource extraction was not included because there are no global datasets that show a complete picture of the location of all mining sites within drylands. Threats to marine resources was excluded because it was not deemed to be an issue for drylands specifically as the marine areas are actually adjacent to drylands.			

Data processing

From the input geospatial layers, four spatial relevance indices were created using two geographic distinctions (national, and subnational) and two processing distinctions (relative and absolute). Data processing was done at the subnational administrative-1 level (one administrative level below national boundaries) for all dryland countries⁶. National indicator inputs were calculated based on the raw inputs to the administrative-1 level data (e.g., area of degraded land for a given country is the sum of the area of degraded land for all nested administrative-1 levels). Relative inputs were calculated based on the potential area for a given variable (e.g., share of tree cover lost in drylands is the proportion of total tree cover in drylands that experienced loss during the observation period). The indices were calculated as the mean of the seven indicators⁷ for the corresponding geographic variant.

⁶ This is defined as countries with more than 50% dryland coverage, based on aridity index and total land area.

⁷ In the case of null or absent values for individual administrative-1 areas, the average including the total set of indicators was calculated (i.e., the average is inclusive of all possible indicator values, not all observed values).

The two national-level indices provide insights into global funding and activity prioritization, particularly for identifying areas of high concern, where the GEF drylands portfolio is currently not operating, as well as providing descriptive statistics about the relative levels of environmental drivers for the existing drylands portfolio. While a time series analysis the drylands portfolio was out of scope for this evaluation, the national level index can still provide insights into understanding if the GEF drylands portfolio is prioritizing areas with the most need.

Subnational indices provide more operational insights that can assist GEF country staff and project planning by identifying intervention targets within countries. For example, when combined with a global dataset of georeferenced project locations, it is possible to see if project activities both globally and at a country level are targeted in regions of environmental concern.

The two processing variants of the index provide similar, but distinct interpretations. The relative processing (i.e., normalizing to the area of each country or administrative unit), allows for easier analysis across varying areas as the area within the set for both administrative levels vary widely. Absolute processing (i.e., using the total meters or hectares of a given variable when available), allows for analysis that focuses on increasing global environmental benefits or mitigants. The absolute processing index will naturally favor larger areas and may not directly map with total impacted populations. Additionally, the absolute processing index assumes that each hectare of land contains equivalent biodiversity, carbon, and ecosystem productivity, this compression should be interpreted with caution. Ultimately, there are tradeoffs to each index variant—equal weight per area or a focus on maximizing global environmental benefits and mitigation potential.

Data processing comprised three versions contingent on the quality, resolution, and coherence of the input data: unmodified country-level data, area-based modified data for subnational or raster-based datasets, and custom modifications for the index to only incorporate highly coherent data with the identified environmental drivers.

- A. Without modification: country level data (e.g., INFORM climate change indices, or population weighted air pollution).
- B. With area-based modification: subnational, or raster-based data with a spatial component, where the evaluation team masked non-dryland ecosystems, and processed data using standard methodologies (e.g., tree canopy thresholds, degraded land thresholds).
- C. Custom: to ensure that the index only contains data that is highly coherent with the identified environmental drivers, the evaluation team modified WRI's Aqueduct source data to calculate a custom index (i.e., removing sub-indicators that are not relevant⁸). Following modification of the sub-indicators, the evaluation team then processed the index with area based modifications, and the standard methodology provided by WRI.

⁸ Baseline water stress, Interannual variability, Seasonal variability, Groundwater table decline, Unimproved/no drinking water.

Targeting specific environmental challenges

To further understand if GEF projects targeted the specific environmental challenges most relevant to their project areas, the evaluation team conducted a supplementary analysis comparing the challenges addressed in GEF project design documents with the challenges with the highest spatial relevance in the project areas. Text parsing was used to identify mention of environmental challenges in either the contextual description of the project or in the project objectives, components and/or activities within key GEF project design documents. If an environmental challenge was stated in these sections of the documents, they were deemed to be more likely to be addressed by that project. After each project's documents were analyzed for their environmental challenge references, the team aggregated this data into country and region summaries for a deeper comparative analysis.

To compare environmental challenges listed in design documents and those deemed relevant by the spatial analysis, the evaluation team established variable percentile thresholds which can be interpreted as:

- A **Documented Challenge** pertains to the percentage of projects where the challenge was identified in the design documents through text parsing. For instance, with a threshold set at 75%, a country or region where 75% (or higher) of its projects highlighted a particular challenge would be recognized as having a high documented challenge.
- A **Measured Challenge** is determined by the spatial relevance index sub-indicator values for specific environmental challenges. Using the same 75% threshold, any country or region with an indicator value of 0.75 (or higher) would fall under the high measured challenge category.

The team then evaluated alignment between the challenges discussed in GEF's design documents and the challenges deemed most relevant by the spatial analysis, with the aim of identifying where the GEF projects were addressing the most relevant challenges and where gaps could exist. Convergence or divergence for each environmental challenge was interpreted as:

- *High measured, low documented*: a potential gap where GEF projects in drylands are not addressing the most relevant environmental challenges.
- *High measured, high documented*: a sign that GEF projects are addressing the most relevant challenges.
- *Low measured, high documented*: a sign that GEF projects are addressing challenges that are not the most relevant.
- *Low measured, low documented*: neutral observation

Limitations

There are many factors that cannot be captured by remotely sensed data that are considered when prioritizing countries or subnational areas for GEF funding (e.g., government priorities, availability of GEF Agencies and activities of other donors in the region). Although this spatial

relevance analysis doesn't consider such elements, it is just one of many pieces of evidence to be considered in the wider dryland evaluation. The results here are best used in conjunction with other sources of data such as interviews and field visits when determining overall relevance of certain countries or subnational areas.

Additionally, the geospatial data sources used in this study may not always reflect all dimensions of the environmental challenges or socio-economic indicators they represent for the study. For example, some datasets are several years old and situations may have changed, or spatial resolution of datasets might be too coarse to capture local dynamics. To mitigate these issues, the analysis analyzed datasets for both methodological robustness and timeliness of the data. The analysis also is done at a coarse scale—the country and administrative-1 level (one step below country boundaries) to avoid uncertainty issues at the local level.

Results

Country level analysis results

Country level results are overall positive for the GEF, as in general, there is a correlation between higher spatial relevance for drylands environmental challenges and higher GEF financing (Figure 2). Countries with high spatial relevance where the GEF has invested heavily include Sahel countries such as Niger (third highest GEF financing of drylands projects at \$45.5 million) which has the highest relative spatial relevance and the second highest absolute spatial relevance, Ethiopia (highest GEF financing at \$53.1 million) and Mali (\$49.8 million). Niger's high relevance was due mostly to its high risk to natural disasters, climate change risk and water scarcity (Figure 3). India, with its high dryland forest loss, also had high relevance and GEF financing (\$38.9 million). Only one country stands out for overinvestment, Uzbekistan, which had the fifth highest GEF financing of drylands projects (\$33.7 million) but a relatively low spatial relevance. Niger is the only of the ten countries with the most GEF funding in the drylands portfolio that is also among the ten countries with the highest absolute spatial relevance (Table 2). However, several other highly funded countries are in top 20 countries with the highest relevance (India, Angola, Mali, Burkina Faso and Mexico). Many countries had high spatial relevance but relatively small GEF financing, led by Chad (which had the highest absolute spatial relevance but only \$19 million in GEF financing), Mozambique (\$26 million), Afghanistan (\$12 million), South Sudan (\$9 million), Zambia (\$8 million) and Namibia (\$10 million). The relative index was quite similar to the absolute, although some smaller countries had higher relevance including Burkina Faso, Uganda and Senegal.

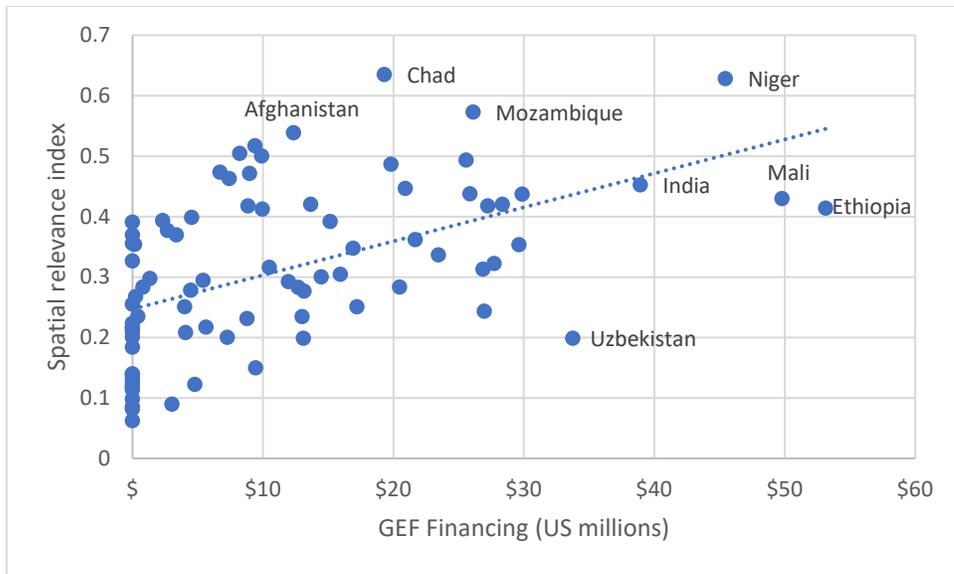


Figure 1. Absolute spatial relevance vs. GEF financing at the country level.

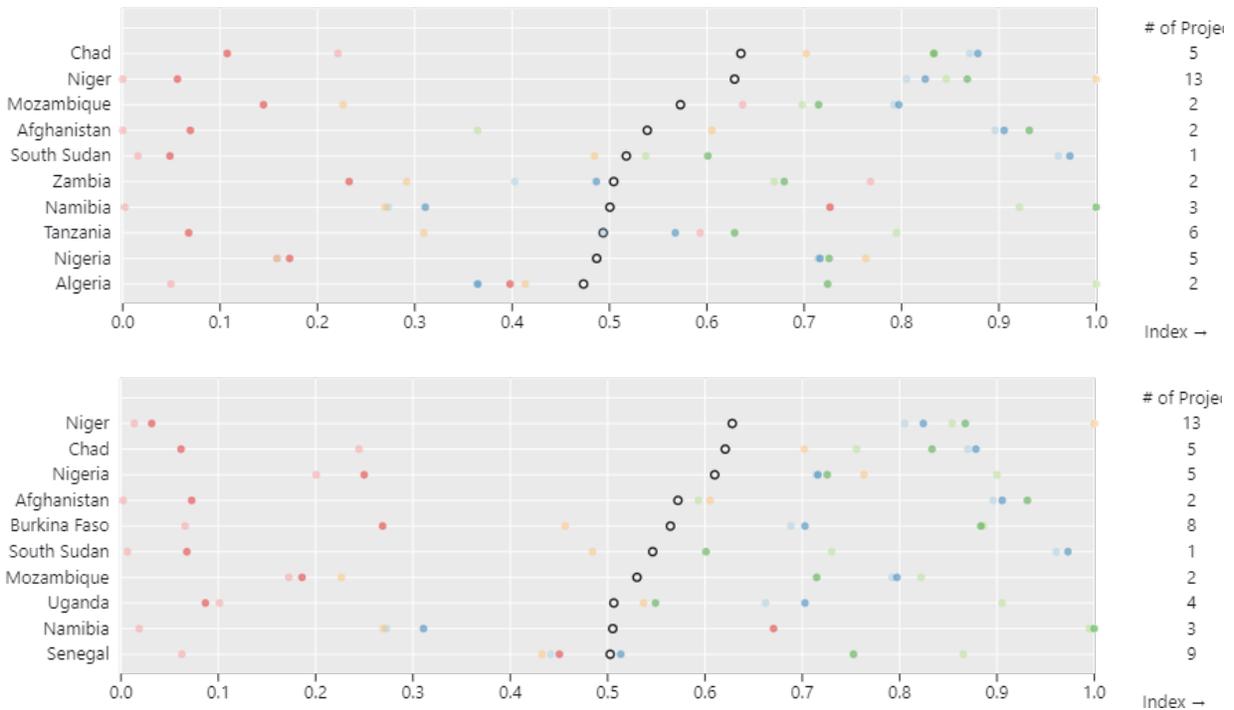
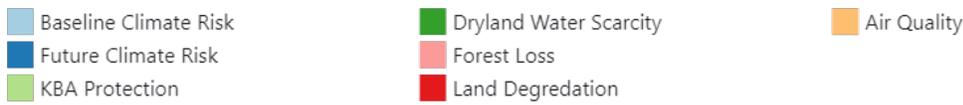


Figure 2. Top 10 countries with the highest spatial relevance index for drylands challenges. The absolute index is shown first followed by the relative index. Number of GEF projects is shown on the right.

Table 2. Countries with the most GEF funding in the drylands evaluation portfolio vs. absolute spatial relevance.

Rank	Countries with most GEF Drylands Financing	Spatial relevance									# of projects	Total GEF funding
		Land degradation	Biodiversity threat	Drylands forest loss	Air pollution	Natural disaster risk	Climate change risk	Water scarcity	Spatial relevance index	Spatial relevance rank		
1	Ethiopia	0.04	0.31	0.04	0.41	0.74	0.74	0.61	0.41	22	7	\$53.1 M
2	Mali	0.17	0.07	0.08	0.41	0.75	0.77	0.76	0.43	17	10	\$49.8 M
3	Niger	0.06	0.85	0.00	1.00	0.81	0.82	0.87	0.63	2	13	\$45.5 M
4	India	0.28	0.02	0.01	0.97	0.57	0.55	0.76	0.45	13	7	\$38.9 M
5	Uzbekistan	0.06	0.05	0.00	0.30	0.18	0.20	0.60	0.20	67	8	\$33.7 M
6	Angola	0.17	0.33	0.40	0.34	0.44	0.54	0.84	0.44	16	4	\$29.9 M
7	Senegal	0.11	0.20	0.02	0.43	0.44	0.51	0.75	0.35	34	9	\$29.6 M
8	Burkina Faso	0.09	0.10	0.02	0.46	0.69	0.70	0.88	0.42	19	8	\$28.4 M
9	Eritrea	0.00	0.06	0.00	0.51	0.38	0.47	0.84	0.32	38	4	\$27.7 M
10	Mexico	0.24	0.54	0.34	0.22	0.51	0.49	0.59	0.42	20	3	\$27.2 M

The spatial relevance indices showed that some environmental drivers of degradation in the drylands did not tend to occur in the same countries as others. For example—only two of the 10 countries with the most land degradation were among the 10 countries with the highest absolute spatial relevance (Namibia and Algeria). China and Kazakhstan had the most land degradation, but had relatively little drylands forest lost, climate change risk and biodiversity threat compared to other countries. In the relative index, land degradation highlighted small island developing states such as Cape Verde, Antigua and Barbuda and Saint Kitts and Nevis, but these countries had relatively little forest loss and biodiversity threat compared to other countries. Similarly, countries with high dryland forest loss tended to be areas that were semi-humid, thus have more forest but less water scarcity and air pollution issues. Examples include Paraguay and Argentina.

Subnational level analysis results

Subnational results were similar to country level results, with the 10 most spatially relevant subnational units, according to the absolute index, being in Niger, Chad and Afghanistan (Table 3). Units in Niger and Chad, which included Maradi, Tahoua, Tillaberi and Dosso (mostly in the southwest of the country of Niger) and Ouaddai Assongha, Biltine and Tibesti (in the north and eastern portions of Chad) had high air pollution and biodiversity threat in addition to water scarcity. In Samangan, Ghor, Sar-e-Pul, Faryab and Daykundi, Afghanistan, biodiversity threat and water scarcity were also high in addition to natural disaster and climate change risk. The relative index at the subnational level highlighted countries with small subnational units, especially Nigeria, which had the 10 most spatially relevant units. All of the most relevant units

in Niger had project sites in the drylands evaluation portfolio, with Tillaberi having seven, Tahoua four and Maradi three. None of the most relevant units in Chad or Afghanistan had GEF project sites.

Table 3. Top 10 most spatially relevant subnational units in the absolute index.

Country	Administrative unit name	Land degradation	Biodiversity threat	Water scarcity	Dryland forest loss	Air pollution	Natural disaster risk	Climate change risk	Spatial relevance	GEF project sites
Niger	Maradi	0.01	1.00	0.98	-	1.00	0.81	0.82	0.66	3
Niger	Tahoua	0.02	1.00	0.89	-	1.00	0.81	0.82	0.65	4
Niger	Tillaberi	0.05	0.98	0.76	0.00	1.00	0.81	0.82	0.63	7
Niger	Dosso	0.02	1.00	0.76	0.00	1.00	0.81	0.82	0.63	1
Chad	Ouaddai	0.01	1.00	0.95	0.00	0.70	0.87	0.88	0.63	0
Chad	Assongha	0.00	1.00	0.94	-	0.70	0.87	0.88	0.63	0
Chad	Biltine	0.01	0.92	0.98	-	0.70	0.87	0.88	0.62	0
Chad	Tibesti	0.00	1.00	0.90	-	0.70	0.87	0.88	0.62	0
Afghanistan	Samangan	0.01	1.00	0.90	0.00	0.61	0.90	0.91	0.62	0
Afghanistan	Ghor	0.00	1.00	0.90	-	0.61	0.90	0.91	0.62	0

In case study projects, the GEF also performed well in targeting particularly spatially relevant subnational units (Figure 4). In Niger, the most spatially relevant country, the most targeted unit was Tillaberi which as the third most spatially relevant unit. However, GEF has worked all around the country, with multiple projects in four of the five most spatially relevant units. In Ethiopia, GEF also had multiple project sites in four of the top five most spatially relevant units (which tended to be in the drier north), including three in Tigray, the most relevant unit and four in Amhara, the second-most. However, it had no project areas in the Hereri, the third most spatially relevant unit. It also has five project areas in the Southern Nations, Nationalities and Peoples unit and six in Oromia, both of which are the least spatially relevant units in the country (and located in the more humid south). In Malawi, where the GEF has the most sites (seven) in the most relevant subnational unit—the Southern region three sites in the second most relevant region, the Northern Region. The Southern region has the most water scarcity in

the country. In Azerbaijan, the GEF has three project areas in the three most spatially relevant subnational units—Absheron, Nakhchiva and Daghlig Shirvan. In Uzbekistan, the GEF is working throughout the country, with two project sites in the most relevant unit, Fergana, but six sites in the less relevant Bukhara and Kashkadarya. Chile has the least relevant subnational units of all the case study countries, but within Chile, GEF has multiple project sites in two of the four most relevant subnational units (all of which are in the more arid north of the country)—Coquimbo and Valparaiso. However, it has no sites in the other two—Atacama and Antofagasta.

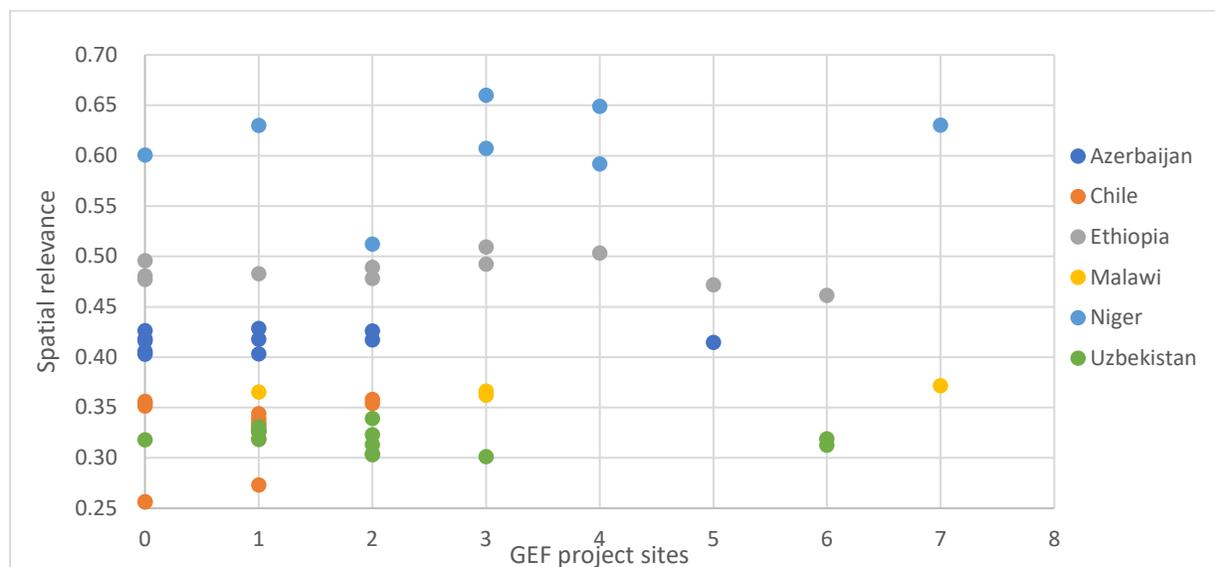


Figure 3. Spatial relevance of subnational units in drylands evaluation case study countries vs. number of project sites in drylands evaluation portfolio projects, using the absolute index.

Specific Environmental Challenge Relevance Results

The supplementary analysis linking measured spatial relevance index values to specific environmental challenges highlighted in GEF project design documents resulted in mixed findings. Initial analysis (based on text-parsing of GEF contextual descriptions of the project and the project objectives, components and/or activities) found that few countries in the drylands portfolio identified water scarcity as an environmental challenge in the contextual description of their projects, compared to other challenges (Figure 5). The identification of water scarcity as an environmental challenge in the background sections of project documents was significantly lower than inclusion of water scarcity in project objectives, components, and/or project. This discrepancy was the most pronounced in Asia and Europe, with closer parity in Latin America and the Caribbean.

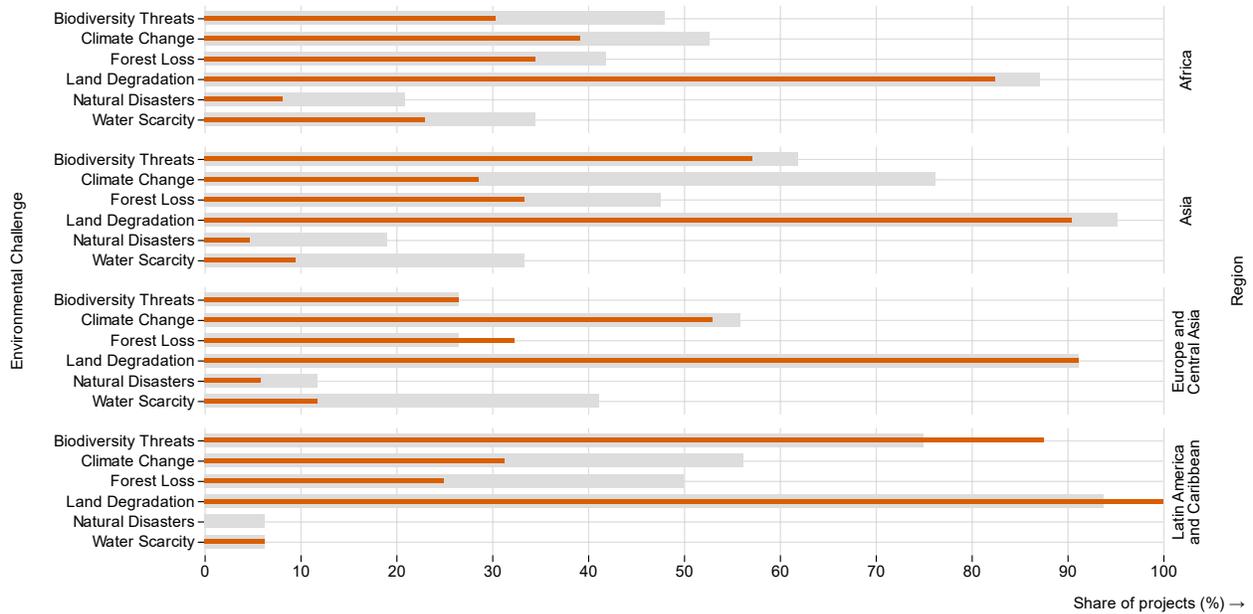


Figure 4. Comparison of environmental challenges in drylands projects' contextual descriptions (gray bars) versus objectives, components, and/or activities (orange bars).

Country-level geospatial analysis outlined [above](#), confirmed that a substantial proportion of the drylands' portfolio were found to have a heightened challenge of water scarcity (60 percent of countries). This contrasts with the number of GEF projects specifically targeting water scarcity in project objectives, components and/or activities. As shown in Figure 6, the cluster of countries along the left quadrant, and relatively sparse distribution beyond, highlight that many countries with high spatial relevance for water scarcity do not address the challenge in their projects.

Within this group of countries experiencing higher measured water scarcity, an even smaller fraction has projects that directly target this issue in their project objectives, components and/or activities. Only 36 percent of these countries have at least one project with an identified focus on water scarcity.

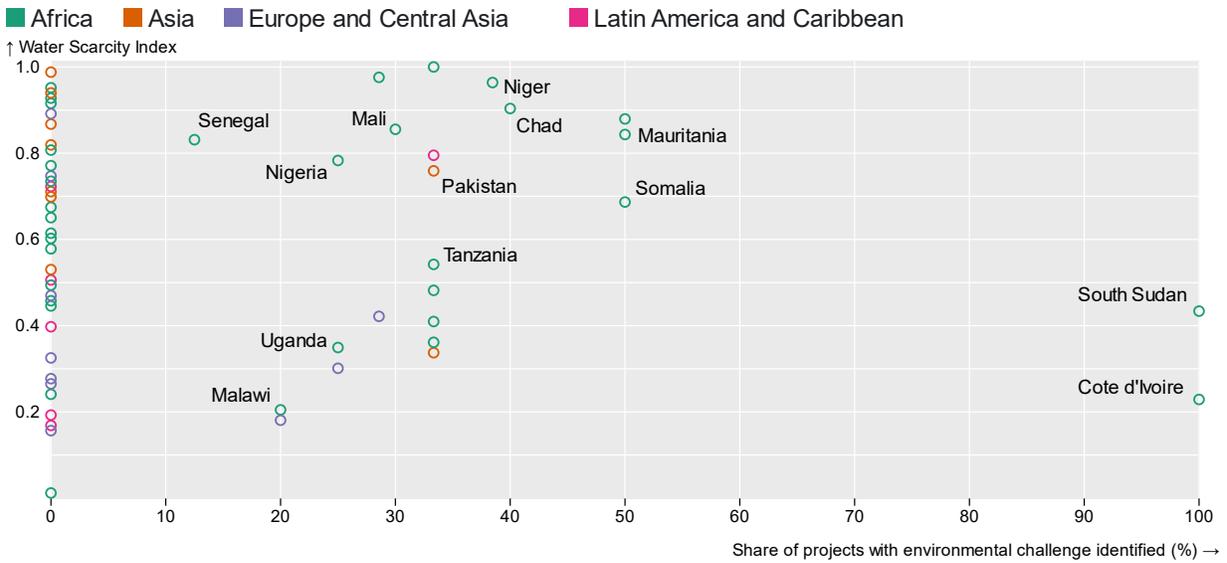


Figure 5. Relationship between proportion of GEF drylands projects that seek to address water scarcity in their objectives, components, and/or activities, and the relative extent of the water scarcity challenge, by country. Water scarcity is derived from a dryland masked, custom version of WRI's Aqeduct (see an un-masked version [here](#)).

Apart from water scarcity, other (non-area based) environmental challenges exhibited minimal divergences between GEF documentation and the measured environmental challenge. Area-based environmental challenges (e.g., land degradation, forest loss) was more complex, with both the measured and documented data exhibiting inverse skews. Project documentation was far more likely to identify these challenges, with almost 100 percent identification in certain regional cross-sections. This skew in the project documentation made it difficult to draw meaningful conclusions, even after attempts to normalize the data for measured environmental challenges.

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TECHNICAL DOCUMENT 5 - SELECTION OF CASE STUDY COUNTRIES AND PROJECTS

Background

Country case studies are a key component of the Drylands SCCE, as they provide country-level evaluative evidence on the performance of GEF interventions addressing environmental challenges related to drylands. Through a purposeful selection based on the presence of completed projects and other relevant criteria, these country case studies will contribute to a) assessing the relevance and policy coherence of GEF investments, and b) assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits. In brief, case studies will revolve around the following issues⁹:

- With respect to relevance and policy coherence, case studies will focus on assessing the alignment of GEF support with national operational strategies, priorities, and budgets; engagement of national UNCCD, CBD, and UNFCCC focal points in project design; and on the interaction of GEF projects with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence.
- Regarding performance, case studies will provide evidence of the most prevalent Global Environmental Benefits and associated socioeconomic co-benefits of GEF-related interventions, as well as on local perceptions of the existence of nexus or trade-offs between environment and socioeconomic development. They will provide evidence of positive, negative, and absent changes, and of the existence and application of negotiated norms and regulations for resource use and governance. They will also provide opportunities for post completion sustainability assessments.
- Finally, case studies will be key to understanding to what extent the cross-cutting issues (gender, resilience, fragility, and private sector) were considered in GEF programming and implementation.

⁹ Derived from the Evaluation Matrix presented in Annex 2 of the Approach Paper.

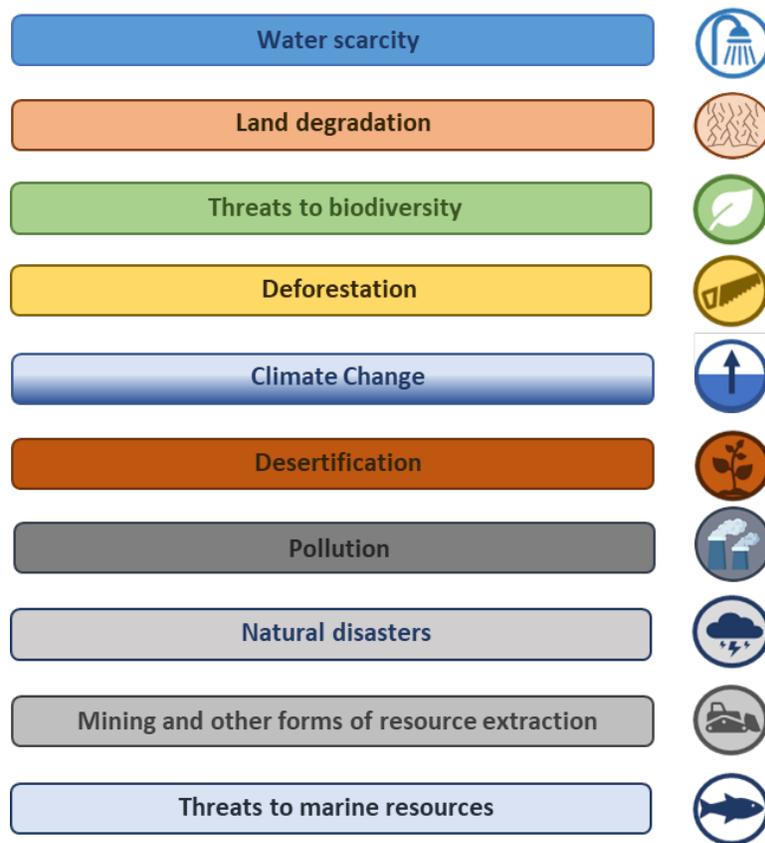
Process

Country case study selection followed the steps described hereafter.

Step 1: Identification of the main environmental challenges

The process started with an overview of the main environmental challenges faced by the 53 countries in the Drylands SCCE portfolio¹⁰. Figure 1 below synthesizes the ten most commonly shared environmental challenges faced by the Drylands SCCE countries.

Figure 1: Main environmental challenges in the Drylands SCCE countries



Source: own elaboration *UNEP Atlas of Our Changing Environment* publications series for countries in Africa, Latin America, and the Caribbean and Arab regions, and *World Bank Systematic Country Diagnostic* reports for countries in Europe and Asia

Step 2: Grouping countries into aridity clusters

¹⁰ The Drylands SCCE portfolio composed of 220 projects is presented in Annex 1 of the Approach Paper.

In this step countries in the Drylands SCCE portfolio were grouped according to their predominant type of aridity, as being predominantly “hyper-arid”, “arid”, “semi-arid” or “dry sub-humid”.¹¹ Countries were assigned to each aridity cluster if they had 50% or more of their dryland territory under one of these aridity types. After completing this task, ten countries were pending classification because they did not have at least 50% of their dryland territory under one specific aridity type. For these countries, the first and second largest aridity types were considered. In every case, the combination of the two largest aridity types covered at least 70% of the dryland’s territory: three countries had at least 70% of their dryland’s territory as hyper-arid or arid, while seven countries had at least 70% of their dryland’s territory as arid or semi-arid. Therefore, two additional clusters were created: “hyper-arid & arid” and “arid & semi-arid”, yielding in total six “aridity clusters”. Figure 2 provides an overview of how countries in the SCCE Drylands portfolio distribute in terms of the main environmental challenges and predominant types of aridity.

Figure 2: Linking environmental challenges with aridity clusters

¹¹ The United Nations Convention to Combat Desertification (UNCCD) defines drylands as those areas with an aridity index of less than 0.65. The Aridity Index is a measure of the ratio between average annual precipitation and total annual potential evapotranspiration (Joint Research Center, European Commission, 2019). Drylands are classified as “hyper-arid” when $AI < 0.05$; as “arid” when $0.05 < AI < 0.2$; as “semi-arid” when $0.2 < AI < 0.5$ and as “dry sub-humid” when $0.5 < AI < 0.65$. See Table 1 in Approach Paper for further details.

	Hyper arid	Hyper arid & arid	Arid	Arid & Semi-arid	Semi-arid	Dry sub-humid
	Algeria, Yemen	Chad, Mali	Afghanistan, Botswana, Djibouti, Eritrea, Jordan, Namibia, Pakistan, Tunisia, Turkmenistan, Uzbekistan	Ethiopia, Kenya, Mexico, South Africa	Angola, Armenia, Burkina Faso, Eswatini, India, Turkey	
		Chad, Sudan	Cabo Verde, Eritrea, Jordan, Mongolia, Tunisia, Uzbekistan	Argentina, China, Ethiopia, South Africa, Tajikistan	Azerbaijan, Burkina Faso, Eswatini, Lesotho, Paraguay, South Sudan, Tanzania, Zambia, Zimbabwe	Malawi, Mozambique
	Niger	Mali, Sudan	Botswana, Cabo Verde, Eritrea, Iraq, Jordan, Namibia, Somalia	Ethiopia, South Africa	Angola, Eswatini, Lesotho, Nigeria, South Sudan, Tanzania, Zambia, Zimbabwe	Benin, Mozambique
	Chile, Niger		Eritrea, Mongolia, Somalia	Argentina, Mexico	Burkina Faso, Gambia, Lebanon, Nigeria, Paraguay, Senegal, Tanzania, Zimbabwe	Benin, Malawi, Moldova, Mozambique
	Chile, Yemen		Cabo Verde, Iraq, Kazakhstan, Turkmenistan, Uzbekistan	Argentina, China, Kenya, Tajikistan	Armenia, Azerbaijan, India, Kyrgyzstan, Macedonia, Turkey	Malawi
	Algeria, Mauritania, Niger	Chad, Mali	Botswana, Djibouti, Namibia, Somalia	Kenya	Azerbaijan, Burkina Faso, Gambia, Nigeria, Paraguay, Zimbabwe	Benin
	Algeria		Iraq, Kazakhstan, Mongolia, Tunisia	China, Mexico	Lebanon, Lesotho, Macedonia, Nigeria, Paraguay, Senegal, Tanzania	Malawi, Moldova
			Afghanistan, Mongolia, Pakistan	Tajikistan	India, Macedonia, Turkey	Moldova, Mozambique
	Chile, Mauritania, Niger		Afghanistan, Kazakhstan		Armenia, Kyrgyzstan, Macedonia, Zambia	
	Mauritania	Sudan	Djibouti		Angola, Gambia, Senegal, South Sudan	

Source: own elaboration based on *UNEP Atlas of Our Changing Environment* publications series for countries in Africa, Latin America, and the Caribbean and Arab regions, and *World Bank Systematic Country Diagnostic* reports for countries in Europe and Asia, and Trabucco, A., and Zomer, R.J. 2018. Global Aridity Index and Potential Evapotranspiration (ET₀) Climate Database v2. CGIAR Consortium for Spatial Information.

Step 3: Linking completed projects' performance, environmental challenges addressed, and aridity clusters

The selection of country case studies drew upon 71 national, regional, and global projects that were completed between 2011 and 2020 and which had a Terminal Evaluation available as of September 30, 2022. Projects were classified as: (i) having both outcome and sustainability ratings in the positive range; (ii) having both outcomes and sustainability ratings in the negative range; (iii) having either positive outcome and negative sustainability ratings, or the inverse (i.e., “neutral”); and (iv) not having either outcome or sustainability ratings, or both (i.e., “no rating”) (Table 1).¹²

Table 4: Projects' ratings distribution

Project	Outcome and likely sustainability ratings				Total
	Both Positive	Both Negative	Neutral*	No Rating**	
Country	20	4	15	15	54
Regional	5	2	1	3	11
Global	6	0	0	0	6
Total	31	6	16	18	71

* Positive outcome and negative sustainability, or negative outcomes and positive sustainability

** Projects without either outcome rating, sustainability rating, or both.

Source: own elaboration based on GEF/IEO Annual Performance Review -Terminal Evaluations- Dataset.

Subsequently, relevant project documentation (Terminal Evaluation, Project Implementation Reports, CEO endorsement, etc.) was reviewed to identify the main environmental challenges that were addressed at the project level. The combination of this data with performance ratings and aridity clusters yielded the matrix presented as Table 2.

In Table 2, projects in the positive range for outcome and sustainability were assumed to have been *successful* in addressing the environmental challenge(s) they were designed to tackle. Similarly, projects in the negative range were assumed to have been *unsuccessful* in doing so. For projects with mixed positive and negative ratings for outcomes and sustainability (i.e., *Neutral*), or those with missing rating(s) (i.e., *No rating*), no assumption can be made at this stage about their success or failure in addressing the environmental challenge(s) they were designed to tackle.

¹² For outcome ratings, the positive range includes “highly satisfactory”, “satisfactory” and “moderately satisfactory” ratings; the negative range includes “moderately unsatisfactory”, “unsatisfactory” and “highly unsatisfactory” ratings. For sustainability ratings, the positive range includes “likely” and “moderately likely” ratings; the negative range includes “moderately unlikely” and “unlikely” ratings.

As regional and global projects often cover countries in different aridity clusters and thus, they are not linked to a specific aridity cluster, they were not considered in the country case studies selection process.

Table 2. Linking completed projects with aridity clusters, environmental challenges addressed, and performance ratings.

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction		
Hyper arid	Chile	4330		X										Successful
	Chile	4104	X	X				X		X				No Rating
	Mauritania	3379	X					X						Successful
	Mauritania	5792	X	X				X						No Rating
	Niger	3381	X					X						No Rating
	Niger	3382	X					X						Neutral
	Niger	3383	X											Successful
Hyper arid & Arid	Chad	4908			X			X						No Rating
	Mali	3377	X			X								No Rating
	Mali	4822			X									Successful
	Mali	5270	X	X		X								No Rating
Arid	Afghanistan	4839	X	X	X			X						Neutral
	Botswana	4751	X	X										Neutral

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction		
Aridity Cluster	Djibouti	3529	X							X				Neutral
	Eritrea	3362	X											Neutral
	Eritrea	3364	X			X								Unsuccessful
	Kazakhstan	5699	X				X							Successful
	Mongolia	4744	X	X		X								Successful
	Namibia	5343			X			X						Neutral
	Pakistan	4754	X				X		X					No Rating
	Uzbekistan	4600	X		X		X	X						Neutral
	Uzbekistan	4642	X							X				Neutral
Arid & Semi-arid	China	3484	X											Successful
	China	3608			X			X						Neutral
	Ethiopia	2794	X			X								Successful
	Ethiopia	3367	X		X									Successful
	Ethiopia	5220	X			X				X				No Rating

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction		
	Kenya	3370	X			X		X						Successful
Semi-arid	Angola	4720	X		X		X							Neutral
	Armenia	5353	X			X								Successful
	Azerbaijan	4261			X			X	X					Unsuccessful
	Azerbaijan	4332	X		X	X								Unsuccessful
	Azerbaijan	9795	X		X	X								No Rating
	Burkina Faso	5187		X	X									No Rating
	Eswatini	3390	X	X	X									Successful
	Gambia	3368	X											Successful
	India	3468	X					X						No Rating
	India	3469	X	X										Successful
	India	3470	X	X	X									Successful
	India	3471	X	X						X				Successful
	India	3472	X	X	X	X								Neutral

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction	
	Lebanon	3028	X			X							Neutral
	Lebanon	5229	X						X		X		Successful
	Lesotho	3372	X										Neutral
	Nigeria	3384	X			X	X			X			Unsuccessful
	Paraguay	2690	X	X		X							Successful
	Senegal	2268	X	X									No Rating
	Senegal	3385	X										Neutral
	Senegal	3386	X						X				No Rating
	Senegal	5449	X		X								No Rating
	Tanzania	3391	X			X	X						Successful
	Tanzania	5463	X			X			X			X	Successful
Dry sub-humid	Benin	5215	X	X		X							No Rating
	Malawi	3376	X			X			X				Neutral
Regional		2139	X										Successful

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction		
Regional		2184	X											Successful
Regional		2505	X	X		X								Unsuccessful
Regional		3396	X				X							Neutral
Regional		3399								X	X			No Rating
Regional		3403	X	X			X							Unsuccessful
Regional		3626		X						X				Successful
Regional		3819	X	X		X								Successful
Regional		4750	X	X		X								Successful
Regional		5556			X			X						No Rating
Regional		5723			X			X						No Rating
Global		3449			X									Successful
Global		3882			X			X						Successful
Global		4533			X			X						Successful
Global		4806	X	X	X									Successful

Aridity Cluster	Country	GEF ID	Environmental Challenges										Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	Threats to marine resources	Pollution	Mining and other forms of resource extraction		
Global		4922	X				X	X						Successful
Global		9163	X											Successful

Source: own elaboration based on GEF/IEO Annual Performance Review -Terminal Evaluations- Dataset and Project documents from GEF Portal.

Step 4: Pre-selection of country case studies

Based on the results from Step 3, candidate countries within each aridity cluster were pre-selected, giving priority to those with the highest number of completed projects. The number of ongoing projects (at least two), country coverage through regional projects, and travel advisories were considered in a complementary way to inform the process. Countries that have already been covered as case studies or through scoping missions in the Africa Biomes SCCE (Mauritania, Mali, Nigeria, and Senegal) and in the Least Developed Countries SCCE (Tanzania) were excluded. China and India were also excluded because they have been or are being extensively covered in major GEF IEO evaluations completed in the last 3 to 5 years (on programmatic Approaches, Multiple Benefits, and in the 2017 and 2021 IAPs and IPs formative evaluations). Overall, the pre-selection sought a balanced representation of (i) aridity clusters, (ii) dryland-related environmental challenges, (iii) performance ratings (preferably in the positive and negative ranges), and (iv) GEF world regions. Table 3 below presents the list of pre-selected countries that resulted from the application of these criteria.

Table 3. Pre-selected countries for case studies¹³

Aridity Cluster	Country	GEF ID	Environmental Challenges						Performance Rating	
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters		Water scarcity
Hyper arid	Chile	4330		X						Successful
	Chile	4104	X	X			X		X	No Rating
	Niger	3381	X				X			No Rating
	Niger	3382	X				X			Neutral
	Niger	3383	X							Successful
Hyper arid & Arid	Chad	4908			X			X		No Rating
Arid	Eritrea	3362	X							Neutral
	Eritrea	3364	X			X				Unsuccessful
	Uzbekistan	4600	X		X		X	X		Neutral
	Uzbekistan	4642	X						X	Neutral
Arid & Semi-arid	Ethiopia	2794	X			X				Successful
	Ethiopia	3367	X		X					Successful

¹³ Information on “threats to marine resources”, “pollution” and “mining and other forms of resource extraction” is omitted in this table given their low frequency.

Aridity Cluster	Country	GEF ID	Environmental Challenges							Performance Rating
			Land Degradation	Threats to biodiversity	Climate Change	Deforestation	Desertification	Natural disasters	Water scarcity	
	Ethiopia	5220	X			X			X	No Rating
Semi-arid	Azerbaijan	4261			X			X	X	Unsuccessful
	Azerbaijan	4332	X		X	X				Unsuccessful
	Azerbaijan	9795	X		X	X				No Rating
	Lebanon	3028	X			X				Neutral
	Lebanon	5229	X						X	Successful
Dry sub-humid	Benin	5215	X	X		X				No Rating
	Malawi	3376	X			X			X	Neutral

Source: own elaboration based on the GEF IEO Terminal Evaluations dataset and project documents from GEF Portal.

Step 5: Selection of country case studies

Drawing on the pre-selected countries from Table 3, a decision was made for each aridity cluster:

- Regarding the “Hyper arid” cluster, both Niger and Chile were selected. While Niger was the best option when applying the criteria described in Step 4, Chile was included to ensure the representation of Latin America and the Caribbean region through case studies.
- In the “Hyper arid & arid” cluster, the only option, Chad, was excluded due to its relatively low number of projects (one completed and two ongoing) and to avoid overrepresentation of Central Africa. This cluster only has three countries (Chad Sudan and Mali) in two of which there are projects (Chad and Mali) and Mali was already visited for the African Biomes SCCE.
- In the “Arid” cluster, Uzbekistan was selected over Eritrea to achieve representation of Central Asia. Furthermore, Eritrea was avoided because it belongs to the Horn of Africa, like Ethiopia, the country selected within the “arid and semi-arid” cluster (see below).
- In the “Arid and semi-arid” cluster, Ethiopia was the only country remaining after applying the criteria in Step 4.
- In the “Semi-arid” cluster, Azerbaijan was preferred over Lebanon because of its largest number of projects and because it provides the only opportunity to assess projects with negative performance ratings.
- Finally, in the “Dry sub-humid” cluster, Malawi was selected over Benin to achieve representation of Southern Africa.

Step 6: Cross-checking project sites

As a final step, project sites in the six selected countries were geolocated to examine the aridity index at site levels. The objective was to identify and avoid any projects whose interventions were only located in humid areas and confirm that the project sites to choose from for field visits are representative of the different aridity typologies. Based on the outcomes of this process, GEF ID 3367 (Ethiopia) and GEF ID 4330 (Chile) were excluded from the selection because their interventions are only in humid areas.

Regarding the distribution of project sites by types of aridity, the following can be specified:

- Among completed projects, there are in total 44 project sites: 43% are in “arid” areas, 25% are in “semi-arid” areas and 11% are in “dry sub-humid” areas. The remaining 21% are in “humid” areas.
- Among ongoing projects, there are in total 58 project sites: 43% are in “arid” areas, 16% are in “semi-arid” areas, 17% are in “dry sub-humid” areas and 2% are in “hyper-arid” areas. The remaining 22% are in “humid” areas.

The final selection results are presented in Annex 1, 2 and 3.

Annex 1: Case study countries and relevant completed projects

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*					Environmental Challenges**	Performance ratings
					(% of project sites within each aridity type)						
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>		
Hyper arid	4104	World Bank	Chile	Sustainable Land Management	-	40%	20%	-	40%	LD, TB, DES, WS	<i>No Rating</i>
	3381	UNDP	Niger	SIP: Oasis Micro-Basin Sand Invasion Control in the Goure and Maine Regions (PLECO)	-	100%	-	-	-	LD, DES	<i>No Rating</i>
	3382	World Bank	Niger	SIP: Community Driven SLM for Environmental and Food Security	-	100%	-	-	-	LD, DES	<i>Neutral</i>
	3383	IFAD	Niger	SIP: Agricultural and Rural Rehabilitation and Development Initiative (ARRDI)	-	100%	-	-	-	LD	<i>Successful</i>
Arid	4600	UNDP	Uzbekistan	Reducing Pressures on Natural Resources from Competing Land Use in Non-irrigated Arid Mountain, Semi-desert and Desert Landscapes	-	50%	50%	-	-	LD, CC, DES, ND	<i>Neutral</i>

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*					Environmental Challenges**	Performance ratings
					(% of project sites within each aridity type)						
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>		
	4642	World Bank	Uzbekistan	Sustainable Agriculture and Climate Change Mitigation Project	-	57%	43%	-	-	LD, WS	<i>Neutral</i>
Arid & Semi-arid	2794	World Bank	Ethiopia	SIP: Country Program for Sustainable Land Management (ECPsLM)	-	0%	17%	33%	50%	LD, DEF	<i>Successful</i>
	5220	World Bank	Ethiopia	PSG: Sustainable Land Management Project 2	-	0%	17%	17%	67%	LD, DEF, WS	<i>No Rating</i>
Semi-arid	4261	UNDP	Azerbaijan	Integrating climate change risks into water and flood management by vulnerable mountainous communities in the Greater Caucasus region of Azerbaijan	-	50%	50%	-	-	CC, ND, WS	<i>Unsuccessful</i>
	4332	UNDP	Azerbaijan	Sustainable Land and Forest Management in the Greater Caucasus Landscape	-	-	50%	50%	-	LD, CC, DEF	<i>Unsuccessful</i>

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*					Environmental Challenges**	Performance ratings
					(% of project sites within each aridity type)						
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>		
	9795	FAO	Azerbaijan	Forest Resources Assessment and Monitoring to Strengthen Forest Knowledge Framework in Azerbaijan	-	-	50%	50%	-	LD, CC, DEF	<i>No Rating</i>
Dry sub-humid	3376	UNDP	Malawi	SIP: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin	-	-	100%	-	-	LD, DEF, WS	<i>Neutral</i>

*Note: Colors used in each column follow the color code for aridity types/aridity index used in “Figure 2: Global Aridity Index Map” from the Approach Paper (p. 12). For each project, color intensity is positively correlated with the share of sites located in such aridity type.

**Note: LD = Land Degradation, DES= Desertification, DEF = Deforestation, TB = Threats to Biodiversity, CC = Climate Change, ND = Natural Disasters, WS = Water Scarcity.

Source: own elaboration based on GEF/IEO Annual Performance Review -Terminal Evaluations- Dataset and Project documents from GEF Portal.

Annex 2: Case study countries and relevant ongoing projects

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*				
					<i>(% of project sites within each aridity type)</i>				
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>
Hyper arid	5135	UNEP	Chile	Protecting Biodiversity and Multiple Ecosystem Services in Biological Mountain Corridors in Chile's Mediterranean Ecosystem	-	50%	50%	-	-
	10718	FAO	Chile	Restoration of biodiversity and ecosystem services at the landscape scale on productive agroforestry areas and their natural environment	-	17%	17%	17%	50%
	5252	World Bank	Niger	GGW: Third Phase of the Community Action Program	-	100%	-	-	-
	5436	World Bank	Niger	Disaster Risk Management and Urban Development Project	-	100%	-	-	-
	9136	IFAD	Niger	Niger: Food-IAP: Family Farming Development Programme (ProDAF)	-	100%	-	-	-

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*				
					<i>(% of project sites within each aridity type)</i>				
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>
	9405	UNEP	Niger	Integrated Management of Oasis Ecosystems of Northern Niger (IMOIE -NN)	33%	67%	-	-	-
	9497	AfDB	Niger	LCB-NREE Niger child project: Improving Sustainable Management of Natural Resources in Niger's Diffa Region	-	100%	-	-	-
	10420	IFAD	Niger	Promoting Sustainable Agricultural Production and Conservation of Key Biodiversity Species through Land Restoration and Efficient Use of Ecosystems in the Dallol Bosso and Surrounding Areas (PROSAP/COKEBIOS)	-	100%	-	-	-
Arid	10367	FAO	Uzbekistan	Sustainable Forest and Rangelands Management in the Dryland Ecosystems of Uzbekistan	-	100%	-	-	-
	10601	FAO	Uzbekistan	Food System, Land Use and Restoration Impact Program in Uzbekistan	-	100%	-	-	-

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*				
					<i>(% of project sites within each aridity type)</i>				
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>
Arid & Semi-arid	9135	UNDP	Ethiopia	Food-IAP: Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience	-	29%	14%	43%	14%
	10243	UNDP	Ethiopia	Preventing forest loss, promoting restoration and integrating sustainability into Ethiopia's coffee supply chains and food systems	-	-	25%	25%	50%
Semi-arid	10708	FAO	Azerbaijan	Towards a Land Degradation-Neutral Azerbaijan	-	67%	33%	-	-
Dry sub-humid	3375	World Bank	Malawi	SIP: Agriculture Sector Development Programme - Support to SLM (ADP-SLM)	-	-	17%	33%	50%
	9138	IFAD	Malawi	Food-IAP: Enhancing the Resilience of Agro-Ecological Systems (ERASP)	-	-	-	25%	75%
	9842	World Bank	Malawi	Shire Valley Transformation Program - I	-	-	50%	-	50%

Aridity Cluster	GEF ID	Agency	Country	Project Title	Aridity at the project level*				
					<i>(% of project sites within each aridity type)</i>				
					<i>Hyper arid</i>	<i>Arid</i>	<i>Semi-arid</i>	<i>Dry sub-humid</i>	<i>Humid</i>
	10254	FAO	Malawi	Transforming landscapes and livelihoods: A cross-sector approach to accelerate restoration of Malawi's Miombo and Mopane woodlands for sustainable forest and biodiversity management	-	-	33%	67%	-

*Note: Colors used in each column follow the color code for aridity types/aridity index used in “Figure 2: Global Aridity Index Map” from the Approach Paper (p. 12). For each project, color intensity is positively correlated with the share of sites located in such aridity type.

Source: own elaboration based on project documents from GEF Portal.

Annex 3: Case study countries and relevant regional projects

GEF ID	Agency	Participating countries	Project Title	Project Status <i>(As of August 2022)</i>
3872	WB	Ethiopia , Kenya, Madagascar, Niger , Uganda, Congo DR	SIP: Monitoring Carbon and Environmental and Socio-Economic Co-Benefits of BioCF Projects in SSA	Financially Closed
4740	FAO	Burkina Faso, Cabo Verde, Chad, Gambia, Guinea-Bissau, Mali, Mauritania, Niger , Senegal	Disposal of Obsolete Pesticides including POPs and Strengthening Pesticide Management in the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) Member States	Project Implemented
5487	AfDB	Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Niger , Nigeria	Integrated Development for Increased Rural Climate Resilience in the Niger Basin	Under Implementation
9094	FAO	Tajikistan, Turkey, Turkmenistan, Uzbekistan , Kazakhstan, Kyrgyz Republic	Integrated Natural Resources Management in Drought-prone and Salt-affected Agricultural Production Landscapes in Central Asia and Turkey (CACILM2)	Under Implementation
9825	UNEP	Burkina Faso, Ethiopia , Niger , Senegal	Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries	Under Implementation

Source: own elaboration based on Project documents from GEF Portal.

TECHNICAL DOCUMENT 6 - AZERBAIJAN CASE STUDY REPORT

Introduction

- i. This Azerbaijan Case Study is part of the Strategic Country Cluster Evaluation (SCCE): Global Environment Facility (GEF) Support to Drylands Countries. Case studies are a main component of the SCCE to enable in-depth exploration of the factors driving performance and sustainability of drylands-related interventions. Case studies focus on the two overarching evaluation objectives:
 - (i) assessing the relevance and coherence of GEF investments in dryland countries, and
 - (ii) assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.
- ii. Azerbaijan was one of six case study countries chosen for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country.

Methodology

- iii. The Azerbaijan Case Study built on document reviews, portfolio and geospatial analyses conducted in-house by the GEF IEO before the mission in the country. The case study used a mixed methods approach, with desk reviews of project and country documents, complemented by interviews with representatives of the Government of Azerbaijan, implementing agencies and project staff, external experts, and beneficiaries. A national consultant visited pilot site areas in the Shamakhi and Ismayilli regions for GEF ID 4332 and Agdash and Gakh-Sheki regions for GEF ID 9795. During the pilot site visits, local project coordinators and technical staff, government officials, project beneficiaries and other community members were interviewed (see Annex 1 for list of interviewees and sites visited). Direct observations were also made of pasture and forest areas that had undergone rehabilitation measures, in both projects. Data from geospatial analysis was reviewed during the field visits, with the goal of facilitating discussion on factors that contributed to observed changes. Additional geospatial analysis was performed by the GEF IEO post-mission, examining environmental outcomes in the specific sites visited by the national consultant.
- iv. Limitations faced included the challenge of finding government officials who worked on or with the project and were still in the same institutions (at the national and district levels), given that two projects closed nearly five years ago (GEF IDs 4332 and 4261), and a second project closed over two years ago (GEF ID 9795). The team received substantial and excellent support from United Nations Development Programme (UNDP) and Food and Agriculture Organization (FAO) staff; they connected the evaluation team with former local project coordinators, who played an instrumental role in helping the team identify and interview involved project staff and beneficiaries. For GEF ID 4332, a further limitation was the notably poor quality of the project's terminal evaluation, which did not present a strong evidence basis for its findings or ratings, nor did it provide an independent assessment of project results.

Scope

- v. The Azerbaijan Case Study covered four projects, as shown in Table 5. Among the four projects, the case study focused somewhat more on GEF IDs 4332 and 9795 given their emphasis on dryland forests and pasturelands, and somewhat less on GEF ID 4261 given national expert input that most project sites were not centered on drylands geographies, and on GEF ID 10708, since the project only received approval by the Government of Azerbaijan during the time of the mission.

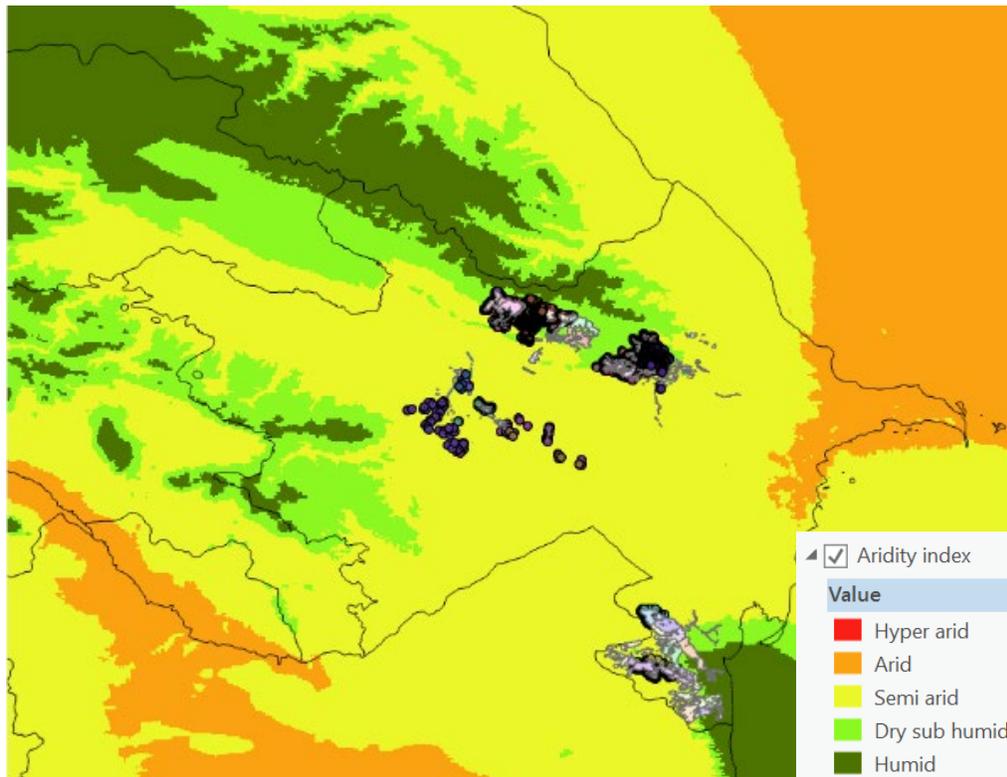
Table 5. GEF Projects Included in the Azerbaijan Case Study

GEF ID	Agency	Project Title	Focal Area	Status	GEF Phase	Project Dates	Type
4261	UNDP	Integrating climate change risks into water and flood management by vulnerable mountainous communities in the Greater Caucasus region of Azerbaijan	Climate Change	Closed	GEF4	2012 – 2017	Full-size Project
4332	UNDP	Sustainable Land and Forest Management in the Greater Caucasus Landscape	Multi Focal Area	Closed	GEF5	2013-2018	Full-size Project
9795	FAO	Forest Resources Assessment and Monitoring to Strengthen Forest Knowledge Framework in Azerbaijan	Multi Focal Area	Closed	GEF6	2017-2021	Medium-size Project
10708	FAO	Towards a Land Degradation-Neutral Azerbaijan	Land Degradation	CEO Endorsement Cleared	GEF7	NA	Full-size Project

- vi. The Integrating Climate Change Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region of Azerbaijan project (hereafter referred to as the WFM project, GEF ID 4261) targeted the Greater Caucasus region that is vulnerable to both water stress and flooding. This region includes semi-arid, dry sub-humid, and humid areas, with activities related to flooding targeted more in humid areas like Gabala.
- vii. The Sustainable Land and Forest Management in the Greater Caucasus Landscape project (hereafter referred to as the SLFM project, GEF ID 4332) targeted two rayons (or districts) in the Greater Caucasus Mountains of northwest Azerbaijan. This area includes both dryland forests and pasturelands that are prone to degradation from over-grazing, with steep upper catchments and upper riverbeds and a history of increasing problems related to erosion. The project concentrates on the summer pastures of Ismayilli rayon, winter pastures of Shamakhi rayon, and forest lands and river valleys of both rayons. Semi-arid areas dominate the lower elevation lands, moving to dry sub-humid and humid forests at mid-elevations, and a cold mountain environment in summer pastures at the higher elevations. For the purposes of this evaluation, all project areas were considered as relevant for learning lessons on environmental, socioeconomic, and governance issues for drylands.
- viii. The Forest Resources Assessment and Monitoring to Strengthen Forest Knowledge Framework in Azerbaijan (hereafter referred to as the Forest Resources project, GEF ID

9795) targeted two largely forested rayons, Agdash, which is along the Kura River, and Gakh in the mountainous northwest. The project intervention sites are located primarily in dry sub-humid and semi-arid zones, as shown in Figure 7. The LDN project (GEF ID 10708) will focus on the Kur-Azaz dry lowlands, primarily in the Absheron Peninsula and surrounding lands, which include higher lands, forests, pastures and croplands.

Figure 6. Project intervention sites for GEF ID 9795, mapped against aridity index



Source: Analysis by GEF IEO, using project intervention shapefiles provided by FAO.

Findings

- ix. The findings are presented according to the key questions as follows: relevance and coherence, including policy coherence; environmental results and socioeconomic co-benefits; sustainability; and gender, resilience, and private sector.

Relevance and Coherence

- x. GEF drylands programming in Azerbaijan has been relevant to the country's key dryland-related environmental challenges, including land degradation, desertification, and climate variability; while water scarcity was given less attention in earlier GEF-5 and GEF-6 interventions, it is a focus area in GEF-7. Land degradation is severe in Azerbaijan, spanning the country's highly diverse ecosystems from semi-deserts and dry lowlands to dry steppe and mountain tundra, to temperate high mountain regions. Much of the country faces water shortages, with 77 percent of the population living in either rain-fed areas with high drought frequency or irrigated areas with high water stress.¹⁴ The

¹⁴ FAO, "FAO – GEF Project Document," (2020). GEF ID 10708.

drivers of degradation also vary by sub-regions. The SLFM and Forest Resources projects targeted a key driver in the mountainous regions—over-grazing in pasture lands and illegal grazing in forest lands—while the LDN project targets the Kur-Azaz lowlands, which face aridity, heat, salinization, and wind erosion. A key interviewee confirmed that addressing irrigation and agriculture in the Azeri lowlands, as the LDN project will do, is highly important support from the GEF. All three projects focus on SLM and SFM measures to rehabilitate degraded lands and improve livelihoods and community and ecosystem resilience.

- xi. Interviews confirmed that water scarcity and management is one of the top priorities in the government’s environmental agenda, and that food and agriculture are the main sectors suffering. The WFM project had a dual focus on (1) disaster risk reduction due to potential flooding, and (2) water management in terms of irrigation and groundwater—but the project suffered from an overambitious design and unclear rationale for the dual focus, which resulted in the project being less effective on both foci. The SLFM project included an objective to secure downstream water provisioning services through upstream SLFM practices, although no monitoring was performed to determine whether this objective was met.
- xii. The LDN project explicitly plans actions to address water scarcity in agricultural applications, including through improved irrigation technologies (such as drip irrigation in extremely low precipitation areas) and agroforestry. Some of these lessons emerged from the earlier Forest Resources project, which applied canal rather than drip irrigation in areas that have faced increasing water scarcity in recent years, according to project staff and evaluation team observations during post-project site visits. The LDN project also targets areas that are priorities for the Government of Azerbaijan to address water scarcity, particularly the semi-desert and rural areas in the Absheron peninsula—where the Government is also investing its own resources for greening efforts and agricultural support.
- xiii. None of the dryland’s projects in Azerbaijan explicitly focus on biodiversity, but they anticipate co-benefits and demonstrate alignment with actions in the National Strategy of the Republic of Azerbaijan on Conservation and Sustainable Use of Biodiversity (NBSAP) for 2017–2020, which highlights aspects of agricultural development and the importance of sustainable use of forests and strengthening the role of local communities in forest management. Summer pastures in Azerbaijan are seen as having “outstanding value for biodiversity.”¹⁵ The LDN project plans to work in coordination with other FAO initiatives focused on biodiversity in the country, and one of the project implementation landscapes has been identified as particularly rich in biodiversity, including migratory birds, which would benefit from restored lands.
- xiv. **Several of the solutions introduced in GEF projects were innovative at the time and in the national context.** The Forest Resources project launched the first systematic national-level forest inventory in Azerbaijan. The SLFM project piloted a payment for ecosystem services (PES) approach that was new to the country – providing incentives

¹⁵ GIZ, “Monitoring Manuel for Summer Pastures in the Greater Caucasus in Azerbaijan,” *Sustainable Management of Biodiversity, South Caucasus*. (2020).

to large-scale, mobile pastoralists in return for delaying their movement from winter to summer pastures—as well as afforestation methods not used before in Azerbaijan, such as a broad mix of species, fencing, and row ploughing to reduce carbon emissions.¹⁶ The LDN project will seek to better break down landscape management silos, which are currently compartmentalized across multiple ministries and levels of administration (see also section below on natural resource governance). The LDN project also plans to introduce innovative SLM practices that have not been widely demonstrated in Azerbaijan, through holistically addressing land and water issues on the Absheron Peninsula.¹⁷

- xv. **The drylands projects are fully aligned with the strategic priorities of the Government of Azerbaijan**, as articulated through policies such as the State Programme on Poverty Reduction and Sustainable Development (2008-2015), Strategic Road Map for the agricultural production and processing in the Republic of Azerbaijan (2016-2020), National Program on Rehabilitation and Expansion of Forests (2003) and the draft second National Forest Programme 2015-2030 (forest policy statement and action plan). Later projects are also seen as aligned with Azerbaijan’s climate commitments through its Nationally Determined Contribution (NDC), in which the country pledged to reduce its greenhouse gas emissions by 35 percent by 2030 relative to its 1990 emissions. The SLFM project helped introduce the IPCC’s updated carbon pool methodology (2006) to the country, which were used for carbon reporting requirements in Azerbaijan’s Fourth National Communication and Second Biennial Update Report. The SLFM project was assessed as strong in adapting its project design to the real needs of Azerbaijan during implementation, and the projects’ continued relevance is reflected in two of the three priority sectors targeted by MENR in the ongoing preparation of Azerbaijan’s National Adaptation Plan (NAP): water and agriculture. Interviewees also noted that Azerbaijan 2030: National Priorities for Socio-Economic Development includes green growth as one of its five priorities, reflecting the aims of GEF projects. Interviewees also noted the Government’s commitment to mass greening efforts, especially around Baku city and the Absheron peninsula.
- xvi. Azerbaijan’s land degradation commitments have deepened over the past ten years, but political commitment has been weak; GEF projects have also reflected and supported this evolution. At the time that the SLFM project was designed and implemented, it addressed policy and technical priorities in MENR’s draft National Action Plan to Combat Desertification (NAPCD), such as relevant policy amendments and pasture inventory methodology. Almost a decade later, Azerbaijan is one of the few countries in the region that does not have a NAPCD and has neither finalized the target setting process of national voluntary LDN targets, nor established an LDN working group. As noted above, multiple interviewees emphasized the importance of addressing water scarcity challenges in Azerbaijan, and the Government has prepared and submitted a National Drought Plan to the UNCCD.

¹⁶ Parnon Group, “Mid-Term Review of Sustainable Land and Forest Management in the Greater Caucasus Landscape (UNDP-GEF SLFM),” (Ministry of Ecology and Natural Resources, Government of Azerbaijan, 2016).

¹⁷ “STAP Guidelines for Screening GEF Projects,” (2020).

- xvii. Support to deepen its land degradation commitments, along with a broader national decision support system for LDN, will be provided within the context of the recent LDN project. In 2019, Azerbaijan joined the international Bonn Challenge on forest landscape restoration and committed to restoring 170,000 ha of forest by 2030, along with restoring an additional 100,000 ha, conditional upon receiving funding under the Bonn Challenge. Azerbaijan has not yet reported progress achieved against these targets, and interviewees were skeptical they would be met. The recent LDN project proposal points to renewed government interest to achieve LDN, however. Improved data will also be an important component to success in combatting desertification. One interviewee, for example, noted that the country lacks reliable data on “ what are the problems for our land, why it is going to semi-desert, and why is drought happening – is it human, is it environment?” Soil mapping efforts are being pursued with UNCCD.
- xviii. A weaker political commitment to addressing land degradation issues likely contributed to the lack of full government buy-in experienced by the SLFM and Forest Resources projects, at different levels of administration. All three projects received substantially less co-financing than planned from the Government of Azerbaijan, in part due to a reduction in government revenues stemming from a drop in oil prices, and this affected results achievement. The Government of Azerbaijan has generally allocated quite limited funds to the forest sector and no significant national budget allocations to LDN, although this situation is changing, with increasing targets and associated budgets for reforestation.¹⁸ The SLFM project in particular suffered from a lack of buy-in related to the use of pasture lands, due to the decentralized and uncertain distribution of responsibilities across different government institutions, including at multiple levels of governance. For example, land lease was under the responsibility of the rayon-level government, while the number of sheep and monitoring of biodiversity protection was under the local representatives of the MENR, and animal productivity and health condition monitoring was the purview of the Ministry of Agriculture. Key interviewees noted that the project faced a lack of understanding and involvement from some local authorities. In one rayon, Shamakhi, where the project intervention sites were located in semi-arid part of the rayon, the local government did not water the trees planted, and they died. The Forest Resources project demonstrated strong ownership at the national level, within the Forest Development Department of MENR, but perceptions of ownership varied at the local level.
- xix. Policy misalignment has been identified by multiple GEF projects as one barrier to more sustainable land management, including in drylands areas, and activities have been designed to address some of these issues. The earlier SLFM project included a review of policy inconsistencies, weaknesses, and even misaligned incentives in the project proposal, and developed normative legal acts to address these issues. These included, for example: penalties for under-grazing in the pasture guidelines (Cabinet of Ministers Resolution #42, 2000), up to terminating right of use, with no attention to the potential for over-grazing; a lack of regulatory guidance in the Forest Code on how to handle

¹⁸ FAO, “Terminal Evaluation of the FAO-Global Environment Facility Project Forest Resources Assessment and Monitoring to Strengthen Forest Knowledge Framework in Azerbaijan,” *Decentralized Evaluation Series*. (Budapest: 2022); FAO, “FAO – GEF Project Document.” GEF ID 10708; AzerNews, “Azerbaijan prepares national forest program,” 27 September 2022, available at: <https://www.azernews.az/nation/199931.html>.

grazing management in forest areas that border pasturelands; and bureaucratic challenges in establishing forest and pasture use associations. The SLFM project also attempted to help break down institutional silos at the central ministerial level, as well as support coordination across administrative levels, from national down to local, but these efforts were not fully successful. The new LDN project similarly plans to assess the regulatory framework to identify possible gaps, inconsistencies, weaknesses, and opportunities – through an LDN lens – and to support vertical and horizontal coordination mechanisms.¹⁹ See further discussion on these topics in the section below on Natural Resource Governance.

- xx. GEF projects were highly coherent with related initiatives in Azerbaijan, largely implemented by the same two agencies: UNDP and FAO. The SLFM project worked closely with the EU-UNDP ClimaEast Project (US\$1.3 million), which focused on pasture rehabilitation and carbon and closed in 2017. SLFM's activities were highly integrated with those of ClimaEast. The SLFM also benefited from lessons from an earlier FAO project on sustainable pasture management. The Forest Resources project worked on pasture and forest rehabilitation activities in pilot areas that had not been targeted by other international organizations, and there was no evidence at the time of project closure of other donors implementing similar interventions (e.g., focused on the national forestry inventory and mapping for forest management plans). This project was, however, coherent with other FAO technical cooperation projects, such as those focused on helping the Government of Azerbaijan develop a second national forestry program and on integrating forest pollinators into forest management planning and biodiversity considerations. Farmers in the region benefitted from both GEF support and these other FAO interventions. This trend has carried forward, with FAO implementing many complementary projects that can help reinforce the results of the current LDN project, such as technical cooperation projects on “Improved water governance: towards sustainable agricultural development”, “Catalyzing the efficiency and sustainability of Azerbaijan’s hazelnut sector”, “Development and application of sustainable sheep production and food value chains”, and the pipeline project “Improving reforestation for development and environmental sustainability.”
- xxi. In terms of the role for the GEF in drylands, interviewees emphasized the importance of GEF funding as providing relatively sizeable resources in the country, compared to other development partners. At the same time, extensive financial resources would be required to restore drylands nationwide, beyond the capacity of the GEF, and thus one interviewee highlighted the importance of government ownership of drylands initiatives, with the GEF bringing in innovations and catalyzing action. GEF support has also appeared to follow Government priorities in terms of geographical targeting, from the Great Caucasus region in the three earlier projects (covering semi-arid, dry sub-humid, and even humid areas), to the more arid areas of the Absheron peninsula in the latest LDN project, with a renewed emphasis on addressing water scarcity and security concerns, as well as pollution from oil and gas products.

¹⁹ While the LDN project document does not specifically reference building on the earlier SLFM review, staff involved in the SLFM project were consulted during the design of the LDN project.

Environmental Results, Socioeconomic Benefits, and Sustainability

- xxii. For the GEF projects in Azerbaijan, environmental and socioeconomic benefits are closely intertwined, with the former largely dependent on the incentive that the latter provides. The SLFM project and the Forest Resources project had some similar components, activities, and results although with different emphases – particularly, a stronger emphasis on policy and pasturelands in the SLFM project, and on forests and inventoring in the Forest Resources project:
- The ambitious **SLFM** project sought to address barriers to sustainable pasture and forest management in the Greater Caucasus Landscape and thereby “secure the flow of multiple ecosystem services, including carbon storage and sequestration and water provisioning services, while ensuring ecosystem resilience to climate change.”²⁰ The project activities were expected to avoid emissions caused by land degradation, increase carbon sequestration through enhanced biomass, and improve land productivity. The project also included activities aiming at improving the policy and institutional environment for SLM and SFM at the national and rayon levels (discussed later in this report under Natural Resource Governance).
 - The similarly ambitious **Forest Resources** project aimed to showcase SFM through an integrated approach including multi-functional and integrated forest management plans supported by participatory SFM mechanism that includes pasture rehabilitation, wood and non-wood production, rehabilitation, restoration, and afforestation. A key activity was the development of an information and monitoring system to provide nation-wide information on forest resources.
 - The **WFM** project aimed to reduce the vulnerability of the communities of the Greater Caucasus region of Azerbaijan to water stress and hazards by improved water and flood management. Ultimately, however, outputs and outcomes related to managing scarce water resources were not achieved, due to lack of capacity in water use associations and an overly ambitious and fragmented project design. The Terminal Evaluation concluded that the climate resilient status improvement, environmental stress reduction, and progress toward stress/status change were all minimal.²¹

Sustainable forest management

- xxiii. The Forest Resources project provided substantial support for improving the data on forests and forest cover, which was identified as a major barrier to more effective forest legislation and policy implementation, as well as to national and local level planning and management. The last forest inventory in Azerbaijan had been conducted in 1988, and current data was incomplete and inconsistent. The project successfully supported the establishment of an SFM General Coordinating Committee and Forest Information Center (GIS laboratory) and received MENR approval for SFM criteria and indicators. The project further developed a GIS database for the National Forest Inventory, in which information from different forest areas were collected, analyzed, classified, and stored

²⁰ UNDP and GEF, “Project Document – Sustainable Land and Forest Management in the Greater Caucasus Landscape,” (UNDP Environmental Finance Services, 2012), p.19.

²¹ UNDP, “Terminal Evaluation Report.” July 9, 2017. GEF ID 4261.

data, that covered 86,600 ha at project completion. The SLFM project had also previously developed inventory guidelines and collected data through forest inventories for 20,000 ha in Ismayilli (dry sub-humid) and Shamakhi (semi-arid) rayons, which was shared with the Forest Resources project team.

- xxiv. Both projects also attempted to build the institutional and individual capacity of stakeholders in forest inventory and geospatial analysis but faced significant challenges. Interviewees explained that the capacity among professional foresters was lower than anticipated at the project's outset. Foresters were not able to utilize the modern GPS equipment purchased by the project and simpler technical tools had to be substituted. Fifteen foresters were trained by the Forest Resources project, although only six or seven of them remained in the forestry profession by the end of the project, according to interviewees. Additional capacity building was supported through a Triangular Cooperation Protocol signed by FAO, the MENR and the General Directorate of Forestry of Turkey, which outlined the level of engagement of Turkish experts to support forest management plan and forest inventory activities.
- xxv. The Forest Resources project also supported the development of the guidelines on multifunctional forest management planning (methodology), using participatory approaches, which were adopted by MENR officially in 2020. Two forest management plans were prepared for Gakh (including dry sub-humid areas in the western part of the rayon²²) and Aghdash (including semi-arid areas in the southern part of the rayon where the project worked²³) regions, covering 103,000 ha under SFM practices, more than double the project target, and 25 local foresters and biodiversity experts were trained. The SLFM project also prepared integrated forest management plans for 20,000 ha in Ismayilli and Shamakhi rayons.²⁴
- xxvi. The Forest Development Department (FDD) of MENR reported that the forest inventorying and management planning approaches have been scaled up since the project close, with a ministerial goal to have nationwide coverage by the end of 2024. To date, 70 percent of the approximately 900,000 ha managed by FDD have been inventoried and 62 percent of forest areas have prepared management plans. Government interviewees indicated that inventory results are now the basis for some updating of regulations and guidelines, and a forest ecosystem management database is in the process of being developed. A new GEF project "Upscaling Global Forest Watch in Caucasus Region" (GEF ID 10050), implemented by the World Resources Institute and Azerbaijan Branch Office of Regional Environmental Center for the Caucasus (RECC), also relies on these inventory results.
- xxvii. Both GEF projects also piloted forest restoration activities that targeted some of the main drivers of forest degradation and small-scale deforestation in the country, primarily over-grazing, and less so livestock raising and illegal cuttings. Project activities primarily entailed (a) fencing to prevent illegal grazing and allow natural restoration and (b) afforestation with fruit trees, although substantially less land area was restored than

²² Other parts of the rayon are humid with intensive forest cover.

²³ Other parts of the rayon are more humid.

²⁴ At the mid-term, it was identified that some inventories had already been prepared by WWF in Ismayilli for Forest Stewardship Council.

planned. This was in part because some government co-financing did not materialize and also because MENR was already committing significant financial and human resources to afforestation in the project rayons, and it was deemed prudent not to replicate these efforts. The Forest Resources project fenced 93 ha of forest land in Kungut forest in Gakh region (compared to a planned 15,300 ha to be achieved with co-financing) and afforested 51 ha in Sheki (mostly dry sub-humid areas) and 50 ha in Agdash (compared to a planned 5,300 ha).²⁵ The SLFM project reported restoring or rehabilitating 4,500 ha, including 625 ha that was afforested (compared to a planned 5,000 ha, again to be achieved with co-financing).

- xxviii. **Site visits by the evaluation team showed evidence that forest restoration has been mostly sustained in these pilot areas**, owing to the productivity of the fruit plantations and the recognition by local forestry units of the value of fencing forests along the roads to avoid illegal grazing by transhumant pastoralists while traveling to pastures as well as grazing by local communities, along with their visual observations of rapid natural forest rehabilitation as a result. Fencing had even been extended along the roadside with local resources. For example, near the FAO project site in Gipchag forestry, the Sheki Regional Forestry Economy Center is constructing fencing to avoid illegal grazing. Five years after SLFM project implementation, the evaluation team observed forest plantations growing mainly oaks in pilot sites near Topchu village and along the road from Ismayilli to Gabala—although GEF IEO geospatial analysis was not able to detect rehabilitation through remote sensing. In the one Forest Resources project pilot area visited, a local forester indicated that the forest management plan prepared is still being implemented. Fruit plantations in Kungut-Sheki and Agdash are in good condition and bearing fruit for local consumption and even sale, although water scarcity has reportedly been a challenge for growing in some areas. The findings of geospatial analysis undertaken by GEF IEO indicated recent positive trends in the normalized difference vegetation index (NDVI)²⁶ and Google Earth images also show evidence of afforestation, confirming visual observations during the mission (see Figure 9).
- xxix. At project close the Kura River was low and affecting farm water planning, which was done by canal irrigation (rather than drip irrigation) by FAO in pilot areas, and post-completion interviews indicated that drought was a challenge.
- xxx. Rehabilitation and modernization efforts for the Absheron seed nursery were successful. Post-completion, the nursery is operational and has been moved, by Decree of the Minister, under the responsibility of the Greening and Landscape Planning OJSC, which is directed to plant and manage trees along highways.

Figure 7. Photographs of forest restoration sites (2023 evaluation mission)

²⁵ FAO, “Terminal Evaluation of the FAO-Global Environment Facility Project,” p. 43. GEF ID 9795.

²⁶ The NDVI analysis was conducted using two sensors: MODIS and Sentinel-2. Weather patterns could have some influence on the data and would require further validation to draw conclusions on vegetation change over time.



Signage and fencing at forest rehabilitation area, Gipchag, Gakh region (Forest Resources project)



Forest afforestation area, Kungut, Sheki (Forest Resources project)



Reforestation area in Tophu, Ismayilli region (SLMF Project, UNDP)

Figure 8. Evidence of afforestation in Agzibir, Agdash regions

Aug 2011

May 2019

Feb 2022



Source: GEF IEO geospatial analysis



*Afforestation area in Agzibir, Agdash region (Forest Resources project),
photo from 2023 evaluation mission*

- xxxi. **Limited information was measured or available on the environmental benefits of these restoration efforts.** For the Forest Resources project, the terminal evaluation reported that it had “obtained no measurable evidence of environmental stress reduction and/or environmental status change caused by the project.”²⁷ The project’s M&E framework did not incorporate soil management indicators to inform reporting on changes in soil quality after afforestation (or pasture rehabilitation) afforestation work;

²⁷ FAO, “Terminal Evaluation of the FAO-Global Environment Facility Project,” p.10. GEF ID 9795.

the GHG emissions avoided that were reported to the GEF were also not directly attributable to the project, according to the terminal evaluation. In the SLFM project, field measurements and remote sensing analysis was used to extrapolate a baseline carbon storage in the Ismayilli and Shamakhi rayons, and follow-up field measurements were done to extrapolate carbon benefits; see discussion in following section on pasture management. National monitoring of the bonitet class of forests²⁸ in SLFM project sites suggested a reduction of 7-8 percent over the project lifetime, which may be a proxy for improved volume and/or density of forests, indicating higher productivity.

- xxxii. In terms of socioeconomic benefits, the SLFM project provided training and skills development in sustainable management and use of forest products, including alternative livelihood support, such as for handicrafts—and was successful in connecting local families with wider markets (see discussion below on Private Sector). The MTR, however, raised questions about whether the income-generating activities were effectively targeted at the same forest users who are engaging in activities that are main drivers for forest degradation, such as illegal grazing and logging. The MTR suggested that those people collecting small NTFPs are not those responsible for grazing in the forest. The project team disagreed with this assessment, explaining that its income-generating activities were targeted toward village populations that graze year-round, including in forest areas; seasonal pasture users only graze intensively during the summer months. The terminal evaluation for the Forest Resources project similarly implied that the income-generating pilot activities were not sufficiently linked with reducing pressures on forest areas (and pasture lands).

Sustainable land management in pasture lands

- xxxiii. The SLFM project, working with its partner ClimaEast, developed pasture mapping, inventories, and management plans for about 9,100 ha of summer and winter pastures in the Ismayilli rayon (dry sub-humid).²⁹ This accounts for 16 percent of the summer pastures in the district, and 100 percent of the winter pastures. The evaluation team's visit to project pilot areas identified local community members who recalled the project activities five years after completion and reported that they paid more attention to grazing of animals because of project training. The project developed and demonstrated cost-efficient methods to conduct pasture inventories and management plans, and shared them with MENR, although the SCCE evaluation team was not able to definitively determine whether those approaches have been used by MENR or MOA in other rayons. One positive indication was a post-project meeting between MENR and companies and institutes with geospatial capabilities. While the project primarily worked with MENR, MOA is responsible for implementing national actions to improve pasture management, according to interviewees. National monitoring data report that actions to improve pasture management were only partially implemented between

²⁸ Bonitet is a measure of the quality of the forest, based on characteristics such as tree growth and size.

²⁹ Originally Shamakhi rayon was also included, but many winter pastures there were converted for crop agriculture after project approval.

2017 and 2020 and focus on assessing the “current situation for pasture inventory,” with no indications that sustainable management plans have been further prepared.³⁰

- xxxiv. Pilot activities to demonstrate improved SLM and restoration practices in pasture lands were successful and moderately sustainable, although no evidence of replication or scaling was identified, and no mechanism was developed to sustain the PES approach. The SLFM project provided direct support for sustainable pasture management through restoration efforts, training, equipment provision, and income-generating activities. Pasture restoration efforts included fencing degraded areas and steep slopes to prevent access and allow natural recovery, sowing degraded areas with locally collected seeds, and contouring, layering and/or filling eroded soils with locally collected brush to allow for natural recovery. Pasture restoration also involved planting of esparset and trifolium pratense, which support both restoration and high-quality honey production, which was also supported by the project. The project also piloted a payment for ecosystem services (PES) approach, whereby transhumant pastoralists were paid to delay their movement from winter to summer pastures, in order to prevent damage to newly planted pasture plants. The evaluation team visited pasture pilot sites near Burovdal municipality in Ismayilli and conducted direct observations and community interviews nearly five years after the project closed. Community members still remembered a visible impact in terms of vegetation in the summer of 2017, when transhumance patterns were delayed, and recalled that they benefitted from additional food for their animals that summer. The PES approach was originally planned to be incorporated into revisions to pasture lease agreements, to sustain these benefits, but there was no indication that this occurred.
- xxxv. The Forest Resources project contracted the Scientific Research Institute on Crop Husbandry within the Ministry of Agriculture to conduct pasture rehabilitation work in 50 ha of pastureland in Zardab region and rehabilitated another 50 ha near Aghzibir village of Aghdash region (semi-arid)—for a total of 100 ha, compared to a planned 1,5000 ha. In Agdash, the evaluation team observed that half of the restored pasture area had been planted with hazelnuts; in the other half, the fodder plants sowed (lucerne) are still visible but small due to limited rain and some continued illegal grazing. The local forest ranger expressed the view that the project-funded planting had improved the soil quality, since hazelnut trees had not been able to grow in the area previously. GEF IEO geospatial analysis shows some limited evidence of vegetation growth over time and steady peaks in NDVI (see Figure 11).

³⁰ “Geobotanical maps and activity cartograms have been prepared by conducting certain geobotanical researches in winter pastures and summer pastures. In addition, individual capacity, productivity of summer and winter pastures and rural pastures, number of small horned animals to be grazed per hectare, quality group, level of difficulty have also been determined. The current situation for pasture inventory has been assessed.” Source: Center for Analysis of Economic Reforms and Communication of the Republic of Azerbaijan, “Monitoring and Evaluation Report of ‘Strategic Road Maps on the National Economy and Key Sectors of the Economy in the Republic of Azerbaijan’ for 2017-2020,” (2021), p. 89.

xxxvi.

Figure 9. Photographs of pasture pilot sites in Ismayilli (2023 evaluation mission)



*Figure 10. Evidence of 50 ha of pasture rehabilitation in Agdash
Photographs from 2023 evaluation mission*



Jul 2013



Feb 2017

Dec 2021



Source: GEF IEO geospatial analysis

- xxxvii. Overall, alternative livelihood activities appear to have been successful in generating sustainable income for local communities, although no monitoring indicators specifically measured this. In addition to the PES approach, the SLFM project training, equipment, and support for alternative livelihoods was provided to incentivize the implementation of the pasture management plans. These included providing pastoralists with grass shredding and milking machines and beehives, along with seminars on topics like animal husbandry and beekeeping. A wax processing workshop in the high-mountain Burovdal community was also established. Evaluation team site visits indicated that some grass shredding and milking machines are still in use. The evaluation team also visited the wax workshop; one key interviewee noted that this workshop has helped increase the number of beekeepers in Burovdal and nearby municipalities, and that beekeepers have a good income from it, because the price of Burovdal honey is higher than that from other places.

Figure 11. Wax workshop in Burovdal (2023 evaluation mission)



- xxxviii. The Forest Resources project demonstrated income generating activities for 10 farmers: seven beekeepers in Aghdash and Gakh regions and three hazelnut growers in Gakh region. The evaluation team’s visit to the Gakh region – 2 years after project close – found that one farmer’s hazelnut seedlings were dried due to inefficient watering; the other two farmers’ hazelnuts are still growing. Beekeepers are also continuing their work and have even increased the amount of bee boxes given to them by the project. Local stakeholders emphasized the importance of scaling up the pasture rehabilitation and afforestation work to improve soil conditions and to address the problem of high levels of soil salinity in Aghdash region in particular.
- xxxix. What has been less definitively demonstrated is the benefit of these activities to improving pastureland quality and associated ecosystem services. The implied theory of change is that alternative sources of income will enable community members to reduce the number of livestock they keep, thereby also reducing overgrazing. It is not clear what level of income would be required to reduce headcounts, although it is expected that in places where significant alternative income was generated (e.g., in Burovdal, where local honey is of high quality and fetching a high price), this could reduce grazing pressures. No monitoring was conducted, however, to determine whether livestock headcounts have been reduced or to ensure that there were no unintended outcomes (e.g., increased income is used to increase livestock counts, or restricting certain forest areas for grazing results in increased pressures on surrounding landscapes).
- xl. In some pasture areas visited by the evaluation team, differences were still visible between pastures restored through planting and fencing and those that were not (see Figure 10), although fencing does not remain. As noted above, the Forest Resources project did not report soil organic carbon levels at completion nor a measure of vegetation cover. SLFM project measurements suggest a potential 11 percent average increase in soil organic carbon in pasture project areas by project close, although because the samples were taken at different depths in different sampling periods, it is difficult to make a direct comparison. The SLFM project also estimated GHG emissions avoided associated with improved pasture management and restoration efforts (and soil and vegetation gains), although these estimates appear to be calculated for the original hectares targeted by the project, rather than the revised targets or actual

achievement.³¹ At the mid-term, the SLFM project team questioned whether pasture rehabilitation would be replicated by MENR, given the cost, and the MTR raised concerns about the value of piloting, from a GEF additionality perspective, if no broader adoption could be expected. Post-completion, these concerns appear to be valid, even if there is moderate evidence that projects have sustained benefits at the pilot level.

Natural Resource Governance

- xli. All GEF projects covered by this case study made efforts to address natural resource governance and policy considerations at multiple administrative levels. Projects struggled to deliver sustainable change, however, and many of the same policy and governance barriers still remain, including the need for intersectoral and vertical coordination.
- xlii. In its original design, in 2011, the SLFM project identified an inadequate legal, regulatory, and institutional framework for sustainable forest and pasture management, as well as inadequate coordination among MENR, MOA, rayon-level administrators, and municipalities, further hampered by minimal experience among those stakeholders in developing and implementing SLFM practices. No mechanism existed to help national ministries collaborate on these issues, nor did one exist to bridge the gap between national ministries and local resource users. The policy landscape, including the Land Code, left the division of responsibilities for land and pasture management unclear among involved institutions, and provided misaligned incentives for overgrazing (e.g., by terminating right for use in the event of under-grazing, as provided in the Guidelines for Allocation and Use of Pastures, Meadows, and Hayfields, adopted in 2000).
- xliii. More than a decade later, similar challenges are being identified as key barriers in the enabling environment for LDN. The LDN project design identifies among its key barriers inadequate policies and strategies, including the continued lack of a NAPCD, and a weak institutional framework governing land management. MENR and MOA still share responsibility for combating land degradation, but there are no permanent mechanisms for cooperation. And vertical coordination between central ministries and local authorities needs strengthening, including to ensure that the voices of underrepresented farmer groups are heard in policymaking.
- xliv. Azerbaijan's Soviet history contributes to these barriers, with top-down approaches to governance and capacity building still prevailing over bottom-up ones. Forest lands in the country are state-owned. State-owned pasture lands can be leased to pastoralists; pasture lands are also owned by municipalities/villages. Thus, property rights tend to be clearer in Azerbaijan than in some other countries, but different challenges and conflicts in natural resource governance arise such as those related to looser monitoring and enforcement of stocking rates³² and collective management of common pasture (e.g., decisions on grazing management, timing of movement between summer and winter pastures, and rehabilitation and rest).³³ A confounding challenge for sustainable

³¹ BAŞSÜLLÜ, Çağlar. Final Consultancy Report. 30 December 2018.

³² Parnon Group, "Mid-Term Review of Sustainable Land and Forest Management."

³³ Regina Neudert et al., "Understanding Causes of Conflict Over Common Village Pastures – A Comparative Analysis of Property Rights in Azerbaijan and Georgia," *Society & Natural Resources*, (2020): 347-367.

management has been significant growth in the number of livestock, especially those held by semi-nomadic pastoralists, due in part to population growth and out-migration from conflict areas of Azerbaijan and from Baku (resulting from a drop in oil prices, to which the country's economy is closely tied).

- xliv. The SLFM project ambitiously sought to address these governance and policy barriers through several actions. At the national level, the project updated the NAPCD through a participatory process and submitted it to the Cabinet of Ministers, although it was never approved. The project also developed 30 normative legal acts³⁴ aimed at strengthening guidance and improving policy coherence and submitted these to MENR for further submission to the Cabinet of Ministers; these approval steps were ultimately not taken, although the project found other channels to influence policy. FAO had also previously prepared pasture subsidy policy recommendations under an earlier project that sat with the Cabinet of Ministers with no action. The project instead worked with the Center for Analysis of Economic Reforms and Communication, the responsible agency for developing strategic road maps for various sectors of the economy, as part of the working group on environment and agriculture—and ultimately was able to mainstream its proposed changes into the Strategic Roadmap for the Production and Processing of Agricultural Products. Although many interviewees pointed to the policy influence of the project, they struggled to identify the specific influence, in part due to the time elapsed since the Roadmap's adoption in 2016.
- xlvi. The most recent national monitoring report of the Roadmap, however, shows that some relevant actions such as “7.3.4 Improve pasture management” have only been partially implemented by the end of 2020, such as by preparing certain maps and assessing the situation for pasture inventory.³⁵ For SLFM, the terminal evaluation and interviews both supported the view that the project design had underestimated the time needed for the fundamental review and adjustment of the legal and institutional frameworks pertaining to natural resources planning and management in Azerbaijan. And without policy or legislative change, many of the piloted activities did not have a basis for sustainability.
- xlvii. Both the SLFM and Forest Resources projects also supported land (forest, pasture) management plans and inventory processes that can help create the basis for more informed resource governance decisions, as mentioned above, and government interviewees indicated that inventory results are now the basis for some updating of regulations and guidelines.
- xlviii. At the rayon and local community levels, the SLFM project piloted cooperative resource governance structures for pasture and forest management, building on prior experience with water use associations in the country.³⁶ The SLFM project established two rayon

³⁴ Akin to regulations that support a particular implementation of a law and require review and approval by the Cabinet of Ministers rather than a full parliamentary process.

³⁵ Center for Analysis of Economic Reforms and Communication of the Republic of Azerbaijan, “Monitoring and Evaluation Report of ‘Strategic Road Maps on the National Economy and Key Sectors of the Economy in the Republic of Azerbaijan’ for 2017-2020,” (2021).

³⁶ The WFM project, however, analyzed the capacity of existing water use associations, in the context of expanding their responsibilities into comprehensive water management, and determined that this was not a feasible approach. Ultimately the project did not achieve its objectives in this area.

multi-stakeholder committees (RSCs), two pasture use associations and two forest use associations in two rayons, along with regulations to guide their establishment and administration. However, ultimately a lack of consensus on the legal form such structures should take and difficulties with official registration of associations and non-government organizations (required with the Ministry of Justice) led to the project deciding to stop supporting the use associations. Farmer unions were established instead—comprising pasture users and representatives of the local executive authorities, MOA, and municipalities—although these unions were unofficial (not registered). Limited information was available on their influence on resource governance effectiveness or their post-project sustainability. The RSCs were set up for the lifetime of the project, rather than as sustainable, ongoing organizations.³⁷

- xlix. The new LDN project picks up some of the work started under previous GEF projects to enhance vertical and horizontal institutional coordination and break down ministerial silos. The project aims at enhancing institutional coordination and policies for LDN, including through the preparation of LDN-related policies, legislation, and instruments, and enhancing inter-sectoral coordination mechanisms at and across local and national levels, including establishing a coordinating body on land issues under the Cabinet of Ministers (such as a National Coordinating Council or Commission) and mechanisms at the rayon level.

Gender, Private Sector, and Resilience

Gender

- I. While Azerbaijan has a sound legal basis for gender equality, a substantial gender gap remains. The government has signed international conventions on gender equality and passed in 2006 a Law on State Guarantees of Equal Rights for Women and Men. National development policies and economic strategies also state gender equality goals.³⁸ At the same time, Azerbaijan has been falling in rank in the World Economic Forum’s Global Gender Gap Index, from 86 in 2016 to 101 in 2022.³⁹ Women are concentrated in low-paid sectors, experience a significant wage gap, and have, until late 2022, faced legal barriers to their participation in the labor force, including job

³⁷ Parnon Group, “Mid-Term Review of Sustainable Land and Forest Management.”

³⁸ Asian Development Bank, “Azerbaijan Country Gender Assessment,” (2019).

³⁹ Asian Development Bank, “Azerbaijan Country Gender Assessment,” (2019); World Economic Forum, “Global Gender Gap Report 2022 – Economy Profiles,” (2022). World Bank, “Lifting Legal Barriers to Women’s Employment in Azerbaijan,” (Washington, D.C.: 2020).

<https://openknowledge.worldbank.org/server/api/core/bitstreams/2958c286-3021-5051-9e4e-916acd403572/content>; World Bank, “Lifting Barriers to Women Employment Will Benefit Everyone in Azerbaijan,” (2023). <https://www.worldbank.org/en/news/opinion/2023/03/08/lifting-barriers-to-women-employment-will-benefit-everyone-in-azerbaijan>

restrictions in the agricultural sector.⁴⁰ Forestry is also a highly male-dominated sector in Azerbaijan.⁴¹

- li. The drylands projects in Azerbaijan reflect an overall trend toward more gender-responsive programming in the GEF. Both the SLFM and Forest Resources projects (GEF IDs 4332 and 9795) had a weak focus on gender equality, while the recently approved LDN project (GEF ID 10708) incorporates tangible and concerted actions to support gender equality throughout its design. The SLFM project included a description of how gender considerations would be incorporated into the project, but this description was separate rather than integrated into the activities and outputs (no gender analysis or action plan was required given that the project was approved prior to the GEF's Gender Policy in 2014). At mid-term, the project was found to have not shown much effort to involve women or provide them with socioeconomic and capacity building opportunities; the MTR suggested that women had been overlooked as key forest users given their collection of NTFPs such as berries. Following the MTR, women were more actively engaged in trainings and income generating activities, such as honey, handmade crafts, and carpets, some of which were also linked with larger markets through ABAD (see section on private sector below). Women often take a leading role in producing honey in Azerbaijan, and two of four beekeepers in Agdash are female heads of household.
- lii. Despite being approved after the GEF Gender Policy, the Forest Resources project did not produce a gender-sensitive M&E plan, as planned, and project results reporting is not gender disaggregated. Project beneficiaries did not perceive an explicit focus of the project on women empowerment and equality. Still, the project's assessment of different roles and activities performed by male and female community members in agricultural or forest resource production helped the project adjust to target apiculture activities toward vulnerable groups and women.⁴² Women from local communities participated in fruit plantation afforestation works in Kungut (Sheki), as seasonal workers for maintenance and collection of fruits.
- liii. The most recently approved project in Azerbaijan, GEF ID 10708, pays special attention to the role of women in sustainable natural resource management. The project includes a Gender Action Plan, with concrete actions and expected results for women, and includes a gender expert among its team positions. Among other actions, the project targets at least 40 percent women through project activities and commits that at least one value chain will target women. Gender analysis and actions are further integrated into the project component on the enabling environment for LDN, including gender analysis and provisions in the National Action Plan for LDN and proposed State Program

⁴⁰ World Bank, "Lifting Legal Barriers to Women's Employment in Azerbaijan," (Washington, D.C.: 2020). <https://openknowledge.worldbank.org/server/api/core/bitstreams/2958c286-3021-5051-9e4e-916acd403572/content>; World Bank, "Lifting Barriers to Women Employment Will Benefit Everyone in Azerbaijan," (2023). <https://www.worldbank.org/en/news/opinion/2023/03/08/lifting-barriers-to-women-employment-will-benefit-everyone-in-azerbaijan>

⁴¹ FAO, "Terminal Evaluation of the FAO-Global Environment Facility Project." GEF ID 9795.

⁴² FAO, "Terminal Evaluation of the FAO-Global Environment Facility Project." GEF ID 9795.

on livestock production, and mechanisms for gender dimensions in decision making related to LDN at the national level.

Private Sector

- liv. The earlier drylands projects engaged smallholders and large-scale mobile pastoralists as beneficiaries of pasture rehabilitation and income-generating activities; the latest LDN project similarly plans to engage smallholder farmers and also plans to expand to include private companies in restoration efforts and value-chain development. The SLFM project was notable in its successes in value chain development—linking its livelihoods support for 60-70 families with the national ABAD (Family Business Support Facility) program. ABAD checked the compliance of the families’ products and production technologies against its standards, certified them, and included them into its own bigger market chain. Interviewees noted that certain products (e.g., honeybee products, traditional food products) are still available in large stores in Azerbaijan, due to this market connection. As noted earlier, the project also supported a beekeeping workshop in Burovdal village that still produces wax for other communities, providing the only wax processing services in the entire region of six rayons.
- lv. Forestry has been fully governed by the Government of Azerbaijan, and there is no private forestry in the country—making it unfeasible to engage private foresters in the design and implementation of many GEF project activities. The Forest Resources project’s terminal evaluation recommended that future projects better engage non-state actors, including the private sector. During the evaluation’s site visit, a regional stakeholder suggested that private sector involvement – such as leasing the project-supported fruit plantation lands to private citizens or enterprises – could better support watering and management given limited government resources, but legal barriers prevent this.
- lvi. The recent LDN project plans to engage smallholder farmers in SLM practices, private companies in restoration efforts, and both in value-chain development. Private companies are anticipated to be interested in investing to increase productivity, such as the AZERSUN company, with which FAO has signed an MOU. To better incentivize private sector participation, the project demonstrate innovation in its plans to assess the natural capital of land in the Abershon Peninsula and the economic impacts of action versus inaction, including for businesses. In areas where smallholder farmers own the majority of land, the project plans to strengthen the cooperation among farmers and establish public-private partnerships, with special focus on improving the participation of women in agricultural entrepreneurship and business.⁴³

Resilience

- lvii. GEF drylands projects in Azerbaijan include measures that seek to improve resilience of ecosystems and communities. The SLFM project focused on overgrazing of pasture and forest lands, due to its contributions to erosion and loss of site productivity and plant and soil resilience that threatens livelihoods of pastoral communities and reduces

⁴³ FAO, “FAO – GEF Project Document.” GEF ID 10708.

ecosystem services values. Community resilience was further enhanced through alternative income-generating activities, along with market connections, as mentioned above. The LDN project explicitly aims to increase the resilience of the land and the population dependent on it through its efforts towards achieving LDN and will introduce climate-smart SLM interventions in croplands and grasslands. The project also considers the linkages between land degradation and climate change, including through a comprehensive climate change screening assessment. In terms of results, the LDN project expects to improve the livelihoods of 1,740 people through training, awareness raising and access to new knowledge on SLM and resilient landscape management practices; and deliver 34,000 ha of landscape with improved SLM practices through participatory land-use planning leading to enhanced ecosystem resilience.

- lviii. The earlier WFM project was determined to not have realized the full scope of its expected climate resilience impacts, although there was one positive example observed during the project lifetime. The project-funded hydrometeorological monitoring station triggered the project-funded early warning system during a flood event near Gabala in the Turyanchay river basin. As a result, local community members were notified and took protective measures. Project equipment was also used to clear debris from roadways and restore access to key facilities.⁴⁴

Summary of Findings and Emerging Lessons

EQ 1: To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

- lix. GEF support has been highly relevant to the environmental challenges in drylands areas of Azerbaijan, including land degradation and climate variability, with focuses on forest and pasture lands. A recently approved GEF project will be the first to focus on the lowlands of Azerbaijan, where most of the country's drylands are located, and to explicitly focus on water scarcity issues, which have been somewhat under-considered by previous GEF projects.

EQ 2: How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

- lx. The GEF interventions have been coherent with government and donor-funded activities in the country, responding to government priorities and demonstrating some level of continuity across projects implemented by different development agencies. The SLFM project in particular was highly integrated with the EU ClimaEast project, and the Forest Resources project was aligned with numerous other FAO technical cooperation projects focused on forest landscapes. See EQ4 for discussion of policy coherence.

⁴⁴ UNDP, "Terminal Evaluation Report." July 9, 2017. GEF ID 4261.

EQ3: To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?

- lxi. GEF interventions have successfully delivered most project outputs, apart from hectares of pasture- and forest-land restored due in part to lack of cofinancing. Sustainable socioeconomic benefits were generated at the pilot scale, in part through connecting income-generating activities with wider markets. Substantial commitments from project staff to spending time in local communities to socialize the project interventions and messages was key to these achievements. However, the delivery and sustainability of global environmental benefits are less assured. Projects did not adequately monitor or report on relevant environmental conditions, such as soil carbon, and it is difficult to determine whether pasture and forest management plans developed by the project are still being implemented two to five years after closure. There are some indications, from local interviews and direct observations, that improved vegetation cover has been sustained in small areas, that planted trees survived, and that fencing of forest areas along roadways has prevented some illegal grazing.
- lxii. In terms of socioeconomic benefits, the projects generated income for local households, but did not clearly articulate how or monitor whether households' reliance on pasture- and forest-degrading activities would decrease as a result of the alternative livelihood activities. This is a missed opportunity to learn more about the most effective incentive schemes for improving pasture and forest land. The PES approach was also effective but behavioral change did not continue once payments stopped.

EQ4: Have natural resource governance and other socio-economic factors been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

- lxiii. GEF drylands interventions have given substantial consideration to natural resource governance and policy coherence—even if they have struggled to tackle the systemic issues behind the inadequate legal and regulatory framework for sustainable forest and pasture management, the policy misalignments, and a lack of horizontal and vertical coordination. The SFLM project, for instance, identified misalignments in the policy landscape and sought to address them, although not fully successfully. Evaluations of the SFLM and Forest Resources projects pointed to overly ambitious policy agendas, given the budget and project time period, and the need for more political ownership and commitment, which might have been better supported by the project through awareness raising and publicity measures. The latest LDN project has diagnosed and seeks to continue to try to tackle many of these governance and policy related issues.

EQ5: To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

- lxiv. The drylands projects in Azerbaijan reflect an overall trend toward more gender-responsive programming in the GEF. Earlier projects had a weak focus on gender equality, while the recently approved LDN project incorporates actions to support gender equality throughout its design, from policy and decisionmaking to on-the-ground piloting actions. GEF drylands projects in Azerbaijan had explicit objectives to improve

resilience of ecosystems and communities but did not measure or monitor changes in resilience.

- lxv. Mountain village families and transhumant pastoralists were the main beneficiaries of pasture and forest rehabilitation and income-generating activities. The SLFM project was particularly successful in linking families' new income-generating activities with wider markets, as mentioned. The more recent LDN project plans to engage smallholder farmers and to expand to include private companies in restoration efforts and value-chain development.

ANNEX 1. LIST OF INTERVIEWEES AND SITES VISITED

Interviews conducted remotely:

Name	Role	Organization
Emin Garabaghli	Head of Division of International Cooperation	Ministry of Ecology and Natural Resources, Azerbaijan
Toghrul Feyzili	UNCCD focal point	Ministry of Ecology and Natural Resources, Azerbaijan
Issa Aliyev	Former UNFCCC focal point; Independent expert on climate change	Formerly Ministry of Ecology and Natural Resources, Azerbaijan
Rashad Huseynov	Deputy Director	Center for Analysis of Economic Reforms and Communication, Azerbaijan
Akif Habilov	National Coordinator on Forestry Management and Planning (Forest Resources Project Steering Committee member)	Department for Forests Development, Ministry of Ecology and Natural Resources, Azerbaijan
Chingiz Yusifov	National Consultant on Forest Data Collection and Analysis (Forest Resources Project Steering Committee member)/ Head of Subdivision in Forestry Development Service	
Mais Mammadov	National consultant/Chief taksator (afforestation inspector) in Forestry Development Service	
Imdat Rizayev	National consultant/Chief taksator (afforestation inspector) in Forestry Development Service	
Ilgar Nazarov	Chief topographer in Forestry Development Service	
Akber Asgarov	Hydrology and hydrometeorology expert	
Bariz Mehdiyev	Project Team Leader / Azerbaijan Deputy Representative	FAO
Irada Garakhanova	Programme Support Specialist	

Shahin Isayev	Programme Manager	
Hernan Gonzalez	GEF Funding Liaison Officer, Investment Centre Division	
Ingrid Teich	International LDN Specialist	
Zaur Aliyev	Project Assistant/Project manager in National Adaption Plan preparation project	UNDP
Chingiz Mammadov	Senior Programme Adviser/Programme Analyst	
Eltekin Omarov	Project Manager/EU project manager	

Interviews and site visits conducted in-person:

Date	Time	Local interviewees and sites visited	Venue
<i>April 25, 2023</i>	15:00-15.30	Mammadov Parvin, Project Local Coordinator	<i>Forestry Center Office in Gakh</i>
	16.00-16:30	Mr. Hasanov Mubariz, Forester of Gipchag forestry (Gakh district), Sheki Regional Forestry Economy Center	<i>Forestry Center Office in Gakh</i>
	17:00 -18.30	Travel to forest rehabilitation site in Gipchag forestry, to huzelnut plantations and beekeepers in Kotuklu and Goragan villages	
<i>Sheki</i>			
<i>April 26, 2023</i>	09.00-10.00	Mr. Shamsaddin Adilov, Chief Forester, Acting Director, Sheki Regional Forestry Economy Center	<i>Regional Forestry Economy Center Office in Sheki</i>
	10.00-10.30	Mr. Nureli Abdullayev, Forester of Kungut Forestry (Sheki district), Sheki Regional Forestry Economy Center Mr. Zahid Aliyev, forestry ranger of Kungut Forestry (Sheki district), Sheki Regional Forestry Economy Center	<i>Regional Forestry Economy Center Office in Sheki</i>

	10:30 – 12:30	Field visit to forest plantation sites in Kungut village together with Nureli Abdullayev and Zahid Aliyev	Kungut village
	<i>Agdash</i>		
	16.00-18.30	Meeting with Elnur Nasibov, Forest Plant Engineer for Agdash Forestries of Barda Regional Forestry Economy Center, field visit to see forest plantations in Agzibir village (partly)	
<i>Agdash</i>			
<i>April 27, 2023</i>	10:00-13:00	Travel to Garadeyin village to visit beekeepers	
	14:00-16:00	Field visit to see forest plantations in Agzibir village (second part) together with Elnur Nasirov and Ismayilov Taleh, forest ranger of division 1 of Agzibir forestry	
	16:00-17:00	Mr. Araz Ahmadov, head of Agzibir village municipality, Agdash district	Office of Agzibir village municipality
	17:00-18:00	Mr. Alish Jafarov, local executive authority representative in Agzibir village, Agdash district	<i>Office of local executive authority representative, Agzibir village</i>
<i>Ismayilli</i>			
<i>April 28, 2023</i>	09:00 – 11:30	Travel to Ismayilli village, to Brovdal village	
	11:00-18:00	Meeting with Vusal Ganiyev, municipality activist, participated in all works in Brovdal village and municipality, field visit to UNDP project sites (pastures rehabilitation areas)	
<i>Ismayilli</i>			

<i>April 29, 2023</i>	09:00 – 11:00	Meeting with Rafayel Musayev, UNDP project local coordinator, visit to reforestation areas and forests protected by the project in Ismayilli	
	11:30 – 12:00	Meeting with Oktay Ganiyev, coordinator of beekeeping workshop, which was established by the UNDP project for Brovdal municipality	
	<i>Shamakhi</i>		
	13:30-15:00	Visit to forest protection areas in Shamakhi district, in division #9 of Shamakhi Regional Forestry Economy Center, visit beekeepers in Dedegunesh village	
	<i>Agdash</i>		
	17:00 – 19:00	Meeting with Yusifov Nadir, forest ranger of division 1 of Garkhun forestry (Agdash), field visit to FAO project pasture rehabilitation sites	

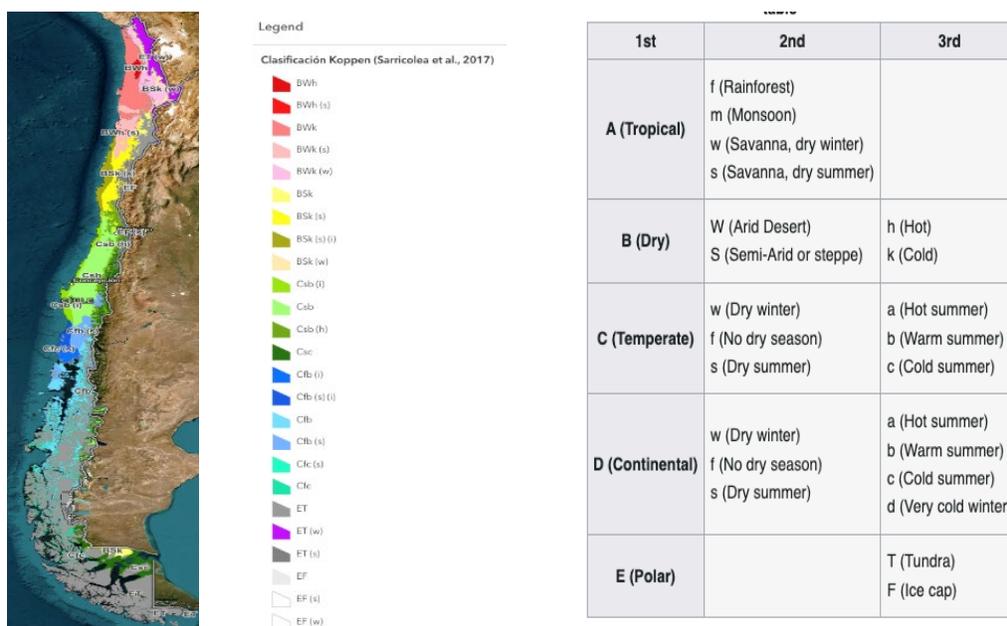
TECHNICAL DOCUMENT 7 - CHILE CASE STUDY REPORT

Introduction and background

The Latin-America and the Caribbean (LAC) region presents vast xeric, hyper-arid, arid, semi-arid and dry sub-humid zones mainly in Mexico, Argentina and Brazil, which account for near 73% of the region's land territory, while Chile, Bolivia and Peru constitute another 17%⁴⁵. Desertification and degradation of agricultural lands are widespread processes in LAC countries, where one fifth of land with vegetal cover has lost productivity, with South America as one of the most affected areas. Desertification and degradation of land and ecosystems reduced the availability of water, and estimates indicate that by 2050 one out of four persons in the world will live in a country affected by chronic scarcity of drinking water⁴⁶.

Chile hosts several climate types ranging from hyper arid, arid and semiarid, and it is one of the five ecoregions in the world with Mediterranean climate, which are regions with high risk of extinction of biodiversity species. The Chilean Mediterranean ecoregion is located in the heart of the country's Central Zone and includes areas with a high level of biodiversity, mountainous areas, ravines, and some Central Valley lowlands. Figure 1 shows Chile's main eco-regions and climates.

Figure 1: Classification of Chile's main climate types



Source: <https://www.arcgis.com/apps/mapviewer/index.html?webmap=2403fb2424bf45829d7061588daff5af>

⁴⁵ UNESCO, 2010. "Atlas of Arid Zones of Latin America and the Caribbean". Within the framework of the project "Elaboration of the Map of Arid Zones, Semi-arid and Subhumid Zones of Latin America and the Caribbean". CAZALAC. IHP-LAC Technical Documents, N°25, pages 10-12, 17.

⁴⁶ CEPAL: "Key regional statistics on SDG 15". This document is the outcome of the discussions that took place in the framework of the Third Meeting of the Forum of the Countries of Latin America and the Caribbean on Sustainable Development, convened under the auspices of the Economic Commission for Latin America and the Caribbean (ECLAC) in Santiago from 24 to 26 April 2019.

Chile presents some differences in its approach regarding the use of GEF support, as compared to other LAC countries. While many have single and rather large GEF interventions focusing on defined areas and specific environmental issues, Chile prioritized the share of GEF financial resources and activities through several regions and institutions with responsibilities for environment-climate related issues.

Main environmental and socio-economic challenges in Chile's drylands

Communities living in drylands and Mediterranean landscapes in Chile have similar environmental and socio-economic challenges to other LAC countries. On the environmental side, competition for natural resources such as water and land is a common issue in the northern area, where mining is one of the most important Chile's economic activities. In addition, unsustainable livestock practices have degraded the land in the north and central Chile and the prevalence of severe droughts have declined most of small landowners' agriculture activities. The Mediterranean region of Chile covers its capital city (Santiago) and the most densely populated area of the country, where the industry, road and energy infrastructures, allotment of agricultural lands for recreational homes, overgrazing, exports of fruit and avocados directly affected the natural areas.

On the socio-economic side, the lack/low quality of basic services (drinking water, sewage, access to electricity), job opportunities and development for young populations have resulted in migration to larger cities in the country. Insufficient institutional regulations, lack of coherence amongst cross-sectoral government's policies and programs and a need for improved technical capacities and governance of local stakeholders are some of the main barriers impeding the protection of biodiversity in Chile⁴⁷. Depending on the type of beneficiaries' land rights, different government programs for improving agriculture production, livelihoods and sustainable ecosystem service management emerged to meet landowners' needs and protection of biodiversity.

Objectives, scope, methods, limitations, and mitigation measures

This Chile Case Study was elaborated in the framework of the Strategic Country Cluster Evaluation (SCCE) for assessing the GEF support to dryland countries (in short, Drylands SCCE),⁴⁸ which focuses on two overarching evaluation objectives:

- (i) assessment of the relevance and coherence of GEF investments in dryland countries, and,
- (ii) assessment of GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.

⁴⁷ Terminal Review of the UNEP Project "Protecting Biodiversity and Multiple Ecosystem Services in Biological Mountain Corridors in Chile", GFL-11207-14AC0003-SB-004356, 2016 – 2022; UNEP Ecosystems Division/GEF Biodiversity and Land Degradation Unit, May 2023, page 22.

⁴⁸ [Strategic Country Cluster Evaluation: GEF support to Dryland Countries. Approach Paper](#); GEF Independent Evaluation Office (IEO); September 2022.

The Drylands SCCE defined the five following questions that were addressed by the case study with different emphasis depending on the implementation status of the selected projects (completed, ongoing, and not yet started):

KQ1): To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

KQ2): How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

KQ3): To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?

KQ4): Have natural resource governance and other socio-economic factors been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

KQ5): To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

lxvi. Chile was one of six case study countries selected for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country⁴⁹.

The selection of GEF drylands interventions for this case study ranged from GEF-4 to date, irrespective of their categorization under the different GEF focal areas, as shown in Table 1:

Table 1: Case study projects

GEF ID	Project Name	Phase	GEF Agency	Focal Area	Project Status (as of September 2022)	GEF Grant (US\$ million)	Co-finance (US\$ million)	Terminal Evaluation	Ratings
4104	Sustainable Land Management	GEF4	WB	Multi Focal Area	Project Implemented	6.5	58.0	Yes	Positive Outcome
5135	Protecting Biodiversity and Multiple Ecosystem Services in	GEF5	UNEP	Multi Focal Area	Project Implemented	6.2	27.0	Yes	Positive Outcome

⁴⁹ Strategic Country Cluster Evaluation (SCCE): GEF Support to Dryland Countries – Selection Note for Country Case Studies and Projects, GEF IEO, January 2023 (internal document).

GEF ID	Project Name	Phase	GEF Agency	Focal Area	Project Status (as of September 2022)	GEF Grant (US\$ million)	Co-finance (US\$ million)	Terminal Evaluation	Ratings
	Biological Mountain Corridors in Chile's Mediterranean Ecosystem								
10718	Restoration of biodiversity and ecosystem services at the landscape scale on productive agroforestry areas and their natural environment	GEF7	FAO	Multi Focal Area	CEO Endorsement Cleared	6.2	32.0	No	-

The sample of GEF projects selected for the Chile case study has some characteristics that are representative of several LAC countries. The sample covers indigenous people communities with land right ownership recognized by law (Arica-Parinacota Region), non-indigenous communities with collective land rights (Coquimbo Region), and individual landowners (O'Higgins and Metropolitan regions). This sample also covers climate regimes ranging from Hyper-Arid (Arica-Parinacota, Atacama Desert), semi-arid (Coquimbo), dry sub-humid and Mediterranean (Metropolitan, Valparaíso and O'Higgins regions). The Coquimbo Region is characterized as a transition region since it is located between the desert zone and the Mediterranean zone and presents biodiversity with a high level of endemism and threats.

- lxvii. The Chile Case Study built on document reviews, portfolio and geospatial analyses conducted in-house by the GEF IEO before the mission in the country. A mixed methods approach was used, with desk reviews of project and country documents, complemented by interviews with representatives of the Government of Chile, GEF Agencies, project staff from government agencies, external experts, and beneficiaries. A national consultant visited site areas in Combarbala (Coquimbo Region), Litueche (O'Higgins Region) for GEF ID 4104 and GEF ID 10718, and in Santiago (Valparaiso region) for GEF ID 5135 (see Annex 1). Direct field observations were also made of pasture and forest areas that had undergone rehabilitation measures, in both GEF IDD 4104 and 5135 projects. Geospatial maps prepared by GEF IEO was reviewed with local stakeholders during the field visits, with the goal of facilitating discussion on factors that contributed to observed changes in the maps. Although "policy coherence" (KQ2) was not explicitly among the mandated objectives of the projects under review, it was considered in this case study for formative and learning purposes.

A geospatial analysis was performed by the GEF IEO to have a wider view of the post-completion environmental outcomes achieved by GEF interventions in all areas visited by the national consultant (Combarbalá, Litueche and Metropolitan Region). This analysis included three components:

google Earth Image (GEE) series: screen shots of high-resolution images were taken at different times throughout the last ~20 years, and changes were identified by scrolling through the images chronologically.

- **Normalized vegetation different index (NDVI):** this analysis was done to measure the change over time in greenness or vegetation brightness. It shows improvement in agricultural productivity or afforestation/reforestation projects that haven't yet developed full tree canopies.
- **Forest loss and gain (FL/FG):** this analysis was done to measure forest loss and gain in mainly forested areas and forest protection, or reforestation was done by the project. Yearly [forest loss](#) data from global datasets with high spatial resolution (30m) between 2001-2021 and [forest gain](#) data between 2000-2020 have been used for this analysis. A buffer around the area under project influence was drawn and computed forest loss and gain in this area, and also the buffer for comparison.

Limitations faced during the study included the unavailability and rotation of officials from partner institutions such as the Agriculture and Livestock Services (SAG) and Agricultural Development Institute (INDAP) that supported projects' activities in the pilot sites, some beneficiaries from isolated areas and from forestry businessmen from the Metropolitan and Valparaíso Regions, and to some extent the availability of information regarding pilot projects in the northern part of Chile. Another limitation was the unsuccessful attempt to organize a site visit to the Valparaíso Region to field verify the achievement and sustainability of the results from the GEF ID 5135 project.

To address these limitations, the information obtained from interviews and project reports and reviews was validated by third independent sources such as national reports to several multilateral environmental agreements (MEAs), OECD and UN agencies working with GEF and other initiatives.

Findings

KQ1: Relevance of GEF interventions to drylands in Chile

The evidence collected shows a clear alignment of GEF focal areas with key national climate and environmental issues related to drylands. As an example, for the case of Chile's drylands, CONAF (an agency from the Ministry of Agriculture) is implementing a "National Strategy for Climate Change in Vegetation Resources (ENCCRV)"⁵⁰, which is an umbrella arrangement where all GEF interventions should contribute to the objectives of this strategy. There are also other national policies where different GEF projects have contributed to either their elaboration or assisted their implementation. The GEF-4104 supported the elaboration of this national strategy and implemented five pilot projects in the country to test several approaches to sustainable land management and restoration in drylands and Mediterranean areas.

⁵⁰ <https://www.enccrv.cl/>

The GEF-10718, which is just starting implementation, aims to contribute to the National Biodiversity Strategy⁵¹, while the GEF-5135 has already helped it by implementing several interventions in the Metropolitan and Valparaíso regions, especially by strengthening capacities of local authorities and stakeholders and by implementing pilot projects demonstrating the compatibility of production agricultural systems with restoration of ecosystem services and protection of biodiversity.

The analysis of GEF interventions reviewed in this case study found them highly relevant to regional and local authorities in all the sites visited. The GEF-4104 is aligned with the Coquimbo's regional rural policy in place since 2011, and it includes the promotion for community participation, provision of education, health, home, social protection systems, access to environmental resources and economic development for rural communities⁵², with an applied participative approach aimed at improving local governance. The GEF-5135 strengthened the capacities of 36 municipalities from the Metropolitan and Valparaíso regions, contributing to the establishment of environmental units, and allowing them to draft local governance rules and improving their management of their natural resources⁵³.

Although all GEF interventions in drylands are considered relevant for proper natural resource management, adaptation, land restoration and afforestation activities, the interviews and the documentary review noted that most of these are implemented in the center and southern part of the country (Mediterranean and humid climates), and to a lesser extension in the northern areas (hyper-arid and arid climates). There are several reasons for this, ranging from cultural ones, according to which biodiversity in arid areas is neither well appreciated nor is their role in ecosystem services understood; to economic ones, since most of large mining companies contributing heavily to the national GDP are located in these extreme areas. Some stakeholders also mentioned that ecosystem services and biodiversity threats are mainly located at the country's central and southern areas, where most of the population and production centers are located. Another important factor for unbalanced GEF activities in drylands seems to be less interest from regional and local stakeholders to develop GEF interventions, and the difficulty of implementing them in these extreme and disperse landscapes with low connectivity and access.

Against these negative perceptions, the National Action Plan Against Desertification affirms the severity of environmental challenges in Chilean dryland regions, showing that risks of desertification (excluding the hyper-arid areas), erosion, and drought are mainly located in the regions of Coquimbo, Metropolitan and Valparaíso. Coquimbo presents the highest desertification risks (83% of country's land in this condition), land degradation (50% of the country's land with this condition) and it shares, with the Region of Atacama, the highest number of land areas affected with severe drought⁵⁴.

⁵¹ https://mma.gob.cl/wp-content/uploads/2018/03/Estrategia_Nac_Biodiv_2017_30.pdf

⁵² https://opia.fia.cl/601/articles-75762_archivo_01.pdf

⁵³ Terminal Review of the UNEP Project Protecting Biodiversity and Multiple Ecosystem Services in Biological Mountain Corridors in Chile GFL-11207-14AC0003-SB-004356: 2016 – 2022; UNEP/GEF Biodiversity and Land Degradation unit, May 2023.

⁵⁴ "Programa de Acción Nacional de Lucha Contra la Desertificación, la Degradación de Tierras y la Sequía PANCD-Chile 216-2030"; pages 79-88; Corporación Nacional Forestal (CONAF), Ministerio de Agricultura; <http://biblioteca.digital.gob.cl/handle/123456789/3413>

The evidence gathered suggests that a GEF intervention increases its relevance when it adapts during implementation to take in consideration the needs of stakeholders and achievable outcomes. The sample of projects reviewed shows that all these interventions were conceived at the central level of the government agencies (although in consultation with regional and local stakeholders), but some key stakeholders lost interest due to the typically long elaboration and approval processes in the GEF. Updating of targets, outputs and outcomes is a challenging process and it seems dependent of the type of management and leadership applied. The GEF-4101 for example, did not have clear leadership and it was executed according to central level directives, and presented lower performance, slower adaptive response, and more governance issues during implementation than the ones having strong leadership, specialized personnel, and more independency from the government executing agency.

A strong leadership seems to be less effective for sustaining project results in the medium and long term. Appropriation, replication and scaling-up are considered uncertain by some important national and regional partners, mainly due to hierarchical decision-making processes which made coordination and involvement of the host executing agency and other institutional partners a difficult task. In addition, GEF interventions' tighter time schedules are often more stringent than those from the host institutions, hindering their full involvement in the implementation of these projects and limiting their benefits from most of project outcomes.

In the case of projects with more difficulties, the host institution had to involve itself more deeply to solve the implementation and coordination issues. For example, as the primary approach for externalizing execution of GEF-4104 activities, several consultancy services failed to provide satisfactory results to both CONAF and final beneficiaries, a decision was taken to execute the project activities by the staff from CONAF. This approach eventually yielded good outcomes in the regions studied (Coquimbo and O'Higgins) and most of the local and regional stakeholders interviewed appreciated the participative governance approach applied.

Answering the question on whether GEF support is relevant to Chilean drylands, several interviewees stated that although GEF does not have a dedicated program for drylands, this seems unnecessary since GEF interventions respond to national environmental priorities. The issue seems to be irrelevant in face of the widespread perception mainly from regional government stakeholders, that GEF procedures for updating or introducing changes to projects' activities and targets, and the reporting requirements are quite tiresome. Officials from the national executing agencies have to focus more on these issues rather than on the relevance of the intervention during execution. For some, GEF imposes too ambitious targets in their projects, impossible to meet in reality. A note of caution about these complaints has to be made. Several government officials from regional and national government agencies did not have a good knowledge about GEF procedures and rules, and it seems there is a confusion between the GEF and GEF Agencies processes.

It was also noted during the interviews that some GEF interventions relied on factors which are not in control of the national executing agency. For example, GEF-4104 had a target of land treated of 100,000 Ha thanks to the application of a regulation that subsidized afforestation on degraded soils (DS-701). This regulation was repealed in 2012, just at the time the project began.

KQ2: Interaction of GEF interventions with other government and donor initiatives to improve or hinder policy coherence.

Policy coherence, a concept recently introduced in the GEF, means an approach that integrates environmental objectives into domestic policymaking by fostering synergies, maximizing benefits, and managing trade-offs across economic, social, and environmental policy areas and by balancing domestic policy objectives with commitments under the multilateral environmental agreements⁵⁵.

This concept has been a focus since GEF-8, and it was not expected that previous initiatives formally approached this issue. As such, the analysis of this section is formative. It aims to learn how past GEF experience influenced policy coherence in beneficiary countries. The following discussion focuses on Chile's policies related to climate change, land degradation, forests and biodiversity with emphasis on drylands.

From a general standpoint, interviews revealed that Chile is trying to engage several institutions at national, regional, and local levels to strength their capacities and commitments to implement coherent climate-related policies. As a result of this approach, there are several small interventions throughout the country where regional and local stakeholders participate actively.

Although all GEF project documents reviewed discuss coordination and synergies between similar GEF interventions, it is very difficult to distinguish clear linkages and coordination between GEF interventions while under implementation. Several interviews revealed that this coordination existed in practice, but there are no records or systematization of this information that could prove on what issues cooperation occurred and whether it was effective or not.

There is evidence that at the local level GEF interventions under implementation contributed significantly to policy coherence. Local coordination committees have been set up to improve projects' performance and alignment of government agencies, local authorities, and beneficiaries with the objective of getting the best environmental, institutional, and social outcomes from GEF interventions. For example, government incentive programs usually consist of a standard package focused on production improvement offered to small agricultural landowners. Beneficiaries' general perception of this type of programs is that they are too inflexible and do not consider the real farmers' needs, thus being more "offer-driven" and implemented "as it is packaged" throughout the country. In contrast, GEF interventions promote the establishment of "local steering committees" where all relevant stakeholders have to adjust and align to binding-decisions resulted from "demand-driven" requirements settled by these stakeholders. This type of arrangement has shown good results for tailoring investment and capacity strengthening activities to support practices such as regenerative livestock, restoration of degraded soils and

⁵⁵ Strategic Country Cluster Evaluation (SCCE): GEF Support to Dryland Countries - Guidance Note for Country Case Studies, GEF IEO, January 2023 (internal document).

sustainable agriculture⁵⁶, and for the elaboration of local policies such as land planning and environmental protection in line with national policies⁵⁷.

Rural policies are also critical to support proper alignment of environmental, socio-economic and production issues, and it is well known that Chile needs to improve the coordination among different government agencies to promote sustainable development. OECD studies revealed that there is insufficient institutional capacities and coordination between different governmental levels, which preclude the effective application of laws. Although there have been efforts to improve coordination at the highest level of government authorities (creation of the Council of Ministers for the Sustainability), the implementation of most of climate related policies depends on the voluntary participation of other ministries, thus having mixed results⁵⁸. In addition, drylands involve several rural areas in the country, but in terms of coordination, the situation found was similar to climate policies, since there were several government agencies dealing with different rural issues acting uncoordinatedly, and in the absence of a common definition of rurality, the formulation of a coherent national rural policy was critical to develop these areas⁵⁹.

Chile has made several efforts to address the above issues, and evidence was found showing that GEF interventions have been instrumental to achieve better policy coherence. GEF interventions have helped by acting as a promoter for consultation and collaboration processes, and providing inputs and pilot experiences to be replicated in several locations across the country to support the elaboration of informed development policies. Examples for these contributions are the formulation the “National Biodiversity Strategy 2017-2030”⁶⁰, “National Strategy for Climate Change and Vegetation Resources (ENCCRV)”⁶¹, “National Landscape Restoration Plan 2021-2030”, “National Rural Development Policy”, “National Action Programme to Combat Desertification, Land Degradation and Drought: PANCD-Chile 2016-2030”, and the “Biodiversity and Protected Areas Service (SBAP)”⁶² where GEF interventions are explicitly acknowledged by their inputs and facilitation roles to the formulation of these policies. These strategies also set-up national and regional steering boards and technical committees to ensure coordination, integration, and coherence in their implementation at both ministry and inter-ministry level.

Other, non-dryland focused GEF interventions have also played a substantial role in the elaboration and approval of the Law 21.202 regarding the protection of urban wetlands (2020), where the GEF-9766 helped Chile to facilitate the participatory process and developed ten sustainability criteria which constituted the foundation for interpreting the law that is now

⁵⁶ GEF-4104 was very successful to coordinate regional government agencies to adapt their incentive programs for meeting the requirements of small landowners from the regions of Arica-Parinacota, Coquimbo and O’Higgins.

⁵⁷ GEF-5135 strengthened technical capacities of 36 municipalities from which several municipal environment units, local protected areas and regulations emerged as result of this intervention.

⁵⁸ OECD Environmental Performance Reviews: Chile 2016; <https://www.oecd.org/env/country-reviews/>

⁵⁹ OECD Rural Policy Reviews: Chile 2014; https://read.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-rural-policy-reviews-chile-2014_9789264222892-en#page4.

⁶⁰ See Chapter III: Formulation process. The GEF project “National Biodiversity Planning to support the implementation of the Strategic Plan of the Convention on Biological Diversity (CBD), 2011-2020” was one of the key drivers of this process.

⁶¹ The GEF-4104 contributed to the elaboration of this public policy and the social and environmental safeguards; and the monitoring of forest CO2 stock inventory implemented by CONAF.

⁶² <https://www.terram.cl/biodiversidad/wp-content/uploads/sites/3/2011/12/Gonzalo-Pineda-GEF-Sirap.pdf>

protecting more than 7,600 Ha of coastal wetlands⁶³, some of which are located in the arid, semiarid and Mediterranean areas⁶⁴.

The national congress approved in June 2023 a new law that creates the Biodiversity and Protected Areas Service (SBAP), which solves the issue of several government agencies having responsibilities of protection of biodiversity. This new service aims to provide policy coherence and enforcement in the protection of Chile's biodiversity, as well as coordination among government agencies to protect biodiversity and ecosystem services.

To note, the national congress approved the "Framework Law for Climate Change" that sets-up a legal coordination and participation mechanism for engaging stakeholders from national government agencies, academia, and citizen organizations, including the right of access to information, transparency, and financing of climate actions. This law defines several governance levels (through political, scientific, and regional committees) and responsibilities for these institutions to ensure compliance and consistency in the implementation of the law⁶⁵.

Despite of all the progresses mentioned above, the evidence also shows that policy coherence still faces important challenges in practice, which GEF interventions in drylands need to address, since better coordination among stakeholders had little influence on government's development programs. As an example, the "Incentive Program for Agro-environmental Sustainability of Agriculture Lands (SIRSD-S)" is an initiative for recovering degraded agricultural soils executed by SAG and INDAP (agencies from the Ministry of Agriculture). Two out of the six SIRSD-S components are related to sustainable agricultural practices and restoration of land, while all other four include the use of agrochemicals for improving crop yields or removal of brushes without forage value⁶⁶. Most of stakeholders interviewed agreed that the use of agrochemicals is incompatible with regenerative livestock and other agroecological practices, but the sustainable practices included in this national program are undervalued by mid-level officials and extensionists who prefer the implementation of well-known techniques that fit well with their expertise and experience. Interviewees also stated that national and regional policies are "not integral" rather than "incompatible" and that the new government authorities have already stressed their commitment for sustainability in their national policies/programs.

KQ3: Achievement of environmental outcomes and associated socioeconomic co-benefits from GEF interventions.

The metrics for measuring environmental outcomes from the case study sample of GEF interventions are typically areas of land or GHG emissions sequestered/avoided and usually depicted by indicators such as "amount of CO₂ sequestered by forests", "areas of degraded

⁶³ <https://www.unep.org/es/en-chile-el-pnuma-contribuye-la-implantacion-de-una-ley-historica-sobre-los-humedales>

⁶⁴ <https://humedaleschile.mma.gob.cl/humedales-urbanos/>

⁶⁵ <https://cambioclimatico.mma.gob.cl/ley-marco-de-cambio-climatico/descripcion-del-instrumento/>

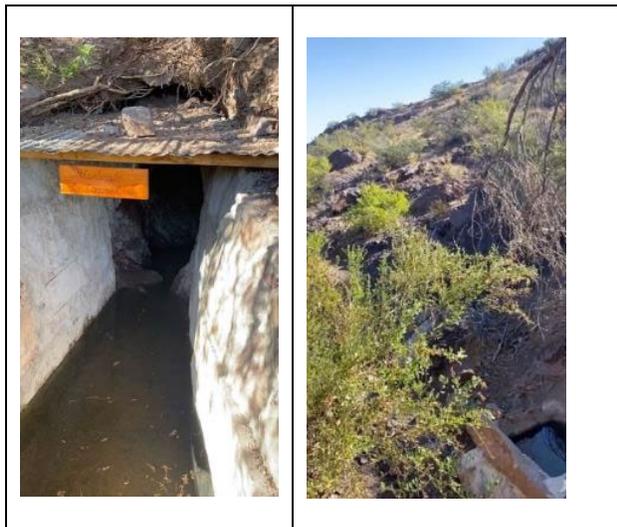
⁶⁶ <https://www.sag.gob.cl/sites/default/files/Memoria%20%20SIRSD-S%20%20SAG%202010-2021%20Final.pdf>, page 25.

lands/forestlands/grasslands/shrublands under restoration”, “landscapes under improved/sustainable practices”⁶⁷.

Most interviewees and monitoring and evaluation reports reviewed show that most of targets measuring the success of GEF interventions were too optimistic and had to be lowered, modified, or dropped during implementation⁶⁸. GEF-4104 targets were revised from 100K Ha to 30K Ha, GEF-5135 did not achieve the 200K ha of sustainable management, and the modern GEF-10178 which is just starting implementation has more moderate expectation of around 80K Ha and 155K tCO2 captured in a period of 20 years.

Some small scale but important local environmental results attracted the attention of communities and local authorities. For instance, in Arica-Parinacota (arid & steppe) the GEF-4104 restored approximately 177 Ha of high-Andean wetlands, which are very important to indigenous people for breeding “llamas” (camelids) and maintain ecosystem services and biodiversity. In the Coquimbo Region there were several positive environmental outcomes related to water management and restoration of land which has shown some changes in the local landscape. For example, afforestation of several patches of degraded land – typically 2-20 Ha - with native species protected by fences and excluded from livestock have shown during field visits important differences in vegetation cover from other grazing areas. Water retention works and rescue of old water sources using the local knowledge of communities have - according to the interviewees and documentation revised - also improved the vegetation coverage of surrounding areas⁶⁹.

Figure 2: view of a new water source (left) discovered by using old community knowledge in Combarbalá, and drinking trough for wild animals and type of passive vegetation (right)



⁶⁷ Although not the same indicators shown in project documents, this is a good categorization for most of desired environmental outcomes from GEF interventions analyzed.

⁶⁸ GEF-4104 Terminal Evaluation Report.

⁶⁹ A Good example of using local knowledge is the rescue of a water source which existed long time ago as told several times by older generations of local farmers. Although officials from the executing government agency were not convinced about this tale, they agree to finance the search for this water source which eventually resulted be true, and today is providing water for irrigation of planted native vegetation and wild animals.

Figure 3: Panoramic view of lands outside (left photo) and inside (right) of the exclusion fences for protecting afforestation from grazing in “The Espino Agricultural Community” from Combabalá (Coquimbo Region)



Figure 4: water retention works at the “Orrego Agricultural Community” from Combarbalá (Coquimbo Region)



Similar experiences were successful in providing environmental benefits (e.g., new legal protection figures, afforestation, and restoration at local scales). The GEF-5135 developed Districts of Conservation involving several landowners, demonstrative initiatives of sustainable cattling practices and forest management resulted in approximately 12,000 Ha with improved sustainable land and forest management⁷⁰.

In the Metropolitan Region (Mediterranean climate), the environmental outcomes are also visible at local scale. The GEF-5135 interventions supported several municipalities in the planning and management of Municipal Protected Areas (RENAMU for its Spanish acronym). Some municipalities from the Metropolitan area declared Mawida Park⁷¹ (157 Ha) and the Quebrada de Macul Pak⁷²(180 Ha), El Trapiche Pak⁷³ (100 Ha) as RENAMU (6 Ha), totalizing 443 Ha of new protected areas.

Figure 5: Quebrada de Macul Park at the Municipality of Peñalolén (Metropolitan Area) showing protection fences, afforestation, and educational activities for schools.

⁷⁰ GEF-5135 introduced new grazing practices based on ancient community knowledge by defining exclusion areas and rotation for grazing in 9,000 Ha in San José de Maipo (Metropolitan area), and formal clean production agreements for sustainable forest management in 3,000 Ha in the Region of Valparaíso.

⁷¹ <https://www.parquemahuida.cl/reserva-natural-municipal/>

⁷² <https://www.penalolen.cl/medio-ambiente/parques-de-penalolen/parque-quebrada-de-macul/>

⁷³ <https://amosantiago.cl/penaflor-crea-la-primera-reserva-natural-municipal-de-la-rm-en-el-parque-trapiche/>



In Litueche (O'Higgins region), 5,214 Ha were covered by the GEF-4104, and several small landowners benefited from GEF investments to capture rainwater, improved vegetation cover and soil restoration, and afforestation with native species. As in the previous examples, environmental outcomes are mostly local.

Figure 6: Panoramic view of the Litueche Biodiversity Conservation Corridor and map (Litueche)

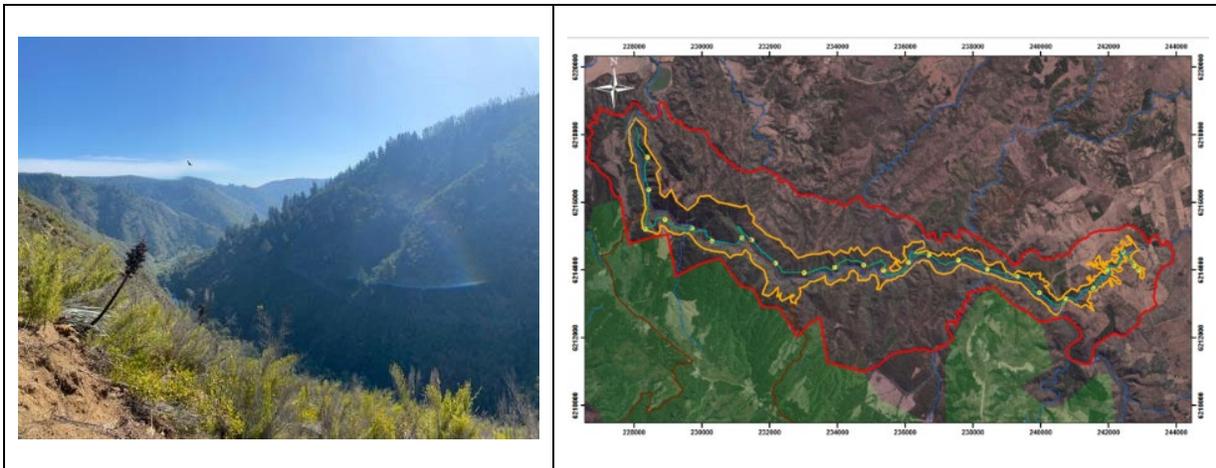


Figure 7: afforestation with exclusion fences and rainwater catcher works in Litueche (O'Higgins Region)





The GEF IEO geospatial analysis indicated some positive local environmental outcomes for the GEF intervention areas. The FL/FG analysis for the biodiversity corridor in Tanumé (O'Higgins Region) noted a forest loss of 55% for the period 2001-2021 with peaks in 2012 (higher loss) and 2017 (moderated loss). The SLM project started working in the biodiversity corridor in 2018 and finished the official proposal for protecting this area in 2021, with some afforestation and improved land management plans during the period 2018-2021, thus indicating some positive effect from the GEF intervention starting from 2018 until present.

The NDVI analysis revealed some evidence of local environmental benefits for the period 2015-2022 and, in some cases for 2010-2022 in the area of Combarbalá (Coquimbo Region). These are the sites from the communities of Orrego, El Espino and Vivanco, where the data showed new tree plantings, but not much greening. Some improvements in vegetation cover for some years were also noted, but they are still inside historical ranges. For the area of La Colorada some increases from 2018 until present were noted, and are indicative of a positive influence from GEF interventions in this area. However, most of GEF interventions in small farms do not show a clear cause-effect for environmental benefits. Some changes occurred in María González' farm are more perceptible, since some portion of this farm appears to be under some type of planting regime, but still very small.

Clear evidence from the NDVI analysis could not be found due to either small patches of land or coarse data for the O'Higgins Region. The afforestation area in Tanume was small and inside a forest plantation cycle was the only real pattern detected in both GEE and NDVI. The complete GEE, NDVI and FL/FG analysis can be found in Annex 2 of this report.

Socioeconomic benefits from GEF interventions were assessed by the terminal evaluation of the GEF ID 4104 project⁷⁴, which found moderate benefits from activities in pilot sites located in Chile Drylands (Arica-Parinacota, Coquimbo), Mediterranean climate (Metropolitan and O'Higgins Regions) and other non-drylands southern areas, as shown in Table 2 below.

Table 2: Estimated socio-economic benefits from GEF ID 4104 as per its terminal evaluation.

⁷⁴ See Terminal Evaluation GEF-4104, Annex 4: Efficiency Analysis of the GEF-Sustainable Land Management (SLM) in Chile, , WB, December 2021.
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwikwK-17-v_AhXsElkFHQUxB6AQFnoECACQAQ&url=https%3A%2F%2Fpublicpartnershipdata.azureedge.net%2Fgef%2FGEFDocuments%2F329d99e3-de7c-e811-8124-3863bb2e1360%2FTE%2FTerminalEvaluationTE_4104-P085621-2021-ICR-WB-Chile.pdf&usq=AOvVaw1QWj9ArCEnvNMoSXHpv50X&opi=89978449

<i>Benefit type)</i>	<i>Present Value (in USD\$)</i>	<i>Share in Total Benefits (%)</i>
Water provision	3,240,595	32.4
Forage provision	1,689,779	16.9
Animal health	215,082	2.1
Biodiversity conservation	2,018,277	20.2
Carbon sequestration	2,304,773	23.0
Tourism	14,621	0.1
Non timber forest products	419,249	4.2
Soil degradation control	101,780	1.0
PV Benefits	10,004,118	100
PV Costs	4,409,657	
PV Net Benefits	5,594,461	
Benefit/Cost ratio	2.3	

According to the GEF ID 4104 terminal evaluation, benefits from GEF interventions seem higher for drylands in several areas. **Carbon sequestration** was estimated at 1.84 USD/ton CO₂ where GEF funded activities accounted for 50.5% in Putre-General Lagos (drylands) and declined to 25.3% in other pilot areas. **Water provision** due to larger peatland coverage was increased by 34% from restoration of wetlands in Putre-General Lagos, yielding an estimated incremental value of 1,409 USD/ha. GEF benefits accounted for 50.5% in this area compared to 26% in other pilot sites. **Benefits from erosion control and restoration** were estimated in 84 USD/Ha, where 100% was covered by GEF interventions.

According to the GEF ID 4104 terminal evaluation most socio-economic benefits covered by GEF funding are found in water provision, biodiversity conservation and carbon sequestration activities. Actual socioeconomic benefits for final beneficiaries are more difficult to assess

mainly due to the weak and insufficient data and monitoring and evaluation system to track their progress⁷⁵. GEF projects usually use labor provided by local communities which increase their family incomes in the short-term, and provided tools, equipment, and enhanced capacities, potentially resulting in improved life conditions in the medium and long term. Interviews to beneficiaries revealed that there is a positive impression on how GEF interventions improved their lives, where active participation in the projects and the capacity strengthening received were highly appreciated. Beneficiaries also remarked that beyond GEF projects and the environmental issues addressed, their intention is to prevail in their land and maintain their rural way of life, and that regional authorities provide better social services and job opportunities to the young populations. In addition, their view about the territory is not to practice agriculture production at large scale. It is to practice family agriculture and some tourism activities to enhance their incomes. The community organizations interviewed are also aware that unsustainable production practices have degraded their own lands and have seen how livestock and agriculture decreased the vegetation cover and water availability, thus they would change their practices if both financial and technical support are provided during the transition phase.

Positive natural resource governance and trade-offs between environment protection and socioeconomic development was observed. GEF interventions have been able to extend the participation of key stakeholders from different landscapes, and supported them to reach informed and reasonable agreements that all would fulfill. Most active communities have seen GEF interventions as their opportunity to put their middle and long-term demands on the table, whether it is education, health, or basic services, with the goal of permanence in the land as the central focus.

Participation of medium and large companies in GEF project stakeholder coordination mechanisms was minimal. Mining activities located in the northern area of the country are critical contributors for Chilean GDP and usually do not participate in the roundtables created by GEF projects. The same happens with large agriculture-exporting companies in the north and center and south of the country. All these large producers usually compete for water and land in the pilot sites, but GEF projects typically do not involve these actors to find alternative ways to mitigate such competition, for example by investments for collecting and retaining rainwater or building wells.

For the most part, GEF interventions in Chile's drylands have not attempted to influence the current water governance scheme and regulations. An exception to this general trend was observed in the Metropolitan and Valparaíso regions, where the GEF managed to involve medium size private landowners to reach a balance between economic activities and biodiversity protection. The municipality of Peñalolen in Santiago agreed to a strategic landscape planning with all relevant actors, where park zones and economic activities were defined and construction above 900 m above sea level was forbidden. The active participation of the GEF-5135 and the leadership of the mayor were critical to achieve consensus and set commitments and responsibilities for all actors⁷⁶.

⁷⁵ See Ref. 5, para. 118, page 61.

⁷⁶ <https://gefmontana.mma.gob.cl/categoria/estudios/>

KQ4: Have natural resource governance and other socio-economic factors been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability in Chile?

The sample projects reviewed show some positive examples of environmental outcomes sustained and replicated post-completion. In the Region of Coquimbo, for example, the interviewees and other information sources reported that bees returned after the works made to capture/infiltrate rainwater, afforestation, and growth of passive vegetation⁷⁷. Site visits confirmed these findings, with one showed a clear cause-effect relationship: the opening of a new water source in Combarbalá enabled irrigation to the greenhouse and it was also used as a water dispenser for wild animals.

Figure 8: Greenhouse irrigated with the new water source (left photo) and promotion of the beekeeping development (right) by GEF ID 4104 in Combarbalá (Coquimbo Region)



For the most part, these improvements are local, but attracted several regional and local authorities thanks to the leadership of rural community organizations previously strengthened by the GEF-4104. The outcome was a new initiative named “Program for Recovering the Sustainable Land Management Approach (PREMST)” with funding from the regional government (approx. USD 1,332,551 for two years). This project is executed by CONAF and aims to scale-up the GEF experience for participative landscape governance to Combarbalá and other three municipalities in Coquimbo⁷⁸.

Sustainability in Combarbalá is a success of the capacity strengthening and participatory approach adopted by GEF interventions, which supported the establishment of a federation that accounts for 9 out of 17 agricultural communities and 27% of the land of this area and promoted technical-political and decision-binding roundtables at local and regional level where government agencies, authorities, and community organizations sit together to solve practical problems. This type of arrangement is still working in 2023 and it is behind the approval of the new regional government financed’s PREMST programme that is currently under implementation for the period 2023-2024, .

The evidence collected suggests that cultural community organizations are settled in the Coquimbo Region and have access to a wide range of regional stakeholders (municipalities, regional government public officials, and members of the national parliament), thus having the

⁷⁷ <http://www.elovallino.cl/provincia/campesinos-exigen-replicar-en-toda-region-programa-manejo-sustentable-tierra>

⁷⁸ <https://www.gorecoquimbo.cl/en-paihuano-monte-patria-combarbala-y-canela-se-desarrollara-proyecto/gorecoquimbo/2022-09-14/170522.html>

capacity for pushing several initiatives related to rural development and water access needing national approval^{79,80} or regulatory reforms. These empowered community organizations are key to improve the effectiveness of GEF investments since their exercising influence over community members allows them to prevent or solve internal conflicts and practice sanctions to those who fail in their commitments. For example, it was reported that funding allocated to some communities was withdrawn by community organizations from inactive members and transferred to other members, once CONAF reported delays and inaction in the works.

Involvement of municipalities is key to sustain environmental and governance results. In Coquimbo Region, local authorities played a significant role in the local steering committees and promoting initiatives for funding, whereas in O'Higgins Region their participation was limited to facilitating infrastructure for meetings. In the Metropolitan Region, several municipalities managed to expand local protected areas and implement sustainable production practices.

Replication and scale-up of GEF interventions are not always achieved or secured. In the case of the pilot site of Litueche, demonstrations for afforestation and capture/retention of rainwater were successful while the project was under execution, but once it was closed, the local roundtable and coordination of government agencies with beneficiaries stopped. According to the interviews and documentary reviews, GEF-4104 created a governance structure “ad-hoc” for the project. Community organizations as such were not participating in this initiative, but persons identified as key stakeholders were invited to be part of the local steering committees. These persons were also leaders of community organizations that were not directly involved in the project, and the limited scope defined for the local councils' role and GEF intervention goals led to dissolving these governance structures after fulfilling their goals. It was noted that government officials and beneficiaries had not met until the case study site visit took place, and government officials stated that although there is coordination among government agencies at regional level, local coordination is not yet well established.

Another explanation for this loss of local governance is related to the type of land property rights. Whereas in Coquimbo Region most of GEF beneficiaries are organized around collective property rights which act as a single landowner, the property in central Chile is dispersed in several small and middle size individual landowners that have difficulties to reach consensus on long term issues. Several interviewees doubted about the community sense of these landowners who are involved in just short-term, mostly production-related initiatives.

The beneficiaries from the Litueche pilot site interviewed were satisfied with GEF intervention outcomes, since its participative nature allowed them to raise their demands to the government agencies present in their region. They stated that this experience was positive, and agreements were always reached among all involved parties. Their participation halted once the GEF project was completed, but they are actually maintaining and using the equipment provided by the GEF ID 4104, and some have made additional investments to increase their afforestation areas.

⁷⁹ https://www.camara.cl/verDoc.aspx?prmID=229430&prmTipo=DOCUMENTO_COMISION

⁸⁰ <https://www.camara.cl/cms/destacado/2023/05/24/plantean-directrices-para-fomentar-una-mayor-proteccion-del-medioambiente/>

Figure 9: Example of mobile drinking trough for sheep (left), rainwater catcher and storage (right), and nursery used for reproduction of native species in the rural school of Pailimo (below) in Litueche (O'Higgins Region)



Another example of sustainability and replication of GEF interventions was noted in the “Restoration of Native Forest at Large Scale”, “Transition to Sustainable Agriculture” and “Traditional Seeds” components from the national government plan called “Sowing for Chile”. The aim of the national plan is to reactivate family agriculture production and improve the country’s food security, with a budget of approx. USD 16,000,000 for the entire country⁸¹. CONAF reported that 1,000 Ha of wetlands in Arica-Parinacota were restored under this initiative that complemented GEF-4104 interventions, and a total of 6,000 Ha restored through Chile are expected at the end of this program⁸². Although this plan has more emphasis in the southern zone, almost 2,000 Ha of drylands and Mediterranean climate are also planned to be covered (Arica-Parinacota, Coquimbo, Valparaíso, Metropolitan and O’Higgins regions)⁸³.

GEF interventions also promoted “green” certification through clean production agreements (APL for its acronym in Spanish) for SFM practices, where a significant effort of both national and regional coordination among government agencies was needed. The outcome was 3,000 Ha of forest implementing SFM practices for three years, certified by the Agency for Sustainability and Climate Change (ASCC), but its impact is likely to be limited since it was noted that SFM practices of sclerophyll forest in Valparaíso has proven not to be profitable in the medium to long term.

⁸¹ <https://minagri.gob.cl/siembra-por-chile/>

⁸² <https://www.conaf.cl/nuestros-bosques/bosque-nativo/plan-siembra-por-chile-programa-de-restauracion-de-bosques-nativos-a-gran-escala/>

⁸³ <https://epochileagricola.cl/wp-content/uploads/2022/08/Siembra-por-Chile.pdf>

Income from harvested timber is insufficient to cover the costs of management, thus additional funds – which are neither secured nor available - are required to sustain this type of initiatives⁸⁴.

Regarding conflict resolution, interviewees stated that conflicts were not significant and could be resolved in the roundtables created by GEF interventions. The most important conflicts in the area are those related with the dispersion of agricultural land into portions of 5,000 sqm for recreational homes, and the introduction of export fruit farms which need to extend their boundaries and use a significant amount of water resources. The conflict for water use is mainly present between rural cooperatives producing drinking water and large agricultural producers, but all these issues were beyond the scope of GEF interventions. The approach implemented by the GEF in these cases was to improve water management/capture practices, drilling wells and enhance land productivity by investment in sustainable agricultural practices.

KQ5: To what extent have gender, resilience and private sector been taken into consideration in GEF programming and implementation in Chile?

Two of the three project documents reviewed did not have gender considerations. The Government of Chile required the inclusion of gender issues in all their policies and programs since 2000, therefore GEF-4104 conducted a social assessment establishing some guidelines for participation of women and indigenous peoples in the pilot areas and called for defining clear indicators and incorporating professionals from social areas into the project⁸⁵. The GEF-5135 did not have a specific approach for gender issues, and neither project incorporated social and gender indicators nor M&E systems to track progress on these projects' co-benefits⁸⁶. However, this case study did find several activities for empowerment of both indigenous people and women in terms of participation to workshops, access to finance and training, although there is no quantitative evidence on how these co-benefits resulted in better incomes or quality of life. Some interviewees reported that the GEF supported forest carbon monitoring system implemented by CONAF has evolved over time and now incorporates gender information in its database.

The role of women in GEF interventions is key for the success of GEF interventions, since they manage the land, attend workshops and many execute the onsite GEF activities. However, women own only 32% of the land and 17% of water rights, thus their access to natural resources, decision making and economic independence from their work is very limited. Women are particularly vulnerable to climate risks and disasters, especially in rural areas^{87,88}.

GEF projects in Chile have promoted participation of women and indigenous people for more than a decade, and some evidence shows that there is an increase of women working at different levels of environment-related government agencies: more than 50% of officials from the Ministry of Environment (MMA), and 45% of directives are women. In contrast, only 23% of personnel

⁸⁴ See para 101, footnote 11.

⁸⁵ Evaluación Social Proyecto Manejo Sustentable de la Tierra, nov. 2022; pages 16, 158, 159; https://www.conaf.cl/cms/editorweb/GEF-BM/Evaluacion-Social-PROYECTO_GEF-BM.pdf

⁸⁶ Terminal evaluation GEF-5135, para 113.

⁸⁷ Sexto Reporte del Estado del Medio Ambiente (REMA) 2021, <https://sinia.mma.gob.cl/wp-content/uploads/2022/06/REMA2021.pdf>

⁸⁸ https://gefcomunidades.mma.gob.cl/wp-content/uploads/2021/04/MujeryCampo_Final_conISBN.pdf

working in the National System of Protected Areas from CONAF are women⁸⁹. With the support of UN Women, the MMA plans to create a “Gender and Human Rights Office” to drive mainstreaming of these issues into national environmental policies⁹⁰.

The review of the portfolio of GEF interventions also shows that the concept of “resilience” promoted by these projects has been central to local community organizations, and all activities have been focused to increase capacity and level of organization of key stakeholders and small investments to demonstrate new agricultural practices, water management options, mitigation, and adaptation to facilitate the transition to the new climate conditions. These issues are included in the new conservation districts, sustainable livestock management and empowerment of local communities and authorities. The evidence shows that sustainability is bound to the engagement and motivations of key stakeholders and decision makers, who can champion GEF interventions while under implementation and beyond their completion⁹¹. Most GEF ID 4104 and 5135 interviewees from community organizations noted that the activities promoted by GEF are aligned with their will of remaining in their lands and keeping their rural way of life. They took advantage of the momentum created to advocate for replication and scale-up of results from GEF interventions in Combarbalá, and to some extent in Litheche, where all beneficiaries are actively using the equipment and training provided by GEF. In the same way, these interviews also revealed that several government officials from CONAF, MMA, municipalities, and professionals who participated in GEF projects are actively supporting – now from their current positions at several organizations – the GEF participatory approach, and the continuity of biodiversity monitoring⁹².

Participation of private sector in GEF projects has been limited or marginal. The concept of “private sector” has been restricted to small and in some cases medium landowners. Main stakeholders are community organizations and individual farmers. Although all GEF interventions tried to improve productivity of land through environmentally friendly practices, they did not establish partnerships that would channel farmers’ production to the main selling points. GEF projects are focused on subsistence farmers, small bee businesses or livestock rearing.

The private sector is usually perceived as having the proper competences and financing to address their problems and ensure compliance with the current environmental regulations. The country has several regulations to protect the environment, the most relevant being the Law of Environment that includes agencies responsible for the environmental impact assessment system⁹³, enforcement and compliance⁹⁴, and elaboration of policies, regulations, and plans⁹⁵. Health and Agriculture ministries – among other agencies- also have regulatory and enforcement roles on forests, agriculture, agrochemicals, pollution, land degradation, etc. Public and private

⁸⁹ IDEM 45, chapter 3, section 4.1.

⁹⁰ <https://mma.gob.cl/ministerio-de-medio-ambiente-anuncia-creacion-de-la-oficina-de-genero-y-derechos-humanos-con-apoyo-de-onu-mujeres/>

⁹¹ GEF-4104 Terminal Evaluation, para 103.

⁹² Professionals involved in the sample of GEF projects are applying GEF approaches in their work as officials for UN agencies, universities, and consultancy firms.

⁹³ <https://www.sea.gob.cl/>

⁹⁴ <https://portal.sma.gob.cl/>

⁹⁵ <https://mma.gob.cl/>

investments have to comply with national regulations and are subjects of supervision by different government bodies.

Two exceptions of important contributions from some large landowners in the Metropolitan and in Valparaiso regions are worth mentioning. In the Metropolitan region, the municipality of Pañalolén obtained the usufruct for 99 years of 117 Ha from private owners, to increase the land of the municipal park of Quebrada de Macul, and in Valparaiso the certification of 3,000 Ha of private native forest owners allowed sustainable management of forest in Casablanca valley.

Co-financing ratio of GEF interventions is approximately 1:5^{96,97}, and it's achieved mostly by contributions from government agencies, and there are not many details regarding the nature of private sector contributions. Mobilized financial resources from private sector entities are rare, and when they exist, their implementation does not involve significant coordination with the GEF initiative.

Summary of emerging findings and preliminary conclusions

GEF interventions have a clear alignment with key national climate and environmental issues. The technical inputs and policy advice provided to key national stakeholders contributed to the development of national and regional policies and regulations that are relevant to the country's dryland regions. GEF interventions to address dryland-specific environmental issues are found to be highly relevant by all stakeholders interviewed, since most of the country's land is subject to desertification and degradation risks. However, this relevance is not well reflected in the number of GEF initiatives implemented in the northern areas (arid and hyper-arid and transition desert to Mediterranean climates) in comparison to initiatives executed in the center and south zones. Possible explanations for this unbalance include a limited understanding of ecosystem services provided by the dryland ecosystems from national stakeholders, weak capacities of regional and local stakeholders, and the presence of the important mining industry in the northern zones that contribute heavily to the national GDP, whereas in the Mediterranean areas there are large exporting agricultural activities.

The GEF portfolio of projects is designed at the central government level with consultations to regional and local stakeholders, but the perception is that relevance would be higher if regional and local authorities had more participation at the very beginning of the projects' design phase. The evidence also revealed that relevance and appropriation of GEF interventions are increased when proper adaptive management is performed and consulted to all relevant regional and local stakeholders.

With regard to the type of support needed from GEF, stakeholders noted that new specific GEF focal areas/strategies/programs/funds for drylands are not necessary, since the countries have the responsibility to choose the intervention priorities and locations. GEF Agencies provide relevant technical inputs and advice to the government on the selection of these priorities. Stakeholders required more flexibility from GEF to introduce changes in the project results framework and activities, and the use of more realistic targets to achieve. Interactions between

⁹⁶ GEF-4104 Terminal Evaluation, para 56.

⁹⁷ GEF-5135 Terminal Evaluation, para 86

GEF and other donor/government interventions was difficult to assess since there was no records or systematization for this type of activities. However, interviewees stated that this coordination occurs in practice, and it has been useful when designing new GEF projects.

GEF interventions have a high impact on policy coherence at local level, promoted the elaboration of sound local regulations and coordinated actions among government agencies and local authorities to enhance environmental and socio-economic benefits. This coherence is a direct result from the GEF governance approach where participation of all relevant stakeholders is promoted and implemented in roundtables where binding-decisions are taken by a decision-making process based on beneficiary demands.

GEF contributions to policy coherence is also relevant when it comes of elaboration of high-level national policies and regulations thanks to their technical inputs, demonstrative experiences and advice provided to the country's main decision-makers responsible for the elaboration of national regulations and policies. However, important barriers for achieving policy coherence at regional and local level still remain, in terms of dispersion of environmental responsibilities in several government agencies, difficulties to implement in practice coordinated governance structures, and national development incentive programs for drylands and non-drylands regions executed by government agencies .

There are clear messages that GEF-promoted regional and local coordinated governance structures have not yet impacted the practical implementation of specific national incentive programs from government agencies. While these arrangements have been critical to improve projects' performance and alignment of regional and local stakeholders with the objective of getting the best outcomes from GEF interventions, their influence to adjust these national incentive programs to local scales has been minor. This issue is related to the inertia and the "offer-driven" approach of these agencies and their staff and extensionists that promote basic proven techniques among beneficiaries, even if their programs include more sustainable practices for financing.

Several local, small environmental outcomes were achieved by GEF interventions, especially those related to capture/retention of water, afforestation, and restoration of degraded lands. GEE, NDVI and FL/FG analyses suggested some small environmental improvements in forest cover in the biodiversity corridor in Tanumé and land management at small scale (O'Higgins Region). NDVI analysis revealed some evidence showing new tree plantings, but not much greening in communities of Orrego, El Espino and Vivanco. Some improvements in vegetation cover for some years are also noted. While still inside historical ranges, the improved vegetation is indicative of a positive influence from GEF interventions in these areas. The afforestation in Tanume was small and inside of a forest plantation cycle that was the only real pattern detected in both GEE and NDVI analyses. Similar to that is the case of GEF interventions in small farms which did not show a clear cause-effect for environmental benefits. Some small changes in one farm were more perceptible, since some portion of this farm appeared to be under some type of planting regime, but still very small.

Evidence of successful use of ancient/local knowledge to improve the environmental outcomes and their appropriation by local communities was also found during the conduct of this case study.

Most interviewees and monitoring and evaluation reports reviewed noted that most of targets for measuring the success of GEF interventions were overambitious, and had to be lowered, modified, or dropped during implementation. It was also noted that indicators based on land area covered are insufficient to capture more qualitative outcomes related with social dimensions such as empowerment, increased management capacities or impacts on personal life of beneficiaries.

Socio-economic benefits are more difficult to assess mainly due to the lack of proper indicators and information available for this type of assessment. Some estimates indicated that main benefits come from water provision/management (32%), forage provision (17%) and biodiversity conservation (23%). Benefits from green certification for SFM of sclerophyll forest are found insufficient to cover the cost of the forest management. Income or livelihood benefits were not monitored.

Trade-offs noted are not very important for GEF interventions reviewed, since small landowners and communities had an opportunity to put their demands on the table, which are addressed by regional and local authorities. However, these beneficiaries have important issues of competence for natural resources such water and land with external stakeholders (mining, agriculture, and forest companies). GEF interventions mitigate these conflicts and trade-offs by offering alternative water sources, regularization of water rights, and improvement of land productivity to farmers. There are cases where GEF projects have been key to reach consensus among several actors in order to agree strategic land planning at municipal level, establishing areas for economic activities, household construction, entertainment and commerce.

Participation of private sector from the sample of GEF projects has been limited or marginal in some cases. The concept of “private sector” has been applied to small and in some cases medium landowners with no established partnerships that would channel their production to main selling points. Mobilized financial resources from private sector entities are rare, and when they exist, their implementation does not involve significant coordination with the GEF initiatives. A few positive examples have been noted, of partnerships with large and medium size landowners, mainly in the certification of sustainable forest management (3,000 Ha) and dedicated land for biodiversity protection (117 Ha).

Sustainability and replication of outcomes from GEF interventions presented mixed results. On one hand, in areas where governance was based on legitimacy of established and experienced community organizations, funding from regional authorities for replication and scale-up of the experience was achieved and influenced the promotion of national rural policies. On the other hand, when governance mechanisms consisted in the creation of project’s ad-hoc community organizations, they vanished once the project ended, thus the coordination and momentum developed by GEF interventions cannot be maintained in time until a new project is in place. Success of GEF intervention and sustainability also appears dependent on the land property regime (collective or individual), where collective regimes seem to have stronger community organizations than those composed by individual owners. Evidence was also found on scale-up of GEF interventions in drylands at national level, where several government programs funded land restoration and sound agricultural practices along the entire country, but always as part of the main effort of improving land productivity.

ANNEX 1: PROJECT SITES VISITED

<i>Region/location</i>	<i>Property Name</i>	<i>Total Area (Ha)</i>	<i>Treated area (Ha)</i>	<i>Type of intervention</i>	<i>Geo- coordinates (GPS)</i>
Metropolitan/ Municipality of Peñalolén	Templo Bahái	86	86	Participation in the municipality's strategic conservation plan	-33.4757, -0.51278
	Quebrada de Macul Municipal Natural Park	490	N/A	Afforestation, environmental education, conservation and recreation.	-3.49312, -0.51791
O'Higgins/ Litueche	CEF Tanumé	3,710	2	Afforestation with Quillay de Colchagua Pine and eucalyptus management plans.	-34.17044, -71.94996
	Quebrada Honda (portion of land within CEF Tanumé)	1,193	231	Biological corridor and management of its core area.	-34.18444, -71.89855
	Pailimo Rural School	3	0.05	Native flora nursery and training	-34.29231, -71.78752
	Irma Menares	17.8	17	Exclusion fence, cattle drinking trough, rainwater accumulation ponds and well, afforestation with native flora	-34.1443, -71.7309/ -34.14703, -71.71442
	Maria Gonzalez	50	11.5	Exclusion fences, rainwater accumulation pool, afforestation with native flora, windbreak, meadow improvement	-34.28417, -71.76603

<i>Region/location</i>	<i>Property Name</i>	<i>Total Area (Ha)</i>	<i>Treated area (Ha)</i>	<i>Type of intervention</i>	<i>Geo- coordinates (GPS)</i>
	Maria Cruz Mori	38	5	Mobile drinker Rainwater accumulation pond and well.	-34.11883, -71.61032
Coquimbo/ Municipality of Combarbalá	La Laguna	1,336	N/A	Land restoration Water retention	-31.22267, -71.00254
	Community "La Colorada de Aguilera y Sarmiento"			Water retention	-31.22267, -71.00254
				Afforestation Sanitary pruning	-31.22267, -71.00254
	Llahuín Community El Espino	7,688	44	Afforestation Livestock exclusion fences	-31.32315, -71.04233
	Las Arenas Community El Espino			Sanitary pruning	-31.27569, -71.06877
	Las Arenas El Espino			Afforestation Livestock exclusion fences	-31.27569, -71.06877

<i>Region/location</i>	<i>Property Name</i>	<i>Total Area (Ha)</i>	<i>Treated area (Ha)</i>	<i>Type of intervention</i>	<i>Geo- coordinates (GPS)</i>
	Chingay Community "Orrego"	1,785	45	Afforestation Water retention works	-31.2588, -71.08959
				Land restoration Afforestation	-31.2588, -71.08959
				Regularization of water rights	-31.25663, -71.08847
				Sanitary pruning	-31.2588, -71.08959
	Pama Arriba Community "Vivanco"	630	81.48	Beekeeping	-31.23722, -71.03271
				Afforestation Land restoration	-31.23722, -71.03271
	Rodeo Viejo Individual owner	2	1.8	Beekeeping	-31.17998, -70.91697
				Land management Water management and storage	-31.17888, -70.91658

ANNEX 2: DETAILED GEOSPATIAL ANALYSIS OF THE SITES VISITED

Findings from Geospatial analysis

<i>Region/location</i>	<i>Property Name</i>	<i>Type of intervention</i>	<i>Geospatial findings</i>
Metropolitan/ Municipality of Peñalolén	Templo Bahái	Participation in the municipality's strategic conservation plan	N/A
	Quebrada de Macul Municipal Natural Park	Afforestation, environmental education, conservation, and recreation.	N/A
	CEF Tanumé	Afforestation with Quillay de Colchagua Pine and eucalyptus management plans.	This is a small area within the biodiversity corridor. NDVI analysis was done (CHL_Tanume_aff worksheet). GEE series shows it is a small area within a forest plantation. The NDVI shows that the area was cut in 2019 and is growing back since then. There isn't much evidence of afforestation from either the images or the NDVI, since the plantation cycle is the only real pattern that emerges from both.
	Quebrada Honda (portion of land within CEF Tanumé)	Biological corridor and management of its core area.	Forest lost/gain was done on this site, and I uploaded an Excel file showing the loss and gain data plus a map showing the same. The analysis shows that much of the corridor has been deforested in the last 20 years, especially the eastern side. Compared with the buffer area, the forest area has less area in total and also as a percentage of the original forested area. The most forest loss was in 2012 and there has been less since then. There was much more forest gain in the buffer area. The biodiversity corridor lost 55% (1,173 ha) of its forest area during this time span at a rate of 2.6% of forest area lost per year and gained 84 ha representing 3.9% of its forest area. The buffer area lost 71% of its forest area (2,492ha) and gained 301 ha, 8.6% of its forest area. The interpretation of this data depends on when the area was designated as a biodiversity corridor. If the designation came after 2012, that is better news as forest loss has dropped since then (although 2017 also had

<i>Region/location</i>	<i>Property Name</i>	<i>Type of intervention</i>	<i>Geospatial findings</i>
O'Higgins/ Litueche			significant loss). However, it appears this area has a history of being forest plantation, where huge swaths of area are cut cyclically and then regrown.
	Pailimo Rural School	Native flora nursery and training	N/A
	Irma Menares	Exclusion fence, cattle drinking trough, rainwater accumulation ponds and well, afforestation with native flora	<p><u>Forest plantation</u></p> <p>NDVI analysis was done (CHL_Irma_forest_plant). GEE images do not reveal any clear tree growth—field looks bare in all images.</p> <p>The MODIS NDVI shows constant peaks and the Sentinel may show that peaks are dropping although the trend is not strong and may be only for the last three years.</p> <p><u>Exclusion fences</u></p> <p>NDVI analysis was done (CHL_Irma_pasture). GEE images show area is semiforested and don't reveal much change overtime. NDVI shows similar to previous area—no clear change in MODIS and slightly decreasing trend over last three years in Sentinel.</p> <p><u>Meadow management</u></p> <p>NDVI analysis was done (CHL_Irma_fence). GEE images show some tree removal between 2004-2013 and potentially some greening in 2020 image (but may be seasonal). NDVI shows no significant change over time.</p>
	Maria Gonzalez	Exclusion fences, rainwater accumulation pool, afforestation with native flora, windbreak, meadow improvement	NDVI analysis was done (CHL_Gonzalez_fence_past). GEE shows cyclical agricultural growth but no clear improvement. MODIS NDVI shows steady peaks over time and Sentinel shows some decrease in last few years (since many sites in

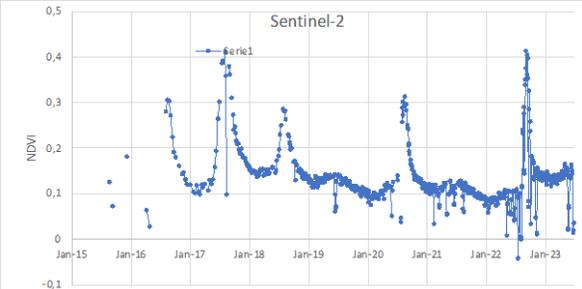
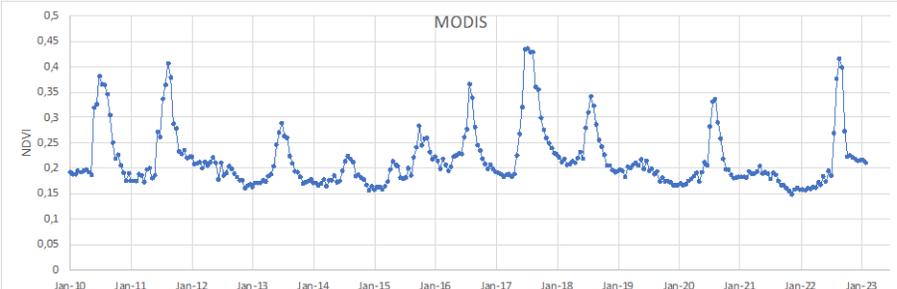
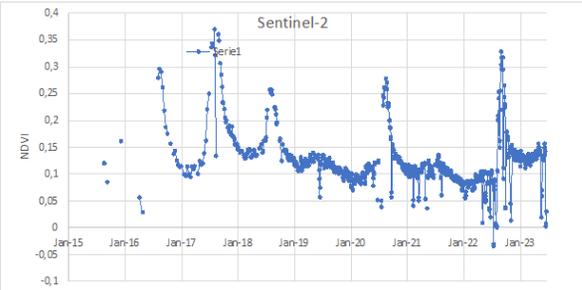
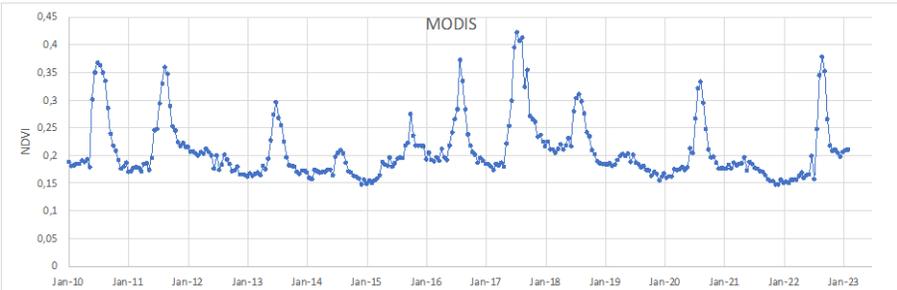
<i>Region/location</i>	<i>Property Name</i>	<i>Type of intervention</i>	<i>Geospatial findings</i>
			<p>Chile show this, it can be inferred that this observed change is weather related and not due to project intervention).</p> <p><u>Plantacion of quillay</u></p> <p>No analysis done for this area because the area is very small. It can be seen in the GEE images for the Pradera y cerco Gonzales on the southside of the image.</p>
	Maria Cruz Mori	<p>Mobile drinker</p> <p>Rainwater accumulation pond and well.</p>	N/A
Coquimbo/ Municipality of Combarbalá	La Laguna Community “La Colorada de Aguilera y Sarmiento”	<p>Land restoration</p> <p>Water retention</p>	<p><u>Rainwater accumulation lagoon</u></p> <p>NDVI analysis was done (CHL_Colorada_lagoon). GEE images clearly show construction of the new lagoon in all images, but water appears in 2017. Not much greening visible though. NDVI shows some increase in peaks from 2018 till present, which could be a sign of project influence, although some years have no peaks at all.</p>
		<p>Water retention</p>	<p><u>Water channeling works, pruning</u></p>
		<p>Afforestation</p> <p>Sanitary pruning</p>	<p>NDVI analysis was done (CHL_Colorada_chan). GEE images clearly show construction terraces in 2022. Not much greening visible though. NDVI shows some increase in peaks from 2018 till present, which could be a sign of project influence, although some years have no peaks at all.</p>
	Llahuín Community El Espino	<p>Afforestation</p> <p>Livestock exclusion fences</p>	<p>NDVI analysis was done (CHL_Espino_for). GEE shows little change, maybe some faint lines on the landscape in the 2022 image. NDVI shows decrease since</p>

<i>Region/location</i>	<i>Property Name</i>	<i>Type of intervention</i>	<i>Geospatial findings</i>
	Las Arenas Community El Espino	Sanitary pruning	2016/2017 but might just be climate because it matches pattern between 2011-2015.
	Las Arenas El Espino	Afforestation Livestock exclusion fences	NDVI analysis was done (CHL_Espino_aff). GEE shows changing vegetation patterns but no real increase or decrease over time. Some tree growth appears to be forming in northwestern corner as of 2017 image. NDVI shows similar patterns to previous site.
	Chingay Community "Orrego"	Afforestation Water retention works	<p><u>Terraces and afforestation</u></p> <p>NDVI analysis was done (CHL_Orrego_aff_ter). GEE shows terraces and maybe some small evidence of new tree plantings in 2022 image but not much greening. NDVI shows pretty steady peaks over time although note two years, 2019 and 2021 where the peaks are very small, maybe years of drought?</p> <p><u>Afforestation</u></p> <p>NDVI analysis was done (CHL_Orrego_aff). Shown in same GEE images as above and same patterns emerge.</p>
Land restoration Afforestation			
Regularization of water rights			
Sanitary pruning			
	Pama Arriba Community "Vivanco"	Beekeeping Afforestation	<p><u>afforestation, new water source, dam</u></p> <p>NDVI analysis was done (CHL_Vivanco_aff). GEE images show some increased road building and possible some tree planting in south center of the area. NDVI shows decreasing trend in peaks, although not outside historical range.</p>

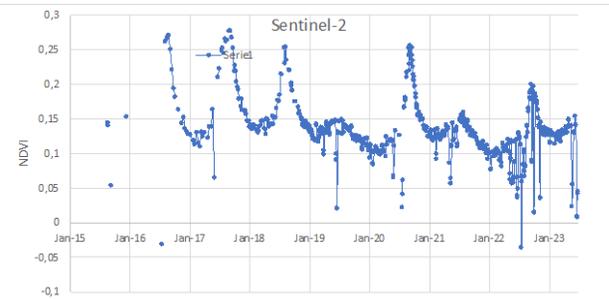
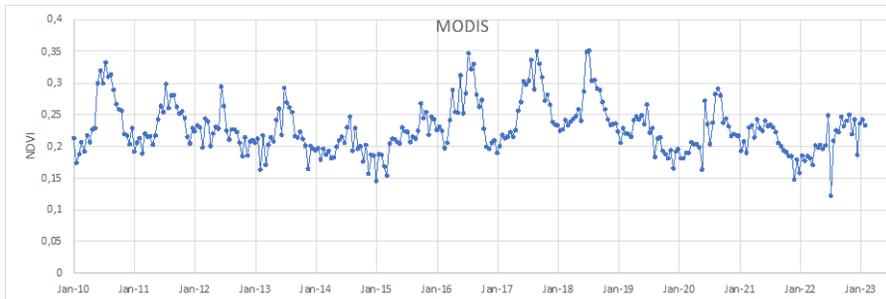
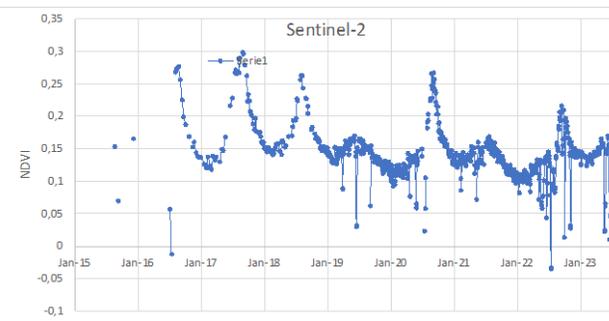
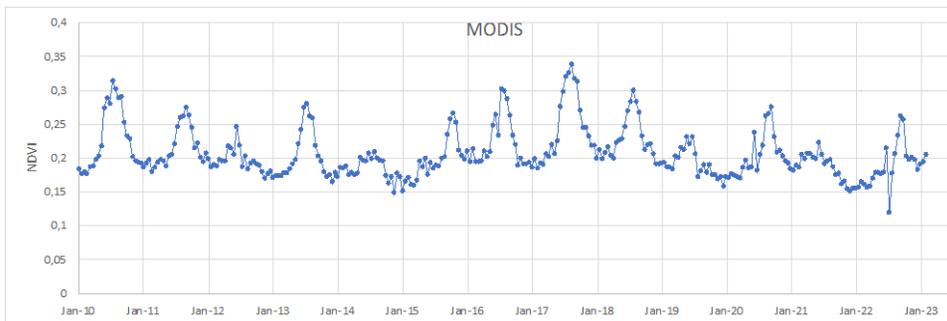
<i>Region/location</i>	<i>Property Name</i>	<i>Type of intervention</i>	<i>Geospatial findings</i>
		Land restoration	
	Rodeo Viejo Individual owner	Beekeeping	<p><u>Dam, terraces, water accumulation</u></p> <p>NDVI analysis was done (CHL_Rodeo_ter). GEE images show new terracing in 2021 image but no evidence of increased greening. NDVI shows similar patterns to El Espino—peaks decrease since 2017 but are not outside the patterns from 2011-2015.</p>
		Land management Water management and storage	

NDVI & FL/FG Analyses

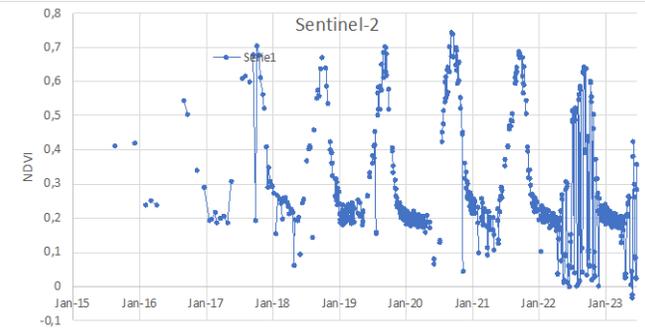
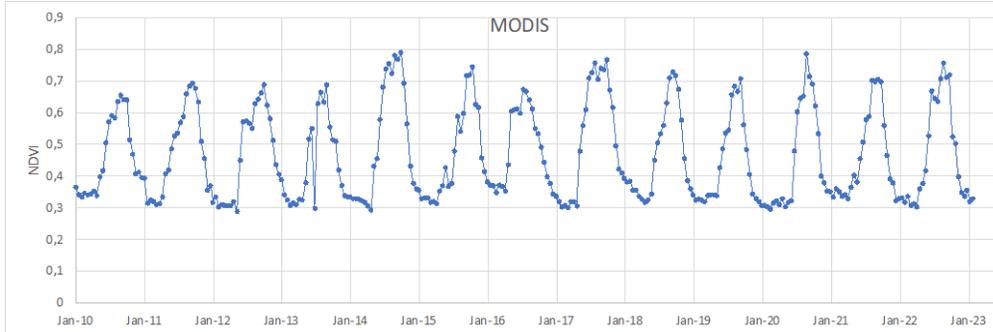
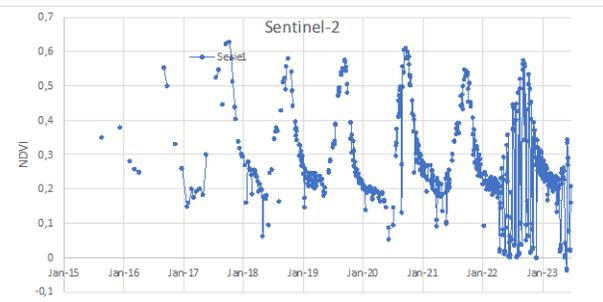
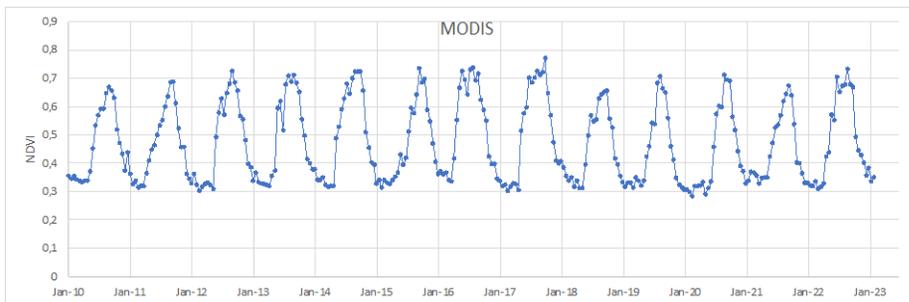
La Colorada (Coquimbo Region)



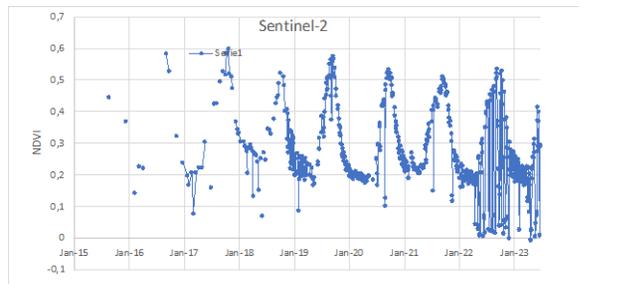
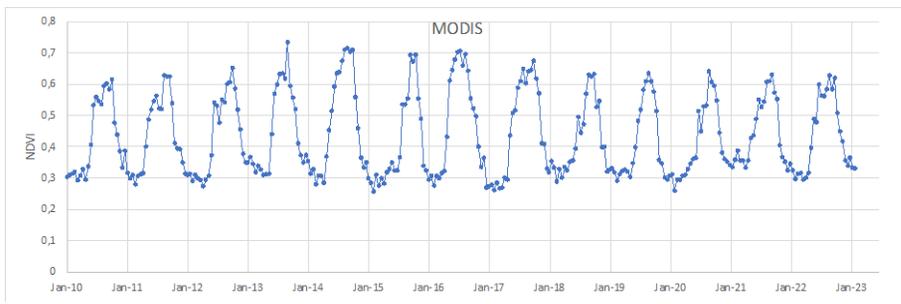
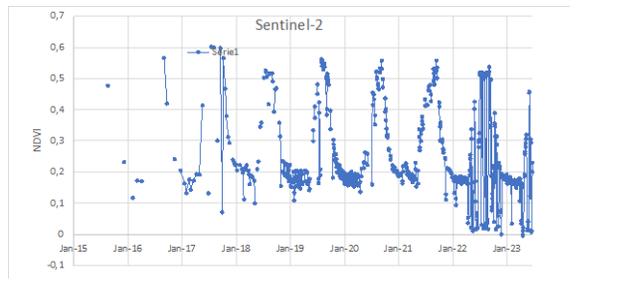
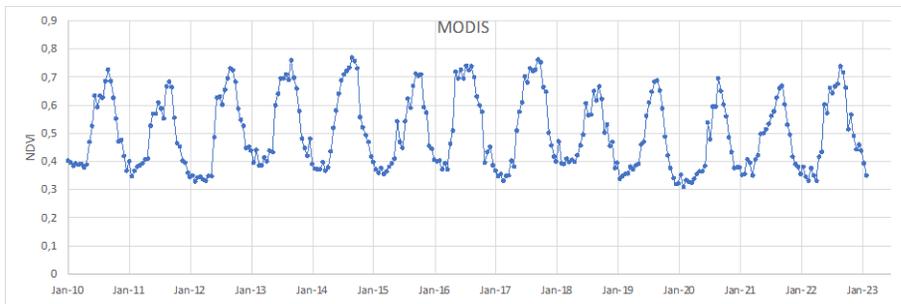
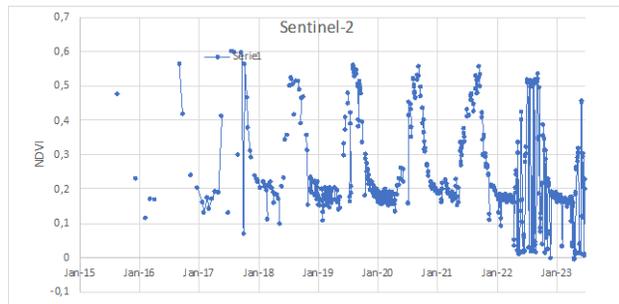
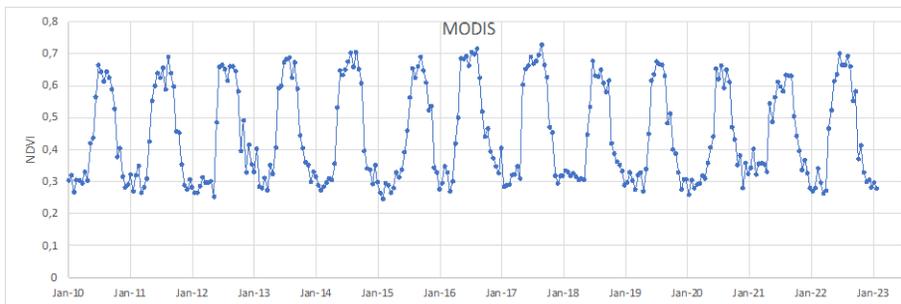
El Espino (Coquimbo Region)



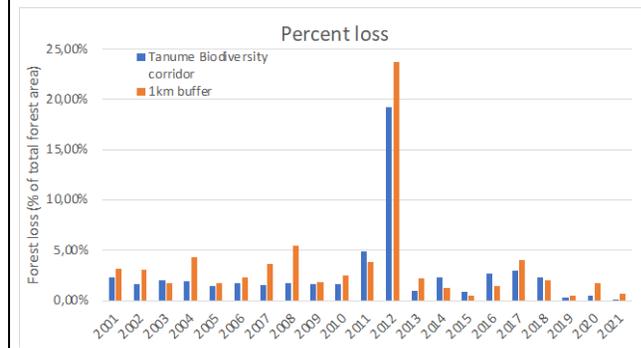
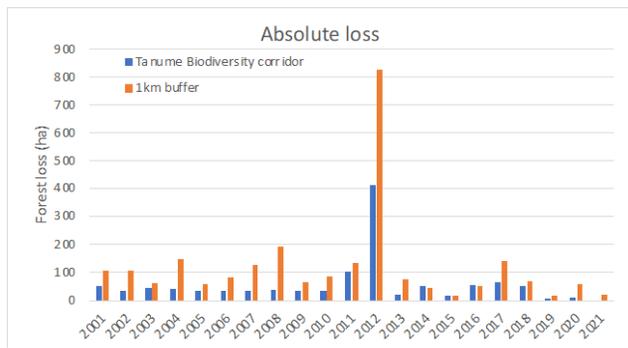
María González (O'Higgins Region)



Irma Menares (O'Higgins Region)



Biodiversity Corridor of Tanumé (FL/FG) O'Higgins Region



GEE Analysis

María González (afforestation O'Higgins)



Oct 2020



Mar 2018



Oct 2014

María González (Pasture, fences, plantation O'Higgins)



Oct 2020



Mar 2018



Oct 2014

<p>Irma Menares (Exclusion fences O'Higgins)</p>		
 <p>2021</p>	 <p>2018</p>	 <p>2013</p>
<p>Irma Menares (Forest Plantation O'Higgins)</p>		
		

Jan 2021	Oct 2020	Jan 2015
Irma Menares (Pasture management O'Higgins)		
 <p data-bbox="203 776 323 808">Oct 2020</p>	 <p data-bbox="779 769 909 802">Mar 2018</p>	 <p data-bbox="1354 769 1486 802">Sept 2013</p>
Tanume (Afforestation, O'Higgins)		
 <p data-bbox="203 1325 323 1357">Oct 2022</p>	 <p data-bbox="779 1312 905 1344">Dec 2018</p>	 <p data-bbox="1354 1305 1478 1338">Oct 2014</p>

Tanume (Biodiversity corridor, O'Higgins)		
		
Febr 2021	May 2019	Oct 2014
La Colorada (water channeling, Coquimbo Region)		
		
Oct 2022	Oct 2017	Sept 2014
Orrego (Terraces & Afforestation, Coquimbo Region)		



Dec 2022



Oct 2017



Dec 2010

Vivanco (Afforestation & water source, Coquimbo Region)



Dec 2022



Oct 2017



Sept 2014

Rodeo Viejo (Dam & Terraces & water harvest, Coquimbo Region)

 <p>April 2021</p>	 <p>Nov 2016</p>	 <p>Sept 2014</p>
<p>El Espino (Afforestation, Coquimbo Region)</p>		
 <p>Mar 2022</p>	 <p>Oct 2017</p>	 <p>Sept 2014</p>
<p>El Espino (Afforestation, Coquimbo Region)</p>		



Mar 2022



Oct 2017



Sept 2014

ANNEX 3: LIST OF INTERVIEWS

No	Invitee Name	Start Date & Time	End Date & Time	Organization	Position	Region
1	Contanza Troppa	10-04-23 15:00	10-04-23 16:00	Conaf	Gerenta de conservacion de ecosistemas	Metropolitana
2	Mario Meléndez Rivera	29-03-23 09:30	29-03-23 10:30	Corporación Nacional Forestal	Jefe Provincial Elqui	Coquimbo
3	Karina Cabello Escobar	29-03-23 11:00	29-03-23 12:00	I. Municipalidad de San José de Maipo	Encargada de Unidad de Medioambiente	Metropolitana
4	Barbara Jarschel	28-03-23 11:00	28-03-23 12:00	FAO	LTC	RLC
5	Gabriela Encalada	28-03-23 15:15	28-03-23 16:15	Banco Mundial	Especialista Ambiental Senior - Gerente Proyecto	USA
6	Paloma Caro	28-03-23 15:15	28-03-23 16:15	Banco Mundial	Environmental Specialist	USA
7	miguel stutzin	28-03-23 09:00	28-03-23 10:00	ministerio del medio ambiente	punto focal operativo GEF	metropolitana
8	Tomás Vergara	10-04-23 12:00	10-04-23 13:00	PARQUE MAHUIDA DE LA REINA	GERENTE	Metropolitana
9	Daniel Álvarez Latorre	27-03-23 15:00	27-03-23 16:00	Ministerio del Medio Ambiente	Coordinador de Políticas de Biodiversidad y Cambio Climático	Metropolitana
10	Robert Erath	28-03-23 16:30	28-03-23 17:30	UNEP	Task Manager	LAC
11	Fernando Valenzuela	17-04-23 16:30	17-04-23 17:30	IEB	Gerente	Metropolitana

No	Invitee Name	Start Date & Time	End Date & Time	Organization	Position	Region
12	Claudia Cortés	31-03-23 15:15	31-03-23 16:15	Secretaría Regional Ministerial de Medio Ambiente, RM	Encargada RRNN y Biodiversidad	Metropolitana
13	carlos torres	27-03-23 11:30	27-03-23 12:30	FAO	Asistente Técnico Proyecto +Bosques	Metropolitana
14	Jaime Rovira Soto	29-03-23 14:45	29-03-23 15:45	GEF Montaña	Encargado sustentabilidad	Metropolitana
15	Rodrigo Morera	31-03-23 11:00	31-03-23 12:00	FAO	Task Manager GEF-GCF	Metropolitana
16	Rodrigo Morera	07-04-23 09:45	07-04-23 10:45	FAO	Task Manager GEF-GCF Representación, FAO Chile	Metropolitana
17	Paulina Cerda	17-04-23 11:00	17-04-23 12:00	Municipalidad de San José de Maipo	Coordinadora del Programa PRODESAL Dirección de Desarrollo Comunitario (DIDECO)	Metropolitana
18	Petra wallem	17-04-23 09:45	17-04-23 10:45	GEF Montaña	Encargada Biodiversidad	Metropolitana
19	Ricardo Cofré	27-04-23 09:30	27-04-23 10:30	Municipalidad de Peñalolén	Director de Medio Ambiente	Metropolitana
20	Mercedes Jorquera	21-04-23 09:00	21-04-23 10:00	CONAF	Directora Regional	O'Higgins
21	Hugo Barrueto	21-04-23 09:00	21-04-23 10:00	CONAF	Climate Change and Environmental Services Coordinator	O'Higgins
22	Gabriela Soto Nilo	05-05-23 11:30	05-05-23 12:30	CONAF	Jefa departamento	Metropolitana
23	Patricio Nagel	26-04-2023 11am	26-04-2023 1pm	Community El Durazno	Partner	Combarbalá

No	Invitee Name	Start Date & Time	End Date & Time	Organization	Position	Region
24	Gonzalo Gómez	26-04-2023 11am	26-04-2023 1pm	Community El Durazno	Partner	Combarbalá
25	Luis Plaza	26-04-2023 11am	26-04-2023 1pm	Comunity Movilo	President	Combarbalá
26	Marcelo Zepeda	26-04-2023 11am	26-04-2023 1pm	Community Aguilera y Sarmiento	President	Combarbalá
27	Roberto Lizama	26-04-2023 11am	26-04-2023 1pm	Community Flores Saavedra	Delegate	Combarbalá
28	Baltazar Ramírez	26-04-2023 11am	26-04-2023 1pm	Community Vivanco	President	Combarbalá
29	Leticia Ramírez	26-04-2023 11am	26-04-2023 1pm	Mesa Rural Campesina CCCC	President	Combarbalá
30	Javier Vega	26-04-2023 11am	26-04-2023 1pm	Regional Government of Coquimbo	Regional minister	Coquimbo
31	José Miguel Torres	26-04-2023 11am	26-04-2023 1pm	CONAF Regional Coquimbo	Regional Director	Coquimbo
32	Inal Painemal Veloso	26-04-2023 11am	26-04-2023 1pm	CONAF Regional Coquimbo	Responsible of Forests	Coquimbo
33	Francisco Acevedo	26-04-2023 11am	26-04-2023 1pm	CONAF Regional Coquimbo	Staff	Coquimbo
34	Pedro Catillo	24-04-2023. 11am	24-04-2023 12pm	Municipalidad de Combarbalá	Mayor	Combarbalá
35	Denisse Rojo Echeverría	24-04-23	26-04-23	CONAF Regional Coquimbo	Consultant	Combarbalá

No	Invitee Name	Start Date & Time	End Date & Time	Organization	Position	Region
36	Juan Tapia	25-04-2023. 6pm	25-04-2023 7pm	Asociación de Comunidades Agrícolas de Combarbalá	President	Combarbalá
37	Prosperina Quijada Arias	10-05-2023 12am	10-05-2023 13am		Beneficiary	Litueche
38	Raúl Yañez	10-05-2023 12am	10-05-2023 13am		Beneficiary	Litueche
39	Jaime Ramírez	10-05-2023 12am	10-05-2023 13am	Escuela Rural de Pailimo	Director	Litueche
40	María Rosa Morales	10-05-2023 5pm	10-05-2023 13am		Beneficiary	Litueche
41	Luis Osorio	10-05-2023 12am	10-05-2023 6pm		Beneficiary	Litueche
42	Verónica Oré	15-05-2023. 9:30am	15-05-2023. 10:30am	Directora Centro Bahai Sudamérica	Partner	Metropolitana
43	Natalia Rebolledo	15-05-2023 9:30am	15-05-2023. 12am	Municipality of Peñalolén	Jefa del Depto. gestión de parques y protección de la biodiversidad	Metropolitana

TECHNICAL DOCUMENT 8 - DRAFT ETHIOPIA CASE STUDY REPORT



Dugna Fango *woreda* (district): Non-restored and restored land areas side by side

((GEF ID 9135, UNDP ILM project, FS-IAP)



Mirab Azernet Berbere *woreda* (district): Restored watersheds and hillsides - bench terraces for crop

and fodder production (GEF ID 5520, Ethiopia SLMP program)

Introduction, methodology and scope

- lxviii. This Ethiopia Case Study is part of the Strategic Country Cluster Evaluation (SCCE): Global Environment Facility (GEF) Support to Drylands Countries. Case studies are a main component of the SCCE to enable in-depth exploration of the factors driving performance and sustainability of drylands-related interventions. Case studies focus on the two overarching evaluation objectives:
- i. assessing the relevance and coherence of GEF investments in dryland countries, and
 - ii. assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.
- lxix. Ethiopia was one of six case study countries chosen for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country.

Methodology

- lxx. The case study was undertaken through in-person and virtual interviews in Addis Ababa and field visits to two projects by the national consultant in April and July 2023. The study used a mixed methods approach, with desk reviews of project and country documents and interviews with representatives of the Government of Ethiopia, implementing agencies and project staff. Project beneficiaries were interviewed in several sites.

Scope and Limitations

- lxxi. The relevant portfolio for the SCCE drylands evaluation in Ethiopia covers six GEF projects, four of which were closed at the time of the mission, one that is ongoing, and one that has been CEO endorsed (Table 1). Two of these projects are regional and are not further considered in this case, due to a lack of clarity in available documentation on whether Ethiopia was covered and a lack of familiarity with the projects among key informants.⁹⁸

The report focuses in its analysis on three projects: the long-term World Bank implemented and co-financed Soil and Land Management Program (SLMP), which had two GEF financed project phases (GEF ID 2794 and 5220, SLMP I and II) and the UNDP implemented Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience (ILM) that was part of the GEF Resilient Food Systems Integrated Approach Pilot (RFS-IAP, GEF ID 9135). These three projects have terminal evaluations (TE). The SLMP program was also evaluated by

⁹⁸ These two regional projects are implemented the World Bank (GEF ID 3872) on Monitoring carbon, environmental and socio-economic co-benefits in Sub-Saharan Africa (2008-2012) and by UNEP (GEF ID 9825) on Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries (launched in 2019). There was no implementation information (no PIR or TE) for the completed WB regional project (GEF ID 3872) and it is unknown to what extent the UNEP project covers Ethiopia.

the World Bank Independent Evaluation Group (IEG) in 2020 after completion of its second phase. The TE for GEF 9135 was completed but had not yet been submitted by UNDP to the GEF at the time of this evaluation.

- lxxii. The SLMP effectively started implementation in 2011 and its two phases targeted 135 critically degraded watersheds in the Ethiopian highlands over more than 10 years, with a total disbursement of US\$ 124 million. The SLMP was executed by the federal Ministry of Agriculture (MoA) and the regional Bureaus of Agriculture. The SLMP had two main objectives: to reduce land degradation and improve land productivity in agricultural landscapes. It also supported secure land tenure. A third phase of the SLMP (2019-2024) is ongoing but was not supported by GEF due to other GEF national priorities.
- lxxiii. The ILM operated in six regions and 12 project *woreda* (districts) from May 2017 – April 2023. It was implemented by the Federal Environmental Protection Authority (formerly Environment, Forest and Climate Change Ministry). The ILM project relied mainly on GEF funding of US\$ 11.2 million with US\$ 0.5 million co-financed by UNDP and US\$ 15 million co-financed by the GoE, the latter mostly in kind. The ILM project was aimed at improving food security and resilience through land restoration, more sustainable agriculture production and increased livelihood opportunities.
- lxxiv.
- lxxv. The implementation of the CEO endorsed and UNDP implemented project on Preventing forest loss, promoting restoration and integrating sustainability into Ethiopia's coffee supply chains and food systems (GEF ID 10243) has not yet started as its executing agency has been uncertain following Government reorganization of its environmental and climate change responsibilities. The project which is part of the Food Systems, Land Use, and Restoration (FOLUR) Impact Program provides additional insights on relevance and coherence to this report.

Table 1 – Ethiopia GEF projects with drylands focus 2009-2023 ⁹⁹

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co-finance (US\$m)	Notes
2794 World Bank	SIP: Country Program for Sustainable Land Management (ECPSLM) (or SLMP I)	GEF-4 2008-13	LD	Closed satisfactory (TE GEF IEO APR) moderately satisf.(4) WB ICRR)	9.0	28.8	
3872 World Bank regional	SIP: Monitoring Carbon and Environmental and Socio-Economic Co-Benefits of BioCF Projects in SSA	GEF4 (2008-12 indicative PIF)	LD	Closed (no TE)	0.9	10.4	Limited information available
5220 World Bank	PSG Sustainable Land Management Project II (SLMP II)	GEF-5 2014-18	BD, CCM, LD	Closed (TE positive, satisf.(5))*	14.0	94.7	
9135 UNDP	Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience (ILM)	GEF-6 2018-22	LD, BD, CCM	Closed (TE positive)**	11.2	[145.0] ***	Project was part of regional GEF Resilient Food Systems Integrated Approach Pilot (RFS-IAP)

i. ⁹⁹ Annex 4 provides a list of districts covered by GEF projects

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co-finance (US\$m)	Notes
9825 UNEP regional	Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries	GEF-6 2019-22 (planned)	LD	Ongoing	1.1	12.2	Relatively recent project; PIR 2021 is available.
10243 UNDP	Preventing forest loss, promoting restoration and integrating sustainability into Ethiopia's coffee supply chains and food systems	GEF-7 2022-28 (planned)	LD, BD	CEO endorse-ment cleared	22.2	208.5 (mostly in kind)	Project is part of global GEF Food Systems, Land Use, and Restoration (FOLUR) Impact Program

- lxxvi. * The TE is the World Bank Implementation Completion and Results Report (ICRR) for the Agriculture Sector Wide Approach Support Project
- lxxvii. ** TE was made available to the evaluation mission but has not yet been officially submitted by UNDP to GEF
- lxxviii. *** Planned, of which close to US\$ 15 million materialized, mostly in kind as Government contribution

Findings

2.1 Relevance

- lxxix. Ethiopia's vast dryland areas are under high environmental and population pressure, with highly degraded farm and communal lands and insecure land tenure. Drylands are ecologically and economically diverse. Ethiopia's drylands cover more than two thirds of the country's land mass. About one third of the country's population lives in these areas, and this share is growing as people migrate out of highly degraded highland areas and settle in the drylands. Most of Ethiopia drylands are in the country's lowlands, which are dominated by pastoral livestock systems, but with climate change there are growing areas of "drylands in the highlands" (Annex 3, Figure A.1).¹⁰⁰ Drylands in Ethiopia face serious and interlinked environmental and economic challenges. These include aridity and increasing water scarcity, prolonged and frequent droughts and chronic food insecurity, inadequate public services delivery and underdeveloped social and physical infrastructure, and rapid population growth and youth unemployment. These factors increase pressure on land and natural resources, leading to significantly expanded crop land areas (Figure A.2). Ethiopian drylands represent fragile ecosystems but also have the potential to contribute significantly to the country's development if its vast underground water resources are managed and used wisely, especially in the lowlands. Ethiopia's 2021 National Drylands Restoration Strategy takes a multisectoral approach that combines the goals of ecological restoration, market-oriented livestock and crop production, and diversified livelihood development options (Annex Box A.1).
- lxxx. Both the highlands and the lowlands areas of Ethiopia are affected by high rates of degradation of natural resources, with soil erosion and the loss of vegetation and tree cover in the highlands and deteriorating environmental conditions of the pastoral rangelands. Long-term degradation of individual farmlands and communal areas has resulted in substantial losses to the economy, in the range of 2-3 percent of the country's GDP.¹⁰¹ Land degradation is a major cause of low and declining agricultural productivity, rural poverty, and food insecurity in Ethiopia. In Ethiopia's highlands, including its drylands, the combination of fragile soils, steep slopes, agro-climatic conditions, unsustainable intensification of agriculture and traditional cultivation techniques has led to excessive soil erosion and land degradation. Farming systems have been dominated by low-input cereal production, which provides insufficient ground cover during the period of most erosive rainfall, and livestock production, which is mainly based on open access to grazing lands in woodlands and forests. The widespread use of crop residues as livestock feed and the diversion of animal manure as fuel have reduced soil organic matter. The high dependence on wood and other biomass for household energy (95 percent of national energy consumption) and expansion of

¹⁰⁰ Ministry of Agriculture and PENHA, 2022. Ethiopian National Drylands Restoration Strategy.

¹⁰¹ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

agriculture into forested areas have reduced forest cover over the past century from 40 percent to 2.4 percent of the total land area in 2005.

- lxxxii. Another driving force for land degradation is the insecurity of land tenure, or lack of clearly defined land rights, for coordinating the management of common pool resources, including communal pastures and hillsides; this insecurity undermines land users' incentives to invest in SLM practices.
- lxxxiii. The GEF projects chosen for drylands analysis in Ethiopia were highly relevant for addressing the environmental challenges described on these lands. They were mostly focused on drylands in the country's highlands. The GEF supported Ethiopian Soil and Land Management Program (SLMP I and II) and the Integrated Landscape Management project (ILM) have been dealing with a wide range of environmental and social challenges in Ethiopia's dryland areas, by implementing investments and activities to reduce land degradation and water scarcity, food and land insecurity, and to improve market access and alternative farm and non-farm livelihoods. They have been highly relevant to address the drivers of environmental degradation in these areas. Most of GEF's project sites were located in Ethiopia's highlands. The SLMP was designed to reduce land degradation and increase agricultural productivity in both drylands and more humid areas (see below, including Table 2). Typical interventions in the SLMP included the construction of physical soil and water conservation measures, such as stone terraces, soil bunds, check-dams and trenches; tree planting and area closures to rehabilitate degraded communal lands (hillsides and pastures); support for water harvesting, small scale irrigation and agroforestry; and improved seeds and agronomic practices for individual farmers, combined with better market access. The keeping of small ruminant livestock, poultry, and bees aimed to benefit and enhance the inclusion of landless families, youth, and women. These interventions were expected to decrease land degradation, diversify livelihoods, improve farmers' resilience to climate shocks, and reduce greenhouse gas emissions. Building technical and management capacities of public officials and farmers was a critical feature of the SLMP.¹⁰²
- lxxxiiii. The ILM project followed an integrated environmental and socio-economic approach, focusing on watershed management and improved agriculture practices. It also included land restoration and support for locally relevant value chains and off-farm income generating activities (IGAs). 70% of the project budget and intervention went into these activities. A second component was aimed at building strengthening institutions and environmental awareness and technical capacities of project steering committees, farmers groups and school clubs etc., mostly in the districts where the project worked.
- lxxxv. **There were similarities and differences between the SLMP and ILM approach. The main similarities were that they followed a decentralized area or landscape approach that emphasized working directly with the districts. Both adopted a cross-sectoral approach that linked environmental and NRM activities to socio-economic drivers of degradation and emphasized institutional NRM governance at watershed level through farmer groups and local authorities. There were three major differences. Due**

¹⁰² Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II; see also SLMP Theory of Change Annex Figure A.3.

to its larger budget the SLMP covered significantly more sites and provided more costly environmental and socio-economic physical infrastructure, especially through terracing, small-scale irrigation and access roads. The ILM relied more on biological approaches (tree planting, area closures etc.) and smaller infrastructure works. The SLMP paid explicit attention to land tenure through land titling and mitigating weaker tenure in communal lands, whereas the ILM considered land tenure issues through improved NRM governance and conflict resolution mechanisms. Last, the ILM was more food-security and poverty oriented in its district targeting, while the SLMP's geographic focus was more on food-secure areas with emphasis on disadvantaged and marginal groups in these areas.

- lxxxv. The main evolution was for GEF and its co-finance partners in Ethiopia to move from a narrower SLM/land degradation focus to an integrated watershed approach to address the fundamental drivers of environmental degradation holistically. After the second phase of SLMP II was completed the Government decided to use GEF resources elsewhere. A drylands focus was continued through engaging in the UNDP ILM FS-IAP project at the time.
- lxxxvi. The new UNDP implemented Coffee landscapes project aims to promote sustainable integrated landscapes around efficient value chains, within and on the frontiers of Ethiopia's remaining forests and coffee as a key commodity. The integrated approach would be relevant not only for reducing land degradation through sustainable agricultural intensification, market access and forest management, but also for enhancing biodiversity through genetic agricultural gene-pool preservation in these areas. The Coffee landscapes project distinguishes itself from prior SLMP and ILM approaches in so far as that it aims to put more emphasis on institutional arrangements and capacities for integrated land use planning and implementation, on multi-stakeholder PPP platforms for generating sustainable and profitable coffee value chains at local, regional and national levels, and participatory sustainable forest management since forests are important for coffee production under shades, in line with FOLUR IP thematic priorities.¹⁰³
- lxxxvii. The GEF projects, and especially the SLMP and the Coffee landscapes project, also were or are targeting many areas that are not categorized as drylands but are increasingly affected by climate change. The two World Bank implemented and co-financed SLMP projects worked either equally (50 per cent in SLMP I) or mainly (67 per cent in SLMP I) in non-drylands (Table 2). Drylands and some of the specific drylands related issues were not the primary criteria for the World Bank SLMP rationale and choice of program locations in the country. Half of the UNDP implemented Coffee landscapes project zones will be located in drylands and drylands forests, the other half in humid zones. Only the UNDP implemented ILM, which was part of the GEF RFS IAP, is clearly drylands focused, partly as UNDP agreed with other donors already back in the 2000s to focus its SLM work more on drylands (see Section 2.2 further below). The ILM has 86 per cent of its targeted areas located in drylands.

¹⁰³ GEF CEO Endorsement document of GEF ID 10243

Table 2 – Ethiopia GEF projects drylands status (IEO classification)

GEF ID/ Agency	Project Name	Drylands				Non-drylands
		Hyper-arid	Arid	Semi-arid	Dry sub-humid	Humid
2794 WB	Country Program for Sustainable Land Management (SLMP I)	-	-	17%	33%	50%
5220 WB	Sustainable Land Management Project II (SLMP II)	-	-	17%	17%	67%
9135 UNDP	Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience (ILM)	-	29%	14%	43%	14%
10254 FAO	Preventing forest loss, promoting restoration and integrating sustainability into Ethiopia's coffee supply chains and food systems	-	-	25%	25%	50%

lxxxviii. Source: GEF IEO GIS analysis 2023

lxxxix. The GEF IEO's geospatial analysis for this evaluation compared areas of high occurrence and severity of drylands environmental and socioeconomic challenges with GEF project locations at subnational level. The analysis found that the selected projects for Ethiopia covered a large part of the (non-pastoral) drylands in the Northern parts of the country with high drylands relevance, as well as less dryland relevant areas in the Ethiopian Central/Southern highlands although some of these areas are increasingly drought prone. **The drylands work by GEF in Ethiopia has been mostly focused on the country's highlands and had limited coverage of the country's drylands in the lowlands (largely in Afar, Somali and parts of Oromia region) that are currently mainly used for pastoral agriculture.**

xc. National focal points of the UNCCD, CBD, and UNFCCC were actively engaged in project design and served as members of the national steering committees of the SLMP (World Bank) and the ILM (UNDP). The ILM executing agency, the Environmental Protection Authority, also houses the national focal points for UNCCD and UNFCCC. The Ethiopian Biodiversity Institute (focal point for CBD) is accountable to the Ministry of Agriculture, which implemented the SLMP.

2.2 Coherence

2.2.1 Coherence of environmental and climate change policies in Ethiopia

- xc. Ethiopia has a full range of policies related to GEF focal areas and strategic priorities, including a new Drylands Strategy (2021), a broad climate resilient green economy (CRGE) strategy, updated Nationally Determined Contribution (NDC) (2021), and a Land Degradation strategic framework.¹⁰⁴ Some are dated, such as the Biodiversity Strategy of 2005. Others are not well operationalized and adapted to the different regional socio-ecological contexts.¹⁰⁵ The main policy and strategic challenge in Ethiopia regarding many environmental and natural resource issues is the lack of a national land use policy and strategy that could also guide policies and action plans by regional states.
- xcii. To address the extensive land degradation problem across the highlands, the government developed the Ethiopia Strategic Investment Framework for SLM in the late 2000s, with support from the TerrAfrica partnership, a GEF and World Bank–supported sub-regional initiative for SLM in Africa. This investment framework reflected the government’s programmatic approach to scaling up SLM and was supported by the international donor community, including Canada, the German Agency for International Cooperation, and the World Food Programme.¹⁰⁶ Efforts to address land degradation in Ethiopia were not new at the outset of the Ethiopia Strategic Investment Framework. But many efforts to address land degradation in Ethiopia focused largely on agricultural productivity and poverty reduction, with little attention to ecological aspects. They tended to be small, fragmented and uncoordinated, leading to only localized impacts.¹⁰⁷
- xciii. The multi-phase and multi-partner GEF SLM program led by the World Bank was fully aligned with the Government’s SLM Strategic Investment Framework. The Program’s support for land tenure security implemented the Government’s Rural Land Administration and Use Proclamation of 2005 which confirmed the ownership for rural land by the state, with indefinite tenure rights to land users, rights of inter-generational transfer and some rights for land exchange and leasing. The UNDP ILM project followed key national priorities on climate resilience, poverty reduction, sustainable growth pathways and disaster risk reduction as outlined in the Government’s policies and strategies.
- xciv. Mechanisms to align environmentally oriented programs and different stakeholders across sectors exist, but they are mostly ad-hoc. They mainly work through national steering committees for specific projects and programs that engage stakeholders from concerned Ministries and other entities. Such steering committees also exist in the SLMP and the ILM. There is weak engagement from non-Government owned businesses and private sector which face many restrictions and obstacles in Ethiopia, such as access to finance and strong Government preferences for cooperative development.
- xcv. The 2021 National Drylands Strategy attests to a ‘high degree of inconsistency and incoherence across programs and sectors’ on drylands development. According to the

¹⁰⁴ See Bibliography for references

¹⁰⁵ Ministry of Agriculture and PENHA, 2022. Ethiopian National Drylands Restoration Strategy.

¹⁰⁶ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

¹⁰⁷ PIF for GEF ID 2794.

Strategy key issues include poorly managed rangelands and poorly developed irrigation and flood management systems, over-exploited key natural resources and natural resource encroachments, and underdeveloped infrastructure to implement cross-sectoral plans at landscape level. Coherence and coordination has further been weakened through frequent restructuring and reassignments of Ministries and Agencies in charge of environmental protection, natural resources and climate change, especially over the past 5 years. The Ministry of Environment, Forest and Climate Change was first downgraded to a Commission in 2019, and then split into two different organizations in 2021: the Environmental Protection Agency and the Ethiopian Forest Development (EFD) under the Ministry of Agriculture. Climate change is now under the responsibility of the National Economic Commission in the Ministry of Finance. *Woreda* Administrators and technical commissioners have also changed several times.¹⁰⁸

2.2.2 GEF contributions to policy development, coherence, and synergies

- xcvi. There was an explicit and ambitious commitment in SLMP II (GEF ID 5520) to analyze existing legal and policy frameworks for sustainable land and water management, rural land administration, land certification, and land use planning. The program also aimed at identifying gaps in the legal and policy framework, suggesting proposals for regulatory and policy reform, and for developing frameworks for benefit sharing and dispute resolution relevant to SLMP objectives at the local level.¹⁰⁹ GEF funding and focal area strategies were fully mainstreamed into SLMP program implementation, as the Global Environmental Objectives and the Project Development Objective of the program were identical. Incremental GEF resources would specifically support the GoE in developing policy frameworks for promoting, *inter alia*, payments for ecosystem services (PES), gender sensitive land certification, and certification schemes that generate biodiversity benefits.¹¹⁰ As early as in SLMP I GEF finance focused on a holistic and integrated approach as the problem of land degradation was multi-faceted and multi-disciplinary.¹¹¹

At completion, the SLMP II had generated 16 strategic, technical and operational knowledge products that contributed more to policy implementation than formulation.¹¹² For instance, the third phase of the SLMP (now called Resilient Landscapes and Livelihoods Program, RLLP) indeed started results-based payments in selected watersheds. There were also positive institutional effects in policy implementation through better land certification and SLM capacity development for public officials at all levels, especially in the districts. This included the development of a sustainability framework and management information system (MIS) for results-based tracking of watershed management in cooperation with the German Cooperation and the Ministry of Agriculture and the establishment of a web-based MIS on Water and Land

¹⁰⁸ Evaluation interviews and field visits; German Environment Agency, 2023. Potentials for “results-based payments” in the forest sector under the Paris Agreement, Final report.

¹⁰⁹ World Bank. 2019. Sustainable Land Management Project. Implementation Completion and Results Report (ICRR). June 19, 2019. Environment and Natural Resources Global Practice, Africa Region. Washington D.C.

¹¹⁰ Project Appraisal Document for GEF ID 5220.

¹¹¹ World Bank, 2008. Sustainable Land Management Project, Project Document.

¹¹² World Bank. 2019

Resources that integrates spatial and non-spatial data of water and land resources in Ethiopia for watershed management, especially from the highlands, with a transboundary view on the entire Eastern Nile basin.

- xcvii. For the UNDP ILM project (GEF ID 9135) there was no evidence of cross-sectoral environmental policy influence at national level. But the project successfully implemented its integrated approach, including cross-sector coordination, at the district (*woreda*) level. This was mainly done through its decentralized approach (direct fund disbursements to districts) and effective *woreda* steering committees.
- xcviii. **The UNDP Coffee landscapes project (GEF ID 10243) has high policy ambitions.** The project aims to directly influence the development of a national land use planning policy and related federal and regional capacities in targeted states for land use planning and implementation. It also plans to play a critical role in policy and strategic decisions on environmentally sustainable coffee value chains through multi-level PPP stakeholder platforms.

2.2.3 Coherence with other interventions

- xcix. The SLMP program was designed and implemented as a multi-donor program, with a programmatic approach under the Government's SLM investment framework. This facilitated synergies among participating donors (including WB, UNDP, GEF, Norway, GIZ and the EU). SLMP I was at this time envisioned to anchor the investment and policy dialogue for this programmatic approach.¹¹³ The three GEF agencies involved in SLM in Ethiopia—UNDP, IFAD, and the World Bank—adopted a harmonized and coordinated approach, based on each agency's comparative advantages. The World Bank was more growth-oriented and IFAD more poverty focused in their SLM support while UNDP would aim at strengthening the institutional management capacity for SLM, especially in the drier parts of Ethiopia where there was little capacity to address land degradation.¹¹⁴
 - c. National and regional institutions were also strengthened by the project's participation in GEF-supported regional initiatives such as the Sahel and West Africa Program (SAWAP) and the TerrAfrica partnership. Specifically, as a child project of the SAWAP, SLMP II benefitted both in visibility as part of regreening the Great Green Wall Initiative and through learning and regional exchanges with 12 countries and projects participating in the SAWAP. The project also received support from the World Bank and GEF TerrAfrica partnership.¹¹⁵
 - ci. The ILM project planned for synergistic effects at national and regional levels. In the end, the ILM mostly concentrated on collaborating with relevant partners at the local level, in the 12 targeted districts that the project worked in. The ILM project also was

¹¹³ GEF Evaluation Office, 2015. Sustainable Land Management Project (SLMP) Terminal Evaluation Review Form.

¹¹⁴ World Bank, 2008. Sustainable Land Management Project, Project Document.

¹¹⁵ GEF Evaluation Office, 2015. Sustainable Land Management Project (SLMP) Terminal Evaluation Review Form. And World Bank. 2019.

one of 12 country projects in the GEF Food Security IAP which offered many opportunities for cross-regional learning and sharing of best practices.

cii.

2.3 Environmental outcomes and socioeconomic co-benefits

2.3.1 Environmental and socio-economic outcomes

- ciii. **The GEF drylands-oriented programs and projects in Ethiopia achieved significant environmental outcomes, generated many different forms of socio-economic benefits, and linked these two streams from the start of the projects.** *Environmental outcomes* consisted mainly of reduced land degradation and improved land productivity through SLM, as well as holistic watershed rehabilitation (SLMP) and various forms and scales of biological and physical land restoration (ILM and SLMP) in targeted regions and districts across Ethiopia (Annex Figures A.4 and A.5). *Socio-economic outcomes* ranged from more diversified and high-value agricultural production to better market access and alternative livelihood options. This led to income gains and improved food and nutrition security and resilience. Socio-economic benefits resulted partly from improved environmental infrastructure and practices, partly from compensatory measures to facilitate NRM adoption, and partly from complementary investments in basic socio-economic infrastructure (SLMP) and alternative livelihood activities (ILM). This will be further detailed in this chapter.
- civ. Aggregate effectiveness and outcome ratings of GEF projects were positive. Ratings for achievements in the World Bank implemented SLMP went from moderately satisfactory in the first Phase (SLMP I, GEF ID 2794) to satisfactory in Phase 2 (SLMP II, GEF ID 5220). All Project Development Objectives (PDOs) were substantially achieved in SLMP II through the additional stimulus and investments of the second phase and the lessons learnt. The SLMP project's impact in reducing land degradation and improving land productivity was high/substantial.¹¹⁶ Similarly, the Terminal Evaluation of the UNDP implemented ILM Project rated all evaluation criteria satisfactory (and highly satisfactory for relevance).
- cv. In terms of *environmental outcomes* the two SLMP projects together treated 861,000 ha of degraded landscapes in 1,820 micro-watersheds (of about 700 ha each), achieving more than 95 percent of targets. 77 percent of this was communal land and the remaining 23 percent were individual farmer plots. Agro-forestry and area closures to limit free grazing led to a 5.2 percent increase in vegetation cover. The projects also supported the issuance of landholding certificates, which benefited smallholder farmers and landless youth, who reportedly received holding rights in exchange for managing communal lands. For some more detailed achievements specifically of SLMP II see Box 1.
- cvi. Environmental results varied: More SLMP impact was achieved on communal than individual lands. Program impact was larger in drylands than in more humid areas. Land degradation was highly reduced on 32 per cent of communal lands compared with 9 per

¹¹⁶ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

cent on individual lands, and land productivity increased more strongly on communal than individual lands. Secondly, the effectiveness of interventions in reducing land degradation and improving land productivity was higher in the drier areas, where moisture stress is a critical constraint.¹¹⁷

- cvii. An independent GIS remote sensing study of SLMP I impact found that over a five-year period gross primary production grew by 13.5 percent on average in project areas affected by severe droughts and by 3.1 percent in other project areas, suggesting important drought-buffering effects.¹¹⁸ Results showed a clear difference between treated and control locations with an upward trend among treated areas during the last implementation years of SLMP I. This demonstrated the effectiveness of SLM projects in restoring land productivity and resilience to weather shock, and their magnitudes were substantial.¹¹⁹
- cviii. Substantial *socio-economic co-benefits* were achieved in targeted watersheds through SLMP program support for high-value crops such as planting of fruit trees, root and tuber crops, coffee, spices, vegetable, potatoes, and high-value cereals and pulses.¹²⁰ The projects also supported livelihood activities through livestock, poultry and beekeeping especially for youth employment and gender-inclusive programs.¹²¹ Together with improved market accessibility these activities improved both food and income diversification. Community infrastructures generated many benefits for households through improved access to water for domestic and livestock use. Improved roads provided access to markets, schools, and medical and social services. Empirical studies suggested significant improvements in the overall quality of life of beneficiaries, primarily reflected in improved housing conditions and increased attendance of children in school.¹²²
- cix. The SLM program (through SLMP I and II) resulted so far in an estimated 740,831 direct beneficiary households (including 201,987 female headed households, equivalent to 28 percent of total beneficiaries), of which 360,205 further benefited by the issuance of land certificates.

¹¹⁷ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

¹¹⁸ The study was carried out by researchers from IFPRI, Cornell University and Tokyo Soka University. Constenla-Villoslada, Susana et al. 2022. Large-scale land restoration improved drought resilience in Ethiopia's degraded watersheds. *Nature Sustainability*. Volume 5, June 2022, p. 488-497.

¹¹⁹ GIS environmental monitoring of targeted districts with baseline and endline land use and land degradation maps as well as long-term land use/degradation trends was also carried out in the ILM project as part of the RFS program's hub project support by Conservation International for better impact assessments (Figures A.5-A.7). These maps were not analyzed by the project nor mentioned in the ILM TE. But the project recruited an international consulting firm to carry out its own NDVI quarterly monitoring and used the data for reporting changes in NDVI, such as in its terminal evaluation.

¹²⁰ World Bank. 2019

¹²¹ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

¹²² World Bank. 2019

- cx. The ILM project introduced integrated landscape management practices on 132,407 ha (110 percent of target), planted 65 million tree seedlings on 18,952 ha, and reclaimed 5,914 ha of agro-pastoral lands,

Box 1 –Accomplishments of the Soil and Land Management Program II (SLMP II)

- i. **SLMP II alone brought 556,776 ha land into sustainable and climate-smart, resilient land management practices in 135 watersheds** and significantly reduced land degradation (SLMP Outcome 1). The project also avoided 5.4 million MtCO₂eq of GHG emissions, mainly resulting from expanded agroforestry. On part of this land, improved land productivity was achieved through the combined effects of SLM practices on watershed farmland (195,861 ha), improved crop and livestock management practices, the development of land use plans and the provision of land certificates (SLMP Outcome 2).
- ii. **Climate smart agriculture was introduced through five packages:** Conservation agriculture (minimum tillage with mulch, intercropping and crop rotation); agroforestry; cover crop and residue management; composting; and improved forage management.
- iii. Physical soil and water conservation (SWC) was done on 137,155 ha of farmland, of which 83,655 ha also included biological SWC measures. A total of 37,225 ha of farmland received technical and financial assistance to adopt conservation agriculture practices. 803 small-scale irrigation schemes were implemented covering a total of 4,600 ha and benefiting about 20,726 farms households. Overall moisture availability has increased, as verified by a significant number of naturally recharged springs throughout the project area. Surface water measurements of average discharge flow increased by 5.6% within one year (between 2017 and 2018).

Source: Terminal Evaluation SLMP II, 2019

- cxi. outperforming most of its environmental objectives. Much of this land also benefits from the provision of improved seeds, seedling and other agricultural technologies provided by the project. 245,000 households benefited from improved land management activities. In addition, more than 17,000 households benefited from value chain development, especially sheep fattening, promoting maize and haricot beans, fishponds, poultry and onions.¹²³

Factors and risks for performance

- cxii. Success factors for project performance included strong and local ownership and capacities, enforcement of environmental regulations and innovative solutions tailored to each site. Insufficient know-how on operationalizing and phasing of CSA and limited

¹²³ Alatoon, Mohammad, 2023. Terminal Evaluation of 'Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia' project.

funding for physical environmental and socio-economic local infrastructure reduced project results and impact.

- cxiii. Factors for high success rates in the SLMP program included strong community enforcement of land closures to prevent livestock grazing in communal lands and an adequate mix of biological and physical SLM interventions.¹²⁴ Factors that helped achieve the UNDP implemented ILM project's goals included demonstrations of innovative and sustainable solutions that were closely tailored to the context and beneficiary needs of each site; secondly, investing in technical and management capacities of beneficiaries and their groups, local administrators and extension agents; and third, combining modern innovations with traditional knowledge. The ILM project also successfully engaged seven local universities in conducting action research at Wolayita Sodo at Dugna Fango districts. Several restored areas were considered as model demonstration sites for dryland restoration due to strong engagement by communities.¹²⁵
- cxiv. The SLMP project was less successful where it paid insufficient attention to the up-front costs and appropriate phasing of climate smart agriculture (CSA) interventions. There was not enough research on supporting and phasing CSA, especially in drought-prone areas. A stepwise approach to CSA which would combine short-term compensations and facilitated productivity growth was seen by IEG as more likely to have a greater chance of sustained CSA adoption by farmers.¹²⁶ SLM in watersheds with large gullies was sometimes constrained because of the high capital and maintenance costs of erosion control. Although communities were willing to contribute labor, they lacked the capital to invest in and maintain such high-cost infrastructure.¹²⁷
- cxv. In both projects, strong ownership by local district officials and beneficiaries were most important for successful program implementation. They were ensured through appropriate decentralization of decisions and funds, participatory approaches and sensitization/capacity building.

Synergies and trade-offs between environment and socioeconomic development

- cxvi. WB SLMP: Incentives for farmers to support land restoration and adopt SLM worked mainly because the program provided up-front economic benefits, avoided negative short-term trade-offs for livestock fodder provision and sensitized and engaged local communities. Failure to create incentives through early benefit flows and to offset short-term disadvantages has been a long-standing constraint to successful land restoration and soil and water conservation in Ethiopia. The project achieved this through improved access to small-scale irrigation and water harvesting, ensuring continued livestock fodder provision in communal areas and alternative income

¹²⁴ World Bank. 2019

¹²⁵ Alatoon, Mohammad, 2023. Terminal Evaluation of 'Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia' project.

¹²⁶ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

¹²⁷ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

opportunities, such as beekeeping. In drought-prone areas, small-scale irrigation was the key enabler for translating the benefits of land restoration into reduced household vulnerability to climate shocks, especially when combined with diversified agricultural production and improved market access for farmers.¹²⁸ In communal areas that were targeted for land restoration the SLMP restricted free grazing of livestock. This limited access to such lands by community members, especially for livestock grazing. But the project has promoted fodder production on communal land as well on private land (disho grass and fodder trees). Instead of free grazing on communal lands, a *cut-and-carry-system* was adopted which positively influenced fodder availability and livestock productivity.

- cxvii. The UNDP ILM project TE regarded the project's integrated approach of combining land management with social development and income earning initiatives as the primary factor for successfully achieving the project goals.

¹²⁸ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

Box 2 – Field testimonials: Restoration and livelihood support in Dugna Fango woreda (ILM project, GEF ID 9135)

The ILM project initiated the planting of trees on a 20 m wide river side in Dimitu village to stop land degradation and landslides caused by the Bilate river. These measures reduced flooding damage downstream. The project supported two village tree nurseries with the capacity of raising up to 4 million tree seedlings, for watershed restoration, roadside planting, agroforestry and the like. They also specialize on different species of aromatic and medicinal plants. Villagers use solar powered pumps to get water from the river, including for irrigated agriculture.

The impact of restoration in the Jabiya watershed of Fango Sore kebele is very visible. The treated area restored well within five years and vegetation cover has significantly improved. The restoration was conducted on highly degraded and rocky area similar to the open adjacent area. Initially *Acacia saligna* was planted, but several indigenous tree species have regenerated, including other acacia species and native fruit trees. For the first two years, the site was completely closed from human intervention, including for cutting grass. The last three years, the local community was harvesting grass for their livestock and thatched roofs. Many bird species reappeared.

In Fango Bijo kebele (community) households that have benefited from livelihood diversification included an interviewed farmer living in a locality called Gesho. This particular farmer diversified his crop production practices and constructed a biogas structure with project support; he now uses methane gas for cooking and lighting. The slur is recycled as organic fertilizer in home garden and farmlands. He produces different horticultural crops. From papaya in his home garden, he earns a weekly income of 1000 Ethiopian Birr. He also has mango, *ensete* (or 'false banana', *E. ventricosum*, *Musacea family*, an economically important food crop *in Ethiopia*), sugar cane, Moringa, coffee, guava, maize, cassava and beans.

The ILM project also supported poultry, tailor and butter trade associations in the kebele to diversify beneficiaries' incomes. Solar associations were founded for members to save money to buy solar units for household light. Another butter trade association in Fango Offa kebele was established in 2018 by 16 women. They buy butter in their village and sell it on the nearby Dimitu village market. The project provided 15,000 birr as startup capital. Currently, they have saved around 75,000 birr. They plan to save enough money to purchase a grain mill for their village. Currently, they travel long distance to Dimitu village to get their grain ground. The grain mill will serve their members and the surrounding communities, while generating income for the members.



Source: GEF IEO Field mission Ethiopia, April 2023

2.3.2 Sustainability

- cxviii. **Results of the SLMP program have been largely sustained, about four years after major project works were completed.** A visit by the SCCE drylands country evaluation team to one of the SLMP districts found that communal as well as farmlands treated with SLM practices were well maintained.¹²⁹ At the time of the visit, all areas restored by the SLMP were under improved SLM practices and there was strong interest from beneficiary community members in maintaining the program benefits. Physical SWC structures in the visited watershed were all in good conditions. Steep-slope land that was reclaimed through bench terraces and gully stabilization are now used for production of crops as well as forest trees. Farmers produce cereals for home consumption and crops for marketing, such as potatoes, rosemary, and apples (Box 3). The *cut-and-carry* practice for livestock fodder has been further strengthened, well adopted and is now widely practiced. Water availability has greatly improved and the springs developed in the watershed are benefiting even the *woreda* capital, Lera, which is outside of the watershed. The visit was conducted during the rainy season. But there was no incidence of soil erosion and degradation. Water flows in the streams had a low silt/soil sediment load, even during the high rainfall season, compared to neighboring non-treated watersheds seen during the visit.
- cxix. Improved SLM practices and other gains are further sustained through the establishment of local farmer institutions in the SLMP, especially water user associations which were recently turned into more formal watershed user cooperatives. This new form of cooperatives was made possible by a federal watershed proclamation passed in 2020 with support from the SLMP program.¹³⁰ Associations and cooperatives help with maintaining infrastructure and protecting and managing economic activities on communal lands (crops and fodder production). The Collaboration, learning and adapting (CLA) approach introduced by the SLMP is now widely practiced by rural extension, including for home gardening and on-farm agroforestry, conservation agriculture, cover crops, composting, and improved forage management.
- cxx. **Incomes of beneficiary households have increased and outmigration to other areas has decreased.** Beneficiary farmers encountered during the field visit witnessed that project supported IGAs, like apple production, has increased their income significantly, and helped to adopt modern lifestyles: solar energy, satellite TVs and modern houses with corrugated iron sheet roof covers. Better and more sustainable fodder production has improved livestock production and incomes.
- cxxi. The likelihood of sustained progress of SLMP II outcomes in future was rated by the GEF SCCE country evaluation team as highly likely. Risks to development outcomes were considered as moderate given the economic incentives for smallholder farmers for

¹²⁹ Sources for this section: Observations and discussions with beneficiary farmers and cooperative leaders. Terminal Evaluation SLMP 2 2019. Interview with (former) SLMP 3 National Coordinator, SLMP Woreda Focal Person and Woreda watershed expert.

¹³⁰ The Federal Watershed Proclamation 1223/2020.

continued maintenance of the SLM infrastructure, improved institutional structures, especially watershed cooperatives and higher security of land tenure. The multi-sectoral coordination platforms at *woreda* and *kebele* levels are still operational and support the landscape approach.

Among the main remaining risks for likely sustainability at district level are the frequent staff turnover and inadequate working conditions in many districts (*woredas*). Secondly, unless there is project funding local level technical advisors and experts are less able to perform their functions properly. Access roads and bridges over streams are still missing in many parts of the watershed. Third, there is limited private sector activity in most *woredas* that could provide continued services to farmers (inputs, repairs etc.). And fourth, security is a problem in several sites, since there have been armed conflicts and other forms of local insurgencies across several parts of Ethiopia, especially the North.

Box 3 – Field testimonials: Long-term environmental and socio-economic benefits in Mirab Azernet Berbere *woreda* (SLMP, GEF ID 5220)

The Mirab Azernet Berbere *woreda* is a highland area dominated by steep slopes, with temperate, semi-arid climate. Large areas were heavily degraded and no longer productive before the interventions. The SLMP was implemented in 10 watersheds. The program restored 6,780 ha in the *woreda* (district) mainly through terraces and gully stabilization which is now used for producing food, market crops and fodder. Farmers feel incentivized to adopt improved agricultural practices on the reclaimed and highly productive land, including improved seeds, organic and chemical fertilizer. Soil fertility improved.

The program encouraged the production of new vegetables, herbs and fruits and linked farmers and their cooperatives with interested buyers from Addis Ababa who also provide advice on product quality management. Fruit production is popular, such as of apples that are new to the area. An apple tree nursery was established. Mirab Azernet Berbere *woreda* has become the major apple producing area in Ethiopia and its apple nursery employs several youth and women from the nearby villages. Rosemary is another crop which grows well on the slopes and offers high revenues. Several interviewed farmers witnessed the changes brought by the project. They grow apple trees, papaya and well managed *ensete* in their fields. Backyard ponds support farmers' resilience in the case of dry spells.

Above all, farmers understood that degraded lands can be treated and converted into productive lands and they gained the necessary skills to manage the newly restored lands. Better-off cooperative farmers who benefited from the program started supporting poorer community members through hired labor and other services. Restored landscapes have become a tourist attraction in the area, generating further momentum. The security and stability of *woreda* leadership and the expertise from technical extension staff were key to success in Mirab Azernet Berbere.



- cxxii.** **The two main elements for successful sustainability of SLMP investments and practices and likelihood of sustained progress were that all activities were** fully mainstreamed into the public sector and improved the awareness, know-how and capacities of local communities in managing the sustainable use of natural resources. In addition, the program was innovative and successful in taking a multi-sectoral landscape approach which generated substantial sustainable benefits and livelihoods in targeted communities. The SLMP approach was balanced and combined highly decentralized support of public and private goods in support of agriculture and alternative livelihoods with small-scale infrastructure (irrigation, access roads etc.), and knowledge related public instruments.
- cxxiii. SLMP program investments and practices are currently being scaled up to all remaining watersheds in the *woreda*, through a follow-up program to the SLMP funded by the World Bank, Norway and other donors, the Resilient Landscapes and Livelihoods Program (RLLP 1 and RLLP 2) which also works on connecting different treated watersheds through green corridors.¹³¹ The GEF is not engaged in this program due to other country priorities that emerged.
- cxxiv.

2.4 Natural resource governance

2.4.1 Natural resource governance in design

There was high attention to natural resource governance in the SLMP program and the ILM project from the beginning. Design emphasized interactions among relevant stakeholders across several levels of governance (federal, district and beneficiary groups), and the need for active participation of intended beneficiaries in design and implementation, going beyond consultation to facilitate ownership and decision-making.¹³² The establishment of local user groups and other local institutions for utilization, operations and management of private and communal land and water use was an explicitly goal of the SLMP.¹³³ Social organizational beneficiary structures and local governance systems were also explicitly targeted for support in the ILM which had a whole component of institutional strengthening.¹³⁴

2.4.2 Natural resource governance in implementation

The SLMP successfully built technical and management capacities, first through local water associations in SLMP I¹³⁵ and more recently through watershed management cooperatives¹³⁶.

¹³¹ Another WB funded project, the Climate Actions through Landscape Management (CALM) project also carries forward the SLMP watershed approach to other areas of Ethiopia, with emphasis on the mobilization of rural labor in public works programs.

¹³² World Bank, 2008. Sustainable Land Management Project, Project Document.

¹³³ World Bank, 2013. Sustainable Land Management Project II (SLMP-2), Project Appraisal Document.

¹³⁴ PAD 9135.

¹³⁵ World Bank. 2019

¹³⁶ GEF SCCE interviews and field visits.

Over 3000 watershed cooperatives were established by the SLMP across the country. The program improved participatory decision-making processes, remunerated involvement of community members in establishing most biophysical measures (afforestation, terraces, bunds, water harvesting, etc.), enhanced security of land tenure via land certification initiatives (see below), and provided much needed alternative livelihood opportunities for many rural poor living in degraded lands.¹³⁷ User groups and cooperatives established by-laws and norms to govern and manage natural resources on communal land, with sanctions for violations of norms. They created clear procedures and grievance redress mechanisms for conflict resolution on natural resources. Any grievance at village level is brought to elders in the village. If they cannot resolve the issue, it is brought to the *kebele* or *woreda* committee, and ultimately to the courts if all other mechanisms fail.

In addition, the SLMP relied on strong support for local government and mainstreaming of the program in the regular rural development and extension system. The program undertook a comprehensive training program in SLMP watersheds that substantially improved technical knowledge and raised awareness on the importance and benefits of SLM, both within public institutions at the regional and district level, as well as in beneficiary communities and farmer organizations.¹³⁸

Natural resource governance especially benefited from synergies across sectors at *woreda* level. The SLMP program was overseen by the *woreda* steering committee chaired by the Chief Administrator. The multi-sectoral steering platform was considered an innovative feature for the integrated landscape approach that allowed the GoE to effectively coordinate land use, land management, and land administration, and to avoid duplications and maximize synergies. All district officials in charge of land use, economic development and the environment were members: from agriculture, forest, environment, water, energy, roads, and land administration. Implementation was owned by sector offices like agriculture, water and energy. At the next lower level, the *kebele* (local community) watershed teams and community watershed or water user groups were key players.¹³⁹

Long-term engagement was critical in the SLMP as noted by the World Bank's independent evaluation of the SLMP.¹⁴⁰ The experience from SLMP I and II showed the need to allow enough time for participation and community engagement spanning beyond the duration of a single project, to heal degraded landscapes and restore ecological functions. At the same time, potential short-term trade-offs were healed through building institutional capacity for local governance of SLM infrastructure and practices, developing local norms for NRM, and improving farmers' market access and increase revenues on investments in land. The IEG evaluation also noted that local watershed management institutions could further be strengthened in future by identifying sources of revenue for them, such as through carbon market-linked payments for ecosystem services.

cxxv. **For the ILM project stakeholder participation and partnership arrangements in the districts were key to natural governance success.** Similarly to the SLMP the ILM project

¹³⁷ World Bank. 2019

¹³⁸ World Bank. 2019

¹³⁹ GEF IEO Field mission Ethiopia, July 2023

¹⁴⁰ Independent Evaluation Group, World Bank Group, 2020. Project Performance Assessment Report, Ethiopia, Sustainable Land Management Project I and II.

focused on district level governance, financial decentralization and motivation of local officials and strong participation by local farmers and groups. The ILM carried out a broad framework for stakeholder analysis at design. The strategy of the project was to use existing organizations and systems as an entry point for natural resource sensitization and management, including cooperatives and community-based organisations (CBO), for farmlands and adjacent forests. Governance structures included representatives of farmers, local land committees, women and youth associations, research institutions, and locally operating NGOs. Among others, the project worked with six Ethiopian universities and one agriculture research centre as part of the teams. For instance, the Wolaita-Sodo University conducted action research on alternative technology adoption for reducing land degradation and enhancing biodiversity in Dguna Fango *woreda* that the GEF team visited.

The ILM project increased the technical capacity in conservation work and built skills for SLM at all levels, among communities and local experts. At completion, the ILM project was well institutionalized in the targeted *woredas* where communities were in charge of tree nurseries and managing natural resource access.¹⁴¹ Extension staff carried forward the new SLM messages and helped farmers resolve recurrent problems. The project successfully expanded setting of norms and sanctions agreed by communities and officially enforced by villages (*kebele*), such as on livestock grazing in restored areas.¹⁴² While largely successful, several participatory governance processes were in fact constrained for nearly two years by extension displacement restrictions and gathering caps under COVID19 for in-person or hybrid assemblies. The digital divide and intermittent internet and telephone access also hampered online approaches during this time.

2.4.3 Land rights and tenure security

SLMP I and SLMP II focused strongly on expanding rural land registration and strengthening land administration more in general. The program significantly improved knowledge and capacities for rural land registration and land administration at all levels, particularly through training and knowledge exchange visits for experts and decision makers. Specifically, the project supported the adoption of a cost-effective approach and methodology for second level certification. Reaching a consensus on methodology in line with international best practice was a major achievement towards a sound land administration system, which has been shown to be a key for higher adoption of SLM practices at the farm level.¹⁴³

In SLMP I 60,000 households received land certificates, and the sense of ownership of soil and water conservation measures on farmland increased substantially.¹⁴⁴ Tenure security played a large role in stimulating greater investment by farmers in sustainable land management practices, on individual and communal lands, especially such lands that were restored and

¹⁴¹ Alatoon, Mohammad, 2023. Terminal Evaluation of 'Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia' project.

¹⁴² Alatoon, Mohammad, 2023. Terminal Evaluation of 'Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia' project.

¹⁴³ GEF Evaluation Office, 2015. Sustainable Land Management Project (SLMP) Terminal Evaluation Review Form, p. 13.

¹⁴⁴ GEF Evaluation Office, 2015. Sustainable Land Management Project (SLMP) Terminal Evaluation Review Form.

where land tenure was initially not clear.¹⁴⁵ By completion of SLMP II farmers reported satisfaction with increased transparency of land adjudication procedures and participatory approaches used. The number of court land disputes decreased substantially.¹⁴⁶ Security of land tenure increased. Complementary to improved land security the SLMP promoted the development of land use plans, including communal land use plans for each micro-watershed that delineated and demarcated areas for forage production, afforestation and reforestation areas.¹⁴⁷ This led to better management of communal lands, especially for animal grazing, including through the provision of titles for youth for parts of these lands.

Gender, resilience and private sector

2.5.1 Gender

- cxxvi. Attention to gender and women equality increased over time in drylands oriented GEF projects in Ethiopia, and many women directly benefited from these projects. In addition, project awareness training and gender support helped to gradually reduce the deeply entrenched discrimination against women in many locations, which is expected to take some time. Two projects in Ethiopia, the UNDP ILM (GEF ID 9135), designed in 2017, and the UNDP Coffee landscapes project (GEF ID 10254) provided a clear gender analysis and action plan with operational details. The SLMP II (GEF ID 5220) carried out a gender analysis in the context of its social assessment and provided gender mainstreaming guidelines. The SLMP II plan was well aligned with the national gender plan. Three of four projects had gender sensitive indicators and disaggregated data by sex gender, the SLMP II, the ILM and the Coffee landscapes project but they were missing for the SLMP I (GEF ID 2794).
- cxxvii. In SLMP II women's participation and equitable benefit sharing was prioritized. Women represented between 18 and 32 percent in different technical project watershed committees. Water availability was higher due to recharged springs, new wells and ponds built during the program. In terms of benefits, women especially benefited from less time and energy spent on firewood and water collection. Women participants were at least half of all trainings, decision making meetings and leadership roles. Women also represented 18 percent of members of *woreda* technical committees, 26 percent of members of *kebele* watershed teams, and 33 percent of members of community watershed teams.¹⁴⁸ The SCCE drylands team confirmed during its field visit that women's access to productive resources improved and women were fully responsible for higher production in home gardens. They also increasingly shared the work and benefits from restored farmlands. Women were major beneficiaries of some IGAs: women produced 100 per cent of poultry and vegetables and up to 70-80 per cent of apples.
- cxxviii. In the ILM project the most successful agricultural income generation activities were accomplished by women, fostering food security and resilience, 69 per cent of project

¹⁴⁵ World Bank. 2019

¹⁴⁶ World Bank. 2019

¹⁴⁷ World Bank. 2019

¹⁴⁸ World Bank. 2019

beneficiaries were women. Gender teams were set up at community level that contributed to closing gender gaps in access to and control over resources. The project used applied gender analysis tools to monitor changes of gender roles and women's visibility. The project conducted community conversations to raise awareness, and established livelihood groups or associations dominated by women, as well as women only groups. There was also a strong gender team at *woreda* and *kebele* level. Women participation has increased in group leadership, as well as memberships. The SCCE drylands field team found examples of functional women only groups and of women who led mixed groups. At least 50 per cent of the beneficiaries are women in mixed groups.¹⁴⁹ But the ILM project did not achieve all its targets for reaching women. The ILM terminal evaluation found that gender inequality and discrimination were still deeply entrenched in many rural locations and that a single project alone could not be expected to change this reality, although commendable attempts were made.

- cxxix. The Coffee landscapes project plans for female land use experts to receive priority in capacity training, with women's leadership courses offered to enhance their skills. Women farmers would be compensated for temporary losses of incomes due to coffee pruning and rejuvenation.

2.5.2 Resilience

- cxxx. The Ethiopian GEF drylands projects defined resilience as either food systems resilience (ILM project) or as resilience to climate variability and land degradation (SLMP). They concentrated on enhanced local institutional and farmer capacities and water infrastructure and management to generate resilience. For the ILM project, complex resilience analysis (RAPTA) was not sufficiently operational. The ILM project (GEF ID 9135) refers in its full title to ecosystem resilience¹⁵⁰ but eventually defined resilience more broadly as 'resilience of food systems'.¹⁵¹ To restore and enhance resilient food systems at the project locations the ILM mainly followed a path of enhancing the necessary institutional conditions and approaches for food system resilience at local level. It did so mainly through extensive training and institution building of farmer and women's groups, local authorities and technical experts to deal with the most critical factors affecting resilience. These were identified early on as land degradation, water loss and deforestation on the environmental side and alternative livelihoods, markets and income earning opportunities on the socio-economic side. Training was combined with concrete project activities such as land restoration, integrated NRM practices and SLM and alternative income generating activities as earlier presented in Chapter 2.3.

As part of the Food Security IAP, the ILM project was designed using the GEF Resilience, Adaptation Pathways and Transformation Assessment (RAPTA) approach. **The ILM TE found that the RAPTA approach was not sufficiently practical nor applicable for the case of Ethiopia in identifying manageable integral solutions to food security issues or natural resource pressures.**

¹⁴⁹ GEF IEO field visit for GEF ID 9135.

¹⁵⁰ Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience.

¹⁵¹ Alatoon, Mohammad, 2023. Terminal Evaluation of 'Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia' project.

RAPTA aimed to secure the conceptual basis for design and to some degree the operative aspects derived from design. ILM design along RAPTA guidelines used stakeholder engagement, Theory of Change and systems description and assessments to frame the project's impact pathways for resilience, to better define resilience and its key determinants for the project locations and identify ways for the project to influence such determinants and monitor them. But the RAPTA analysis led to an overly complex and partly illogical design which was out of line with available resources. It also did not provide a robust menu of sufficiently specific indicators to monitor and capture progress and impact. The project Logical Framework was subsequently changed at mid-term to make it operational.

The SLMP (GEF ID 2894 and 5220) used the Program's Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF) and Social Assessments (SA) to assess the scope and severity of potential environmental risks and social threats for resilience and to identify appropriate preventive and mitigation measures to remedy any potential risks and threats. In its operations the SLMP aimed at better resilience by addressing the underlying causes for vulnerability to climate variability and land degradation and through generating and generate more awareness and adaptive capacities among beneficiaries. It did so mainly by reducing beneficiaries' high dependence on rainfed agriculture through expanding their irrigation and water harvesting opportunities and options and by promoting climate smart agricultural practices. Small-scale community-based infrastructure such as water harvesting systems (i.e. farm ponds, storage tanks, roadside flood harvesting, etc.) and improved water infiltration into the soils that allowed for the gradual recharge of springs and underground water storage led to more resilience against climate hazards and water-related disasters.¹⁵²

The Coffee landscapes project (GEF ID 10254) is designed to increase the resilience of coffee production against the impacts of climate change, through the rejuvenation of coffee trees, and the promotion of indigenous cover tree species within coffee farms.

2.5.3 Private sector

- cxxxi. There was no planned or actual project support to engage the private sector in the analyzed GEF drylands projects, except in SLMP II and the coming Coffee landscapes project. A promising SLMP PPP was canceled due to the military conflict in Northern Ethiopia. Traditionally, private sector operating conditions and regulatory frameworks have been weak in rural Ethiopia and the Government preferred to work with cooperatives and parastatal enterprises. This only changed with recent Governments.
- cxxxii. Although it was not part of project design the SLMP II started an innovative 200 million Birr (USD 4 million) sub-project involving Raya Brewery, a private enterprise in Tigray, Northern Ethiopia, that aimed at practicing social responsibility. This was continued under the RLLP, the successor program for SLMP II. The decision to partner originated in common interests of assuring water availability for the brewing process in one of the project's watersheds (Upper Burka-Abagabir). In this way the project was supposed to mobilize private sector financing to support environmental services in the watershed. Unfortunately all negotiations and concrete project support stopped with the start of

¹⁵² World Bank. 2019

military hostilities in Northern Ethiopia in 2021. Secondly, as earlier reported, the SLP II also linked many farmers in restored landscapes with private sector value chain buyers as far away as Addis Ababa to valorize improved market crop production opportunities, especially for higher-value fruits and vegetables. And third, the SCCE drylands field mission also learnt that corporate social responsibility through payments for ecosystem services are currently being discussed and designed under the RLLP with different other industries that rely on natural resources in other parts of Ethiopia.

- cxxxiii. The most recent Coffee landscapes project aims to trigger changes in private sector business models and responses through its public PPPs and joint ventures. Private sector co-financing is expected from Illy caffè and the Ernesto Illy Foundation to support a central coffee training centre, roasting facilities and public quality testing and grading.

Summary of emerging findings and preliminary conclusions

EQ 1: To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

- cxxxiv. GEF drylands-oriented projects in Ethiopia have been highly relevant to address many of the environmental challenges of these lands, especially those of land degradation, reduced agricultural productivity and water scarcity. This included interventions on livestock as a major driver for degradation. Over time, the projects gradually moved from an SLM focus towards a holistic and integrated land restoration and landscape or watershed approach. GEF projects concentrated on drylands in the country's more populated highlands with limited coverage of the vast drylands in the lowlands that are dominated by pastoral agriculture. Projects were more focused on degraded landscapes and food insecurity than on drylands (as an organizing principle), which meant they also often targeted non-drylands areas, especially the SLMP.

EQ 2: How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

- cxxxv. GEF interventions were well aligned and coherent with Government policies and other donor interventions. They contributed to a concerted effort in implementing the Ethiopian Government's Strategic Investment Framework for SLM through a programmatic approach, including in drylands. The SLMP program was designed and implemented as a multi-donor program that facilitated synergies among donors such as the World Bank, UNDP, GEF, Norway, GIZ and the EU.
- cxxxvi. Although the Government had mechanisms to align environmentally oriented programs and different stakeholders across sectors, these are mostly ad-hoc, such as through multi-level program or project steering committees as in the SLMP and ILM. In general there is a high degree of inconsistency and incoherence across programs and sectors' on drylands development in Ethiopia at all levels unless there is specific program and project attention to facilitate such coherence.
- cxxxvii. The SLMP had an explicit commitment to analyze the existing legal and policy frameworks for sustainable land and water management and rural land administration, land certification and land use planning. The program generated 16 strategic, technical and operational policy-oriented knowledge products that influenced national strategies or legislation in one way or the other. The smaller UNDP Integrated Landscape Management (ILM) project had no discernible policy influence at national level, but significantly influenced and facilitated coherent environmental policy planning and implementation in the districts (*woredas*) and local communities through decentralized budgeting, cross-sectoral coordination, and shared implementation, similarly to the SLMP which also had a decentralized, district-focused approach.

EQ3: To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?

- cxxxviii. The GEF drylands-oriented programs and projects in Ethiopia achieved significant environmental outcomes and generated many forms of socio-economic benefits that were linked from project design and start-up. Most planned outcomes were achieved or overachieved. Project performance was particularly successful where the projects managed to build strong local ownership and capacities, where environmental regulations were enforced and locally tailored innovative solutions were identified. In the SLMP incentives for farmers to adopt SLM worked mainly because the program provided up-front economic benefits, led to more long-term profitable farming, avoided negative short-term trade-offs for livestock fodder provision and sensitized and engaged local communities.
- cxxxix. Small-scale irrigation and other water harvesting and management techniques were the key enabler in drought-prone drylands areas to reduce household vulnerability to climate shocks, such as through growing high-value fruits and vegetables throughout the year. In contrast, insufficient know-how on operationalizing and phasing of climate smart agriculture and limited availability of funding for large scale environmental and other community infrastructure reduced project results and impact. GIS based impact assessments of environmental outcomes were successfully carried out in two projects (SLM and ILM), by external researchers. But they require high technical capacities and attention to seasonal distribution of rainfalls when comparing baseline and endline results.

EQ4: Has natural resource governance been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

Both GEF programs/projects paid high attention to natural resource governance from the beginning, with governance mainly focused on improvements in districts and communities. The projects successfully built technical skills and management capacities for NRM, especially through local water associations and watershed management cooperatives. They clearly heightened the willingness, know-how and capacities of local communities in managing their natural resources more sustainably.

Active stakeholder participation and synergistic partnership arrangements across sectors in the districts were key to successful natural resource governance, especially through mainstreaming the programs in regular rural development and extension system. The SLMP focus on land use and farmer land registration led to a better land administration system in line with international best practice and encouraged farmers to invest more into SLM on their individual farms. Better and participatory district land use planning, combined with land registration, helped with lasting land restoration and protection of communal lands.

- cxl. All these governance measures contributed to further sustainability of interventions which is highly likely for the SLMP. In addition to governance the major factors for sustainability were increasing farmer and other beneficiary incomes as a result of restoration and SLM activities, especially through diversification of livelihoods and expansion of profitable high value crops and market access. A third phase of the program, the RLLP, also helped with sustainability and expanding support into other areas.

EQ5: To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

- cxli. **Gender.** Attention to gender and women equality in Ethiopia's drylands projects increased over time and more women benefited directly. Gender awareness training and proactive targets helped to empower women in women-only and even mixed groups, including as group leaders. But inequality and discrimination against women in rural Ethiopia is deep rooted and expected to improve slowly.
- cxlii. **Resilience.** Activities to improve resilience in GEF drylands projects concentrated on local institutional and farmer capacities and water infrastructure and management, to increase food systems resilience (ILM and resilience to climate variability and environmental degradation (SLMP). Complex resilience analysis carried out in one project (GEF RAPT approach) was not sufficiently practical and operational and failed to lead to better project logic or monitoring indicators in line with available project resources.
- cxliii. **Private sector.** Planned or actual support to engage the private sector was limited or canceled, as in the case of a PPP payment for ecosystem service arrangement due to military conflict in the region.

ANNEXES

ANNEX 1 – LIST OF INTERVIEWS

Table A.1 - Interviews conducted for the Ethiopia case study:

Name	Organization / Function	Interview Date
Mr. Mensur Dessie	Ministry of Planning, Director of Multilateral Environmental Negotiations Coordination and GEF Operational Focal Point	March 24, 2023
Birara Checkol	UNDP, ILM Project, National Coordinator	April 2, 2023
Ms. Wubua Mekonnen Eijigu	UNDP CO Programme Specialist: Environmental Focal Point	Feb. 16, 2023
Dereje Dea	ILM Project, Dugna Fango <i>woreda</i> , Site coordinator	April 2, 2023
Hizkeal Mamo	Dugna Fango <i>woreda</i> , Head of Environmental Protection Authority (EPA), ILM Project	April 2, 2023
Mr. Habtamu Hailu	SLMP 2, (Former) National Program Coordinator, Ministry of Agriculture, Federal Level	June 25, 2023
Mr. Berhanu Mekonnen	RLLP (SLMP third phase), M&E expert, Oromia Bureau of Agriculture	June 20, 2023
Mr. Mohammed Hayredin	SLMP 2, Project Focal Person, Mirab Azernet Berbere <i>Woreda</i> , Office of Agriculture	July 26, 2023
Mr. Mulatu Ergogo	SLMP 2, Watershed expert, Mirab Azernet Berbere <i>Woreda</i> , Office of Agriculture	July 26, 2023
Nicholas Stephen Zmijewski	World Bank, Task Team Leader, Coordinator for Environmental Safeguards and Environmental Projects	[June 19, 2023] ¹⁵³
Dr. Adugna Debel Bote	FAO coffee project, Director General Ethiopian Coffee and Tea Authority (ECTA)	June 23, 2023

Field visits

April 2, 2023: UNDP project (GEF ID 9135) – Dugna Fango *woreda*, SNNP, Great Rift Valley

Dimitu village, Bilate river ; Fango Offa *kebele* ; Fango Sore *kebele* ; Fango Bijo *kebele*

July 26 – 27, 2023: World Bank SLMP II (GEF ID 5220) – Mirab Azernet Berbere *woreda*, SNNP

Table A.2 - Geographic coordinates of visited SLMP II intervention areas

No	x-coordinate	y-coordinate	Watershed	Interventions
1	0384357	0862260	Anzach	Bench terraces on farmland

¹⁵³ The team met with Nicholas Zmijewski on SLMP in the context of a different evaluation

2	0383417	0862094	Fude	Disho grass and tree fodder crops on terraces
3	0385725	0863513	Degosa I	Terraces, crop production
4	0376505	0859415	Ciqase Ameka I	Apiculture, disho grass
5	0385458	0862967	Degosa I	Spring development
6	0377765	0860076	Ciqase	Household pond
7	0384376	0862591	Anzach	Gabion check-dam

Annex 2 – References

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Figure A.1 – Ethiopia Dryland Agricultural Ecological Zones (AEZ)

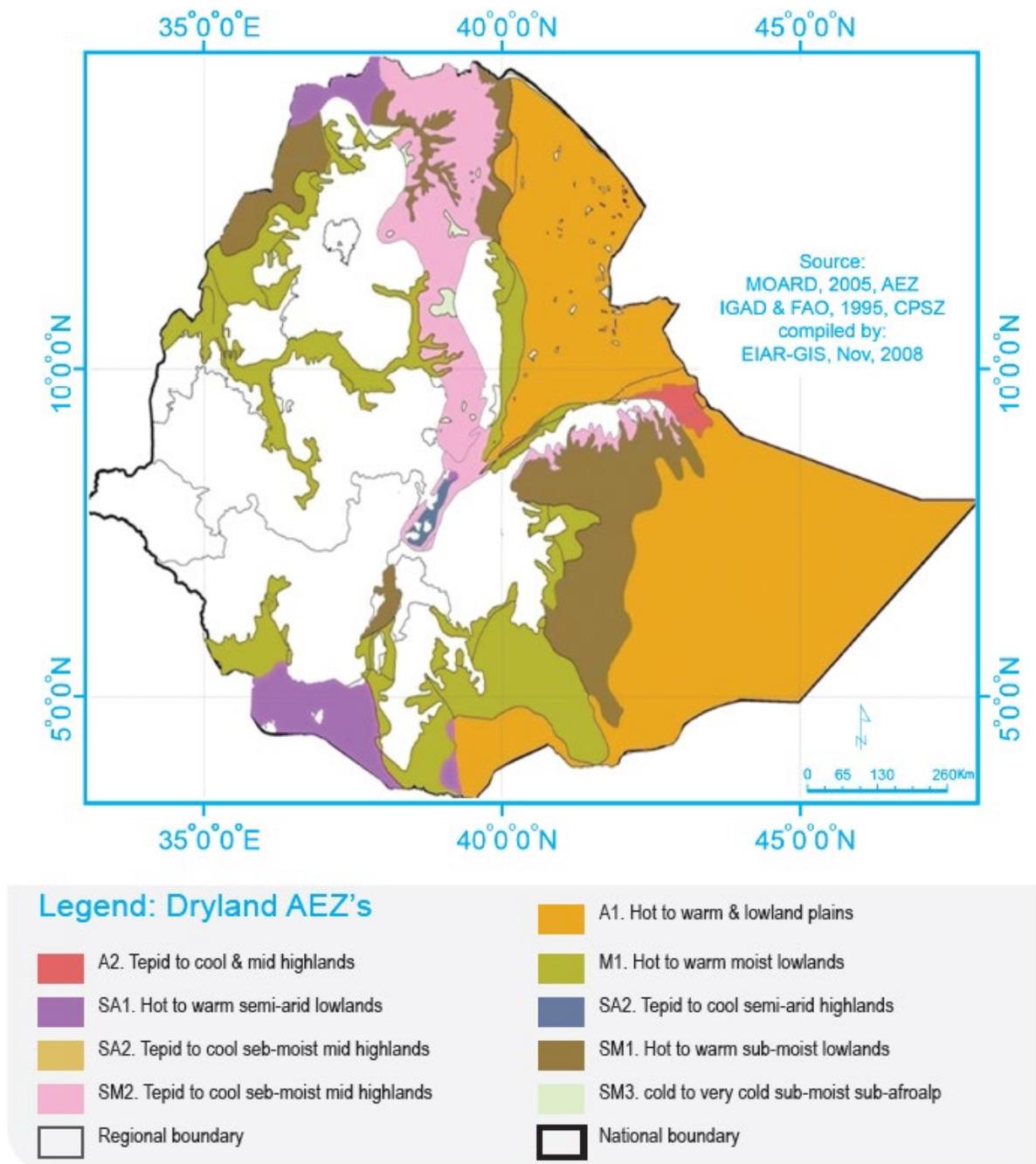


Figure 1. Dryland agroecologies - includes all coloured parts

cxliv.

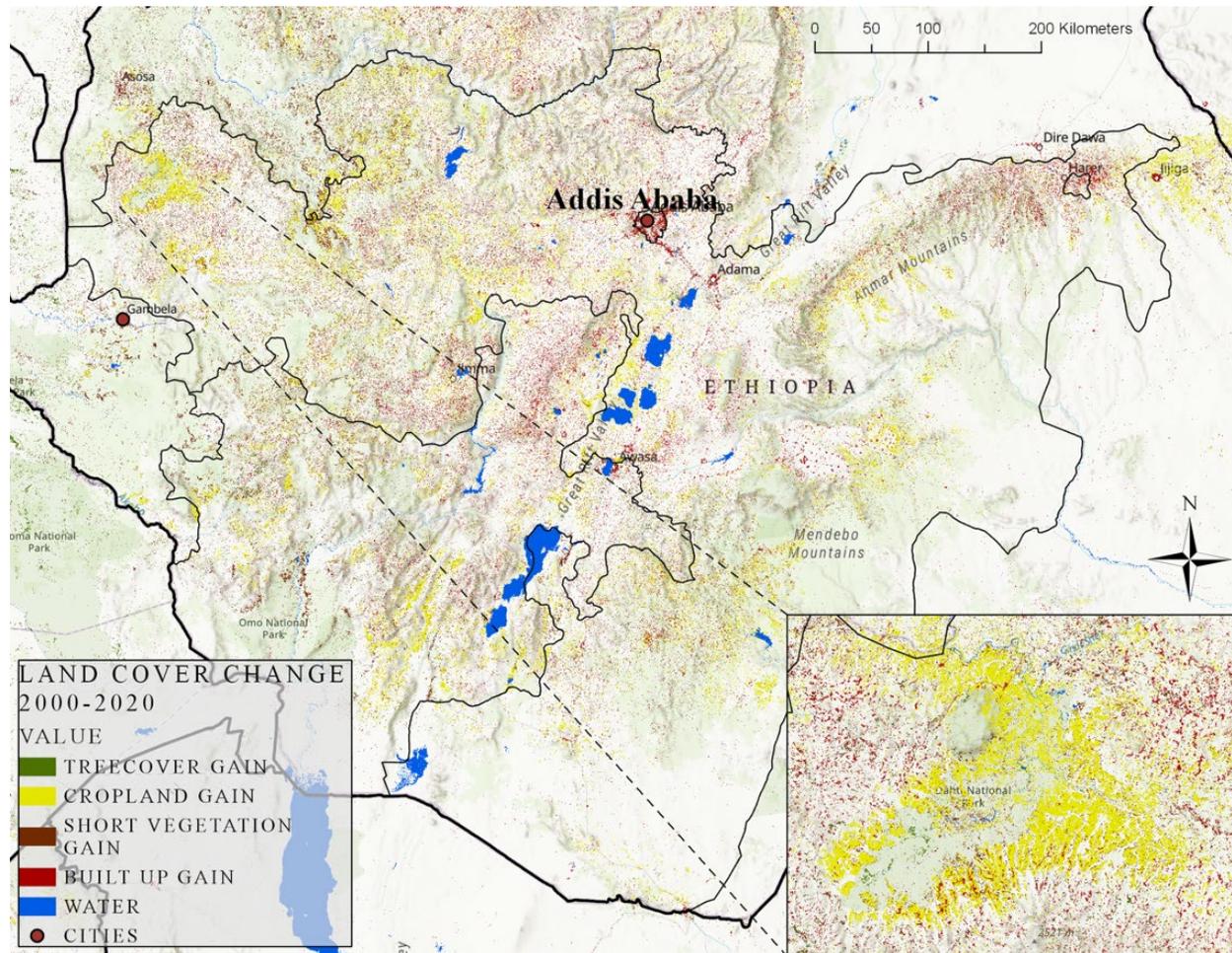
Source: UNDP 2014 report

Box A.1 – Ethiopia National Drylands Restoration Strategy (2021)

Ethiopia’s Drylands Strategy combines the four pillars of integrated NRM, land governance, livelihoods, value chains and markets, and policy alignment and sectoral coordination into a consolidated development and conservation strategy for Ethiopia’s drylands. Its scope goes beyond one sector – agriculture (land, crop, livestock, forest management) and covers other sectors, notably water and mines. The Strategy acknowledges the need to take the concept of restoration of drylands beyond managing trees, forests and woodlands, and needs to include diversified livelihoods options, value addition through

Sources: Ministry of Agriculture and PENHA, 2022. Ethiopian National Drylands Restoration Strategy.

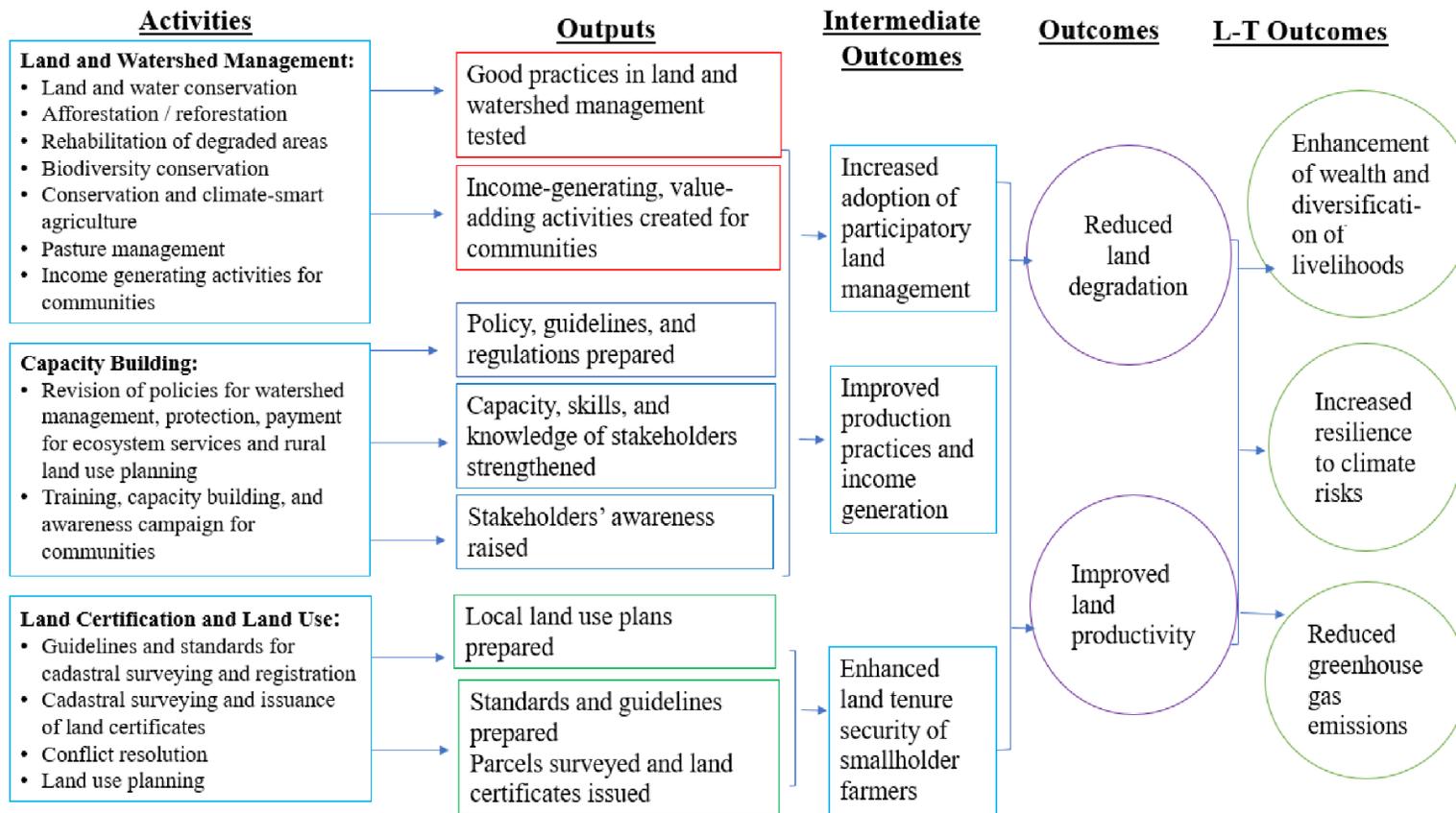
Figure A.2 – Ethiopia Oromia and SNNP Regions: Land Cover Change 2001 – 2020



cxlv. Source: GEF IEO GIS analysis 2023

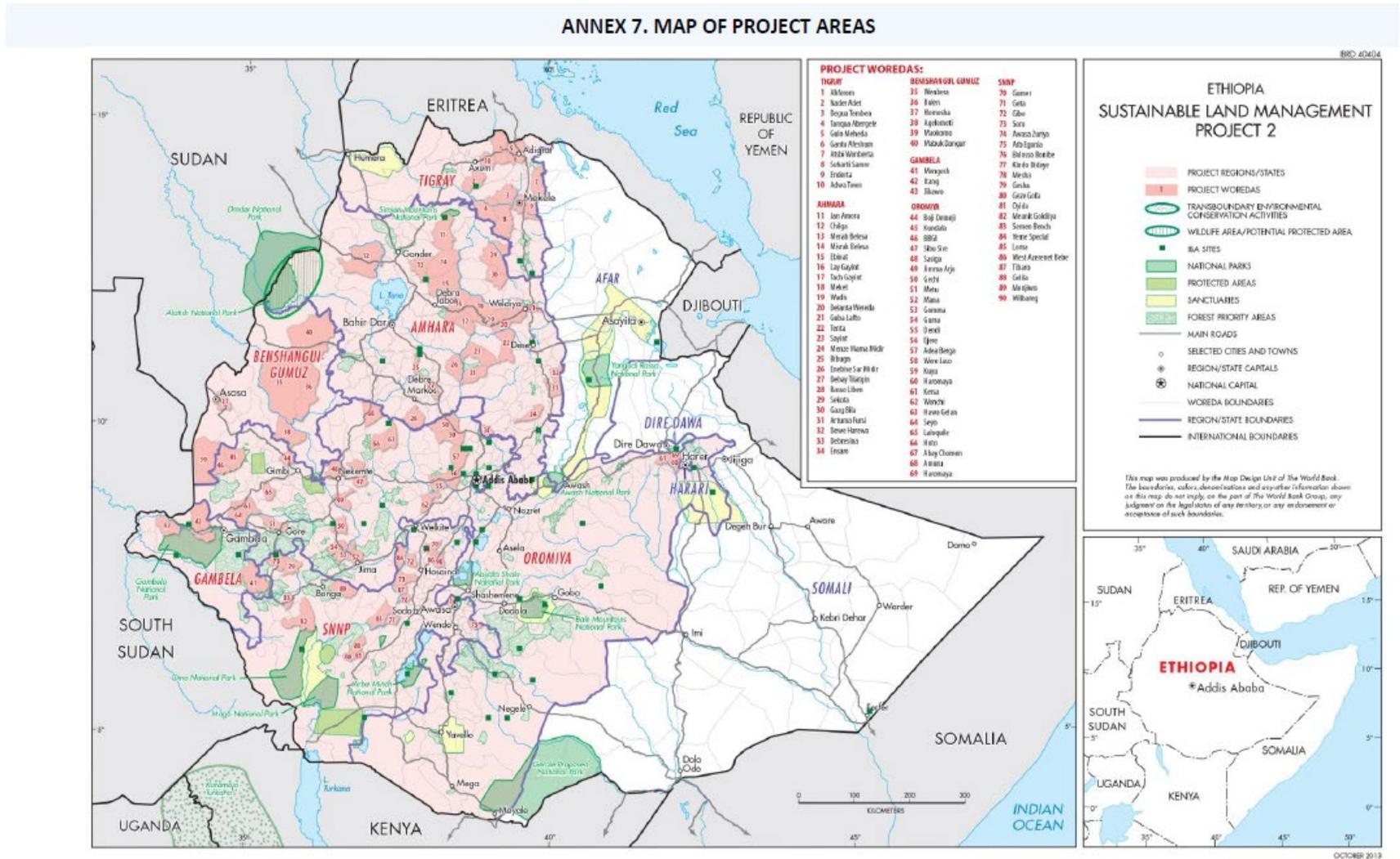
Figure A.3 – Simplified Theory of Change for the SLMP

The SLMP's theory of change was based on the idea that the transformation of cultivated agricultural land and non-cultivated communal land in watershed landscapes through SLM would address land degradation and boost land productivity. The core assumption was that integrated SLM interventions in watershed landscapes supported by land certification and institutional capacity development would provide incentives for community participation and smallholder investments that would lead to reduced land degradation and improved land productivity.



Source: World Bank 2020 (IEG report)

cxlvi. Figure A.4 – Ethiopia Dryland Agricultural Ecological Zones (AEZ)



cxlvii.

Source: WB Terminal Evaluation GEF ID 5220, page 72

cxlviii. Figure A.5 – Ethiopia Land Use map 2022 – Sites of UNDP ILM project districts (GEF ID 9135)

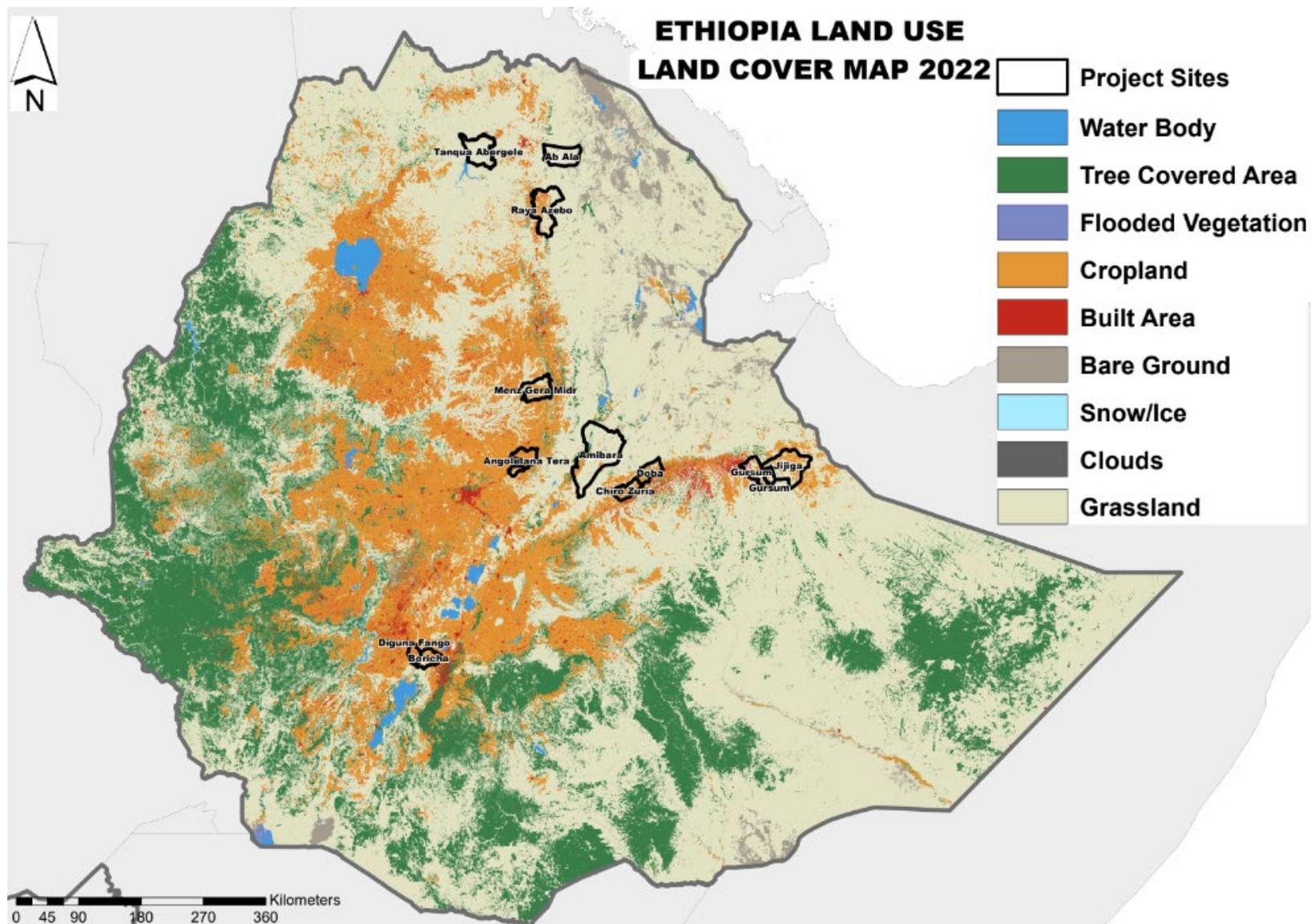


Figure A.6 – Ethiopia Degradation Map 2018-2022 – Sites of UNDP ILM project districts (GEF ID 9135)

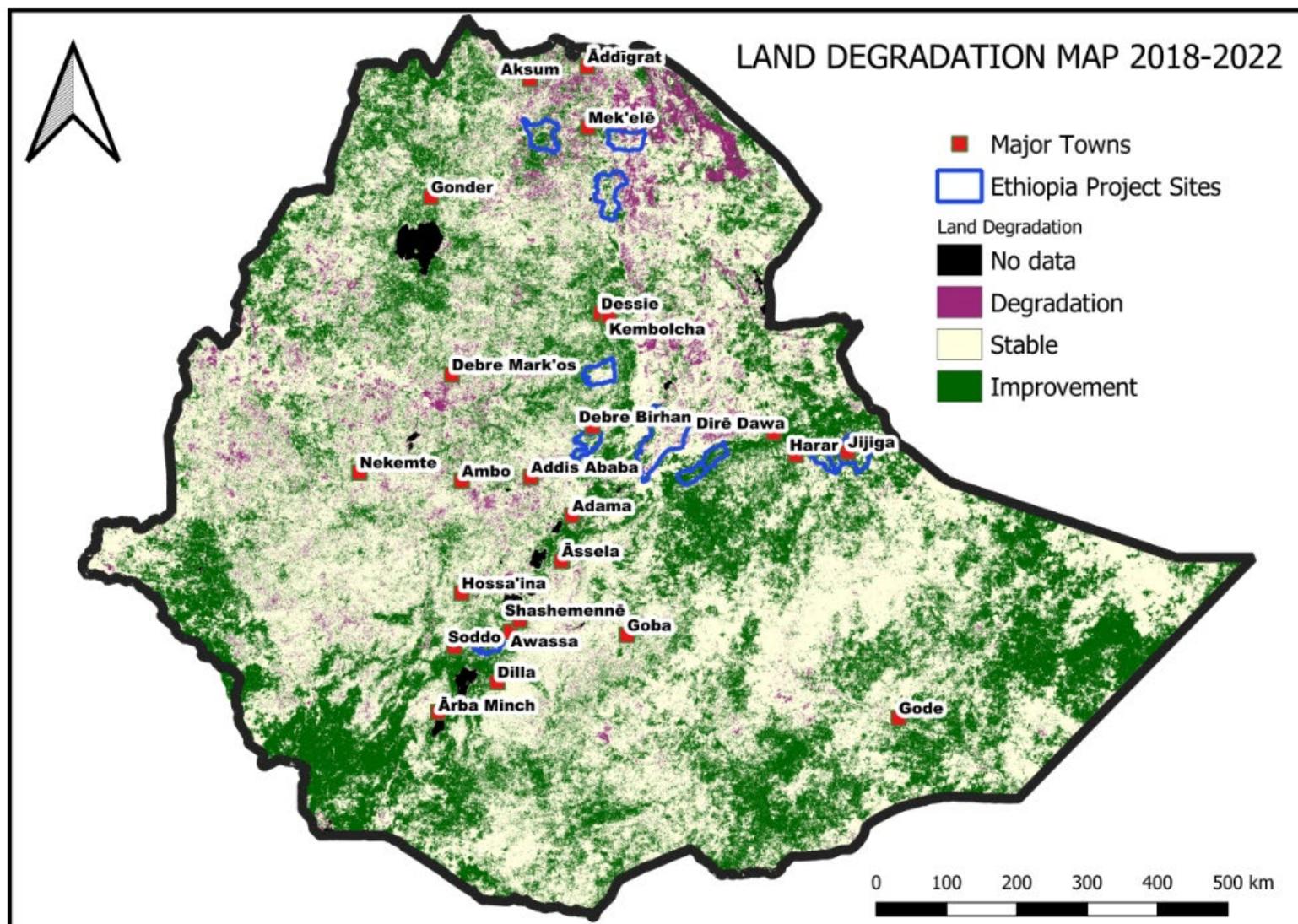
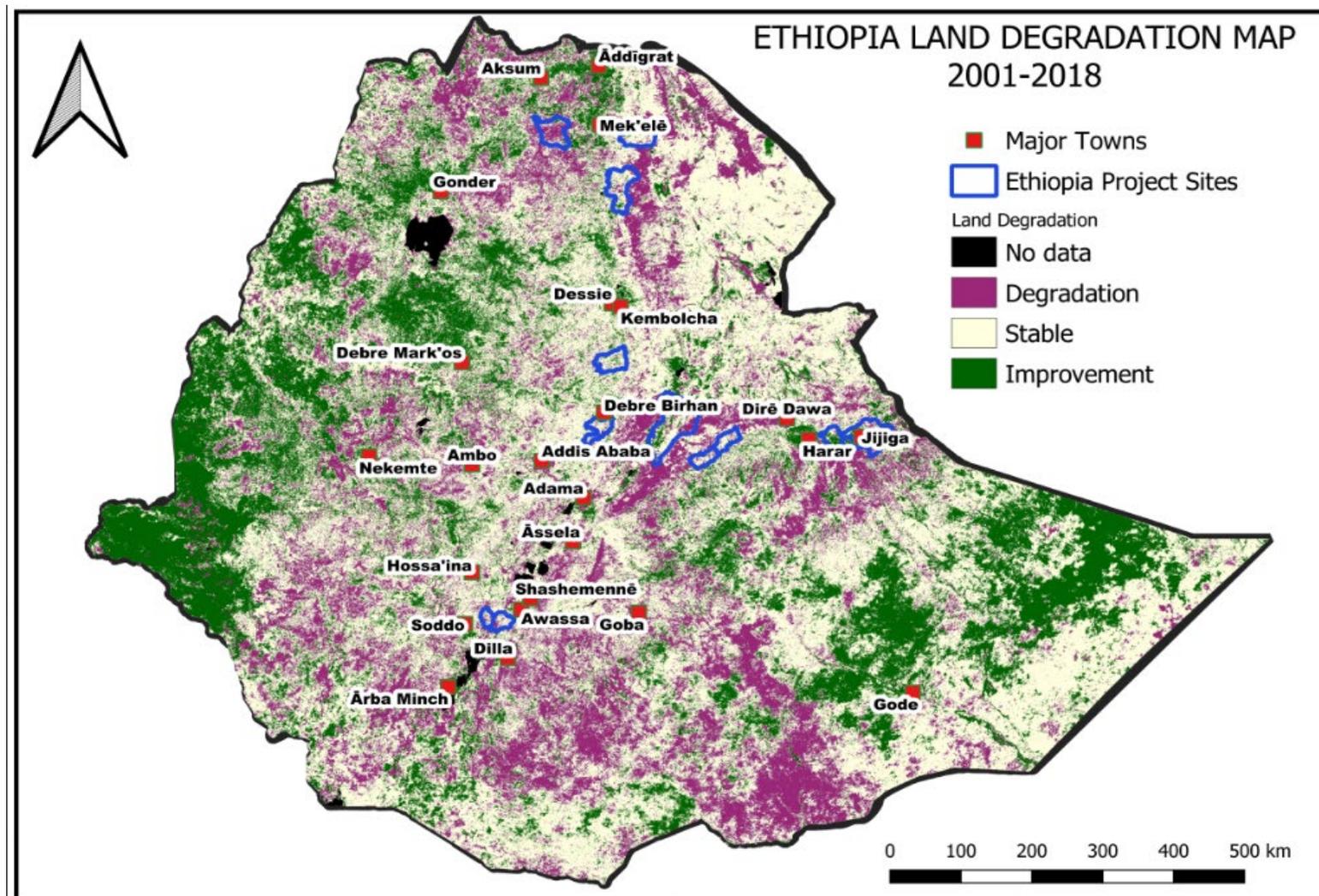


Figure A.7 – Ethiopia Land Use map 2022 – Sites of UNDP ILM project districts (GEF ID 9135)



TECHNICAL DOCUMENT 9 - MALAWI CASE STUDY REPORT



Balaka Districts: Stabilizing the paths of the Mwayi and Mkasi river through riverbank reforestation and vegetative coverage, protecting farmlands and bridges from flooding and damage (GEF ID 3376, UNDP SLM project)



Catchment area management through stone bunds, vertiva grass and swales trapping water

(GEF ID 9138, IFAD ERASP project)

Introduction, methodology and scope

- cxlix. This Malawi Case Study is part of the Strategic Country Cluster Evaluation (SCCE): Global Environment Facility (GEF) Support to Drylands Countries. Case studies are a main component of the SCCE to enable in-depth exploration of the factors driving performance and sustainability of drylands-related interventions. Case studies focus on the two overarching evaluation objectives:
- cl. assessing the relevance and coherence of GEF investments in dryland countries, and
 - cli. assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.
 - clii. Malawi was one of six case study countries chosen for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country.

1.1 Methodology

- cliii. The case study was undertaken through virtual interviews in March 2023 and field visits by the national consultant in April 2023. The study used a mixed methods approach, with desk reviews of project and country documents and interviews with representatives of the Government of Malawi, implementing agencies and project staff, and external stakeholders. Project beneficiaries were interviewed in several sites.

1.2 Scope and Limitations

- cliv. The relevant portfolio for the SCCE drylands evaluation in Malawi covers six GEF projects, three of which were closed at the time of the mission, two were ongoing and one has been CEO endorsed (Table 1). There were no relevant regional projects that covered Malawi.
- clv. Two projects had terminal evaluations, GEF ID 3375 and 3376. The **Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin (GEF ID 3376, GEF-4)** was selected for the post-completion verification based on the availability of knowledgeable interview partners and sites to visit during the field mission. This project was part of GEF SIP¹⁵⁴. The project triggered some follow-up activities in sub-sequent projects and activities by other development partners.
- clvi. The second completed GEF-4 project, the **Agriculture Sector Development Programme – Support to SLM (ADP-SLM) (GEF ID 3375)**, implemented by the World Bank) was also a GEF SIP project. Its interventions included the mainstreaming of SLM in the country’s important maize production sector, country wide, with focus on priority areas to increase yields, production stability and resilience. The project included institutional, policy and knowledge support.

¹⁵⁴ Strategic Investment Program (SIP) for SLM in Sub-Saharan Africa

- clvii. In addition, there were two ongoing projects, the IFAD implemented Enhancing the Resilience of Agro-Ecological Systems (ERASP) project, (GEF ID 9138, GEF-6 and FS-IAP pilot) and the World Bank implemented Shire Valley Transformation Program (SVTP Phase I) (GEF ID 9842, GEF-6). The ERASP project is about catchment conservation management combined with agricultural irrigation development through the IFAD baseline project. Some sites from the IFAD project were added to the field visit by the SCCE evaluation mission. The ongoing World Bank implemented project (GEF ID 9138) focuses on biodiversity and community natural resource protection in sensitive wildlife areas. This is a relatively recent priority for Malawi. The mission planned to visit this project which was, however, not possible after the March 2023 hurricane Freddy hit Southern Malawi.
- clviii. Another World Bank project with a GEF component, the **Malawi Shire River Basin Management Program (SRBMP) (GEF ID 4625)**, closed in 2019 and has a World Bank Implementation Completion and Results Report for the project as a whole. This project was not on the initial list of sampled projects for this SCCE. The project operated in the same Shire River watershed in Southern Malawi as the UNDP and most of the IFAD implemented GEF projects. The SRBMP designed a planning framework and decision support for broader hydro-development and flood protection, building awareness and capacities, and bringing in communities to improve land and water management. The GEF component was mainly about the improved ecological management of protected areas (national parks, forest reserves and adjacent wild-life corridors), which constitute a large proportion of the basin’s landscape.
- clix. The CEO endorsed FAO implemented project on **Transforming landscapes and livelihoods (GEF ID 10254)** was included in this case study’s analysis of relevance and to a lesser extent coherence.

Table 1 – Malawi GEF projects with drylands focus 2009-2023 ¹⁵⁵

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co- finance (US\$m)	Notes
3375 World Bank	SIP: Agriculture Sector Development Programme - Support to SLM (ADP-SLM)	GEF-4 2009-14	LD	Closed (TE positive)**	5.8	125.3** *	Country-wide SWAp and multi-donor trust fund; GEF goals were mainstreaming of SLM, especially in maize, climate resilience, and agricultural production stability.
3376 UNDP	SIP: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin	GEF-4 2010-15	LD	Closed (TE	2.1	1.1***	SLM focus, PPP, and green water credit

ii. ¹⁵⁵ Annex 4 provides a list of districts covered by GEF projects.

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co- finance (US\$m)	Notes
				neutral)			
9138 IFAD	Enhancing the Resilience of Agro-Ecological Systems (ERASP)* (GEF FS-IAP)	GEF-6 2017-23	LD, CCM, BD	Ongoing	7.8	87.4	Part of the FS-IAP / Resilient Food Systems program
4625 World Bank	Shire Natural Ecosystems Management Project	GEF-5 2012-19	BD, CCM, LD	Closed	5.1	31.3	GEF project is part of the broader World Bank Shire River Basin Management Program (SRBMP)
9842 World Bank	Shire Valley Transformation Program (SVTP) Phase I	GEF-6 2018-23	BD, SFM, CCM	Ongoing	6.1	39.1	Lower Shire River basin. Landscape management and biodiversity; wildlife protection; SFM. Some geo-spatial data for one year (2021)
10254 FAO	Transforming landscapes and livelihoods: Restoration of Malawi's miombo and mopane woodlands for sustainable forest and biodiversity management	GEF-7 2022-26	LD, BD, SFM (tbd)	CEO endorsed	6.9	47.7 (mostly in kind)	Global SFM Impact Program on Dryland Sustainable Landscapes (FAO); Upper Shire River basin; Forestry Department. Sustainable landscapes mngmt., green value chains; Scaling SLM and SFM best practices; LDN

clx. *The baseline project of ERASP is the IFAD Programme for Irrigation Development (PRIDE)

clxi. ** The TE is the World Bank Implementation Completion and Results Report (ICRR) for the Agriculture Sector Wide Approach Support Project

clxii. *** Disbursed at project completion.

Findings

2.1 Relevance

Malawi faces serious environmental challenges of land degradation, deforestation, constrained water resources and declining fisheries. It has farming practices that lead to soil erosion and reduced fertility and limited institutional capacity to manage its natural resources.¹⁵⁶ Malawi is one of the poorest countries in the world. More than 70% of its population lives below the international poverty line, many in the Southern Region which has the highest population density. The combined effect of rapid population growth and persistent poverty, natural land conversion into agriculture, unsustainable agriculture and climate change impacts are exacerbating environmental degradation. Most rural families depend directly and heavily on natural resources for their livelihoods, in particular farmland for cropping, and woodlands and forests for the provision of non-timber forest products and fuelwood, mainly for charcoal, the latter supplying nearly 90 percent of national domestic energy needs. These are major drivers for land degradation.

Agricultural expansion has reached its limits as increasingly fragile upper water catchments are cultivated. In the plains, agricultural intensification has taken place primarily along riverbanks and in wetlands. Malawi's rich water resources are under threat from severe land degradation, loss of forest cover and unsustainable fisheries. Critical watersheds are becoming degraded and are prone to siltation of water courses, leading to less water availability and deteriorating quality, decreasing productivity of agriculture and fisheries and reduced energy security (through negatively affecting the nation's hydro-power infrastructure). Malawi's forests and woodlands play a key role in supporting livelihoods and ecosystem services, protecting watersheds from upstream erosion and sustaining Malawi's biodiversity which is increasingly threatened. Malawi has unique and diverse flora, fauna and ecosystems, attributed to its diverse climate, soils and topography, also underpinning Malawi's tourism sector and making an important contribution to reducing carbon emissions. Malawi has 87 Forest Reserves, five National Parks, and four Wildlife Reserves. The Shire River Basin boasts some of Malawi's most iconic protected areas.

Malawi is particularly prone to adverse climate hazards that include dry spells, seasonal droughts, intense rainfall and cyclones, riverine floods, and flash floods with adverse impacts on agriculture, fisheries and wildlife, infrastructure, energy, and human livelihoods. In recent years Malawi has suffered from weather shocks at an increasing frequency, including simultaneous droughts and floods in early 2015, followed by another major drought in 2016. The recent hurricane that hit Southern Malawi in March 2023 is yet another sign of climate hazards.

Agriculture and forests remain the backbone of the economy and are vital for the livelihoods of most Malawians including for food and nutrition security. Smallholder farmers account for 80 percent of agricultural production, but the sector remains characterized by low productivity further driving farmers into unsustainable land practices and extension. A well-established, but under-resourced network of agricultural and rural institutions exists to support agriculture and

¹⁵⁶ This section is based on several sources: WB Country Environmental Analysis 2019; Malawi WB project documents and websites for MWASIP and SVTP projects; and USAID website: <https://www.usaid.gov/malawi/environment>

NRM at all levels. Especially decentralized district and local governance, extension and community institutions tend to be weak without external project support.¹⁵⁷

GEF investments and activities in six projects over the past 15 years have been highly relevant to address the drivers of environmental degradation in Malawi's dryland areas and related watersheds. Two projects that were implemented by the World Bank and UNDP started in 2009/10 and were linked through GEF's SIP.¹⁵⁸ They mainly supported SLM and conservation agriculture to reduce land degradation and contribute to Land Degradation Neutrality (LDN) while improving overall productivity and profitability of maize and other major crops (GEF ID 3375 and 3376, Table 2). They also aimed at contributing to improved policy and institutional frameworks. While maintaining SLM activities, GEF projects over time increasingly broadened to landscape approaches of watershed basins and sub-basins, in support of the Government's focus on small-scale irrigation and integrated NRM. The GEF in Malawi also focused increasingly on sustainable forest management (five projects) and biodiversity (three projects). In some of these projects GEF funding focused on components with environmental and biodiversity aspects within larger agricultural co-financed investments, watershed planning and infrastructure development. The GEF partnered with the World Bank and IFAD in three projects that invested strongly into irrigation, related services and, to some extent, value chains (GEF ID 9138, 9842 and 4625 (WB SRBMP)). Two GEF free-standing projects covered environmental, livelihoods and watershed aspects more broadly (GEF ID 3376 and 10254). In all projects, GEF environmental investments were closely linked to socio-economic objectives and community engagement.

¹⁵⁷ WB Country Environmental Analysis 2019

¹⁵⁸ GEF Strategic Investment Program (SIP) for soil and land management (SLM) in Sub-Saharan Africa. The SIP aimed to optimize natural resource use at landscape level, assisted by knowledge, analytical and policy support through the TerrAfrica program strategic partnerships. (FAO, World Bank and NEPAD 2016 <https://www.fao.org/3/i5621e/i5621e.pdf>)

Table 2 – Coverage of policy priorities/thematic areas by GEF drylands projects in Malawi

GEF ID/ Agency	Project Name	SLM	Value chains	Local governance	Charcoal Substitution or sustainable production	Sustainable Forest Management	Biodiversity / wildlife	Policy, institutional and knowledge support	Landscape/ watershed management	Complementary infrastructure (IA baseline project)
3375 WB	SIP: Agriculture Sector Development Programme - Support to SLM (ADP-SLM)	✓✓	✓					✓		✓✓ Irrigation
3376 UNDP	SIP: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin	✓✓		✓	✓✓	✓		✓✓	✓	
9138 IFAD	Food-IAP: Enhancing the Resilience of Agro-Ecological Systems (ERASP)*	✓	✓	✓	✓	✓			✓✓	✓✓ Irrigation
4625 WB	Shire River Basin Management Program (SRBMP)	✓		✓		✓✓	✓✓	✓✓	✓✓	✓✓ Planning for hydro-power energy security and flood protection

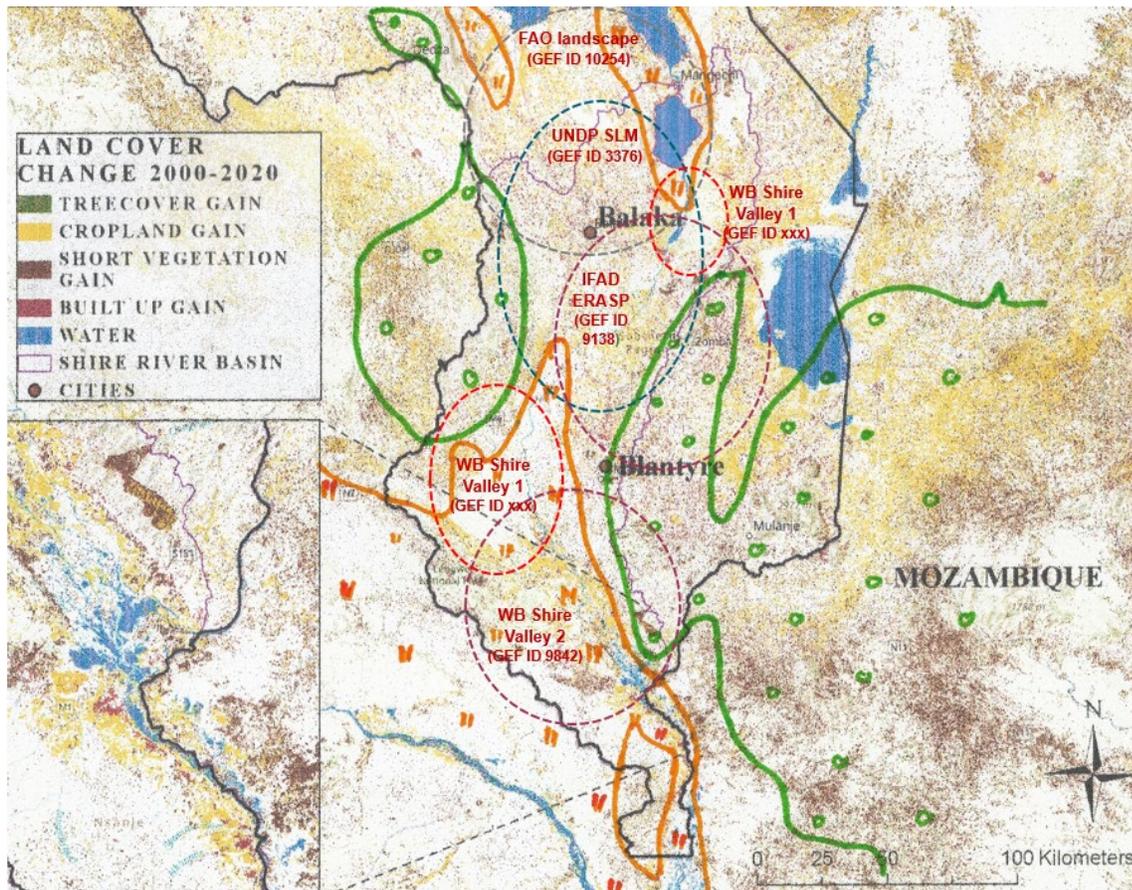
GEF ID/ Agency	Project Name	SLM	Value chains	Local governance	Charcoal Substitution or sustainable production	Sustainable Forest Management	Biodiversity / wildlife	Policy, institutional and knowledge support	Landscape/ watershed management	Complementary infrastructure (IA baseline project)
9842 WB	Shire Valley Transformation Program (SVTP) Phase I			✓		✓✓	✓✓		✓✓	✓✓ Irrigation, flood protection
10254 FAO	Transforming landscapes and livelihoods: Restoration of Malawi's miombo and mopane woodlands for sustainable forest and biodiversity management	✓	✓	✓	✓	✓✓	✓	✓	✓✓	

clxiii. ✓ - Supported

clxiv. ✓✓ - Strongly supported

Five out of six GEF drylands projects concentrated on the Shire River valley in Southern Malawi (Figure 1)¹⁵⁹. The Shire River valley is part of the African Rift Valley and links Lake Malawi in the North (Mangochi district) with the Zambezi River in the South (Mozambique). It is characterized by lowlands that are partly dry sub-humid and partly semi-arid, with the Shire River being flanked by hills and elevated plateaus in the West and the East that tend to be more humid. Within the Shire River basin, GEF projects have focused on several sub-basins/catchment areas, and the World Bank SRBMP project (GEF ID 4625) also covered planning, institutional support, and investments for watershed management in the whole basin. Environmental and socio-economic interactions between the lower and more elevated areas in the Shire River are common. Concentrating development efforts in the Shire valley's drylands alone may not be sustainable as gains can be easily nullified or negatively affected in the absence of adequate catchment management in the upstream Upper Shire and the uphill areas, especially through siltation from these areas.

Figure 1 – Shire River water basin in Southern Malawi, aridity zones and GEF projects



¹⁵⁹ See Annex 4 for specific districts of project locations.

Legend aridity zones:



2.2 Coherence

Coherence of environmental and climate change policies in Malawi

Malawi has a full suite of policies in place to address the country's economic, environmental and climate challenges. Malawi's institutional and policy framework for natural resources management dates back over 20 years, has been regularly updated and is characterized by an elaborate and diverse set of policies, legal instruments, and institutional arrangements.¹⁶⁰ The Government of Malawi also demonstrated its commitment to addressing NRM and climate change challenges through joining several related processes, submitting its NDC in 2021, setting an ambitious Land Degradation Neutrality target to restore 4.5 million hectares of degraded land by 2030 (out of a total land area of 9.4 million hectares), and investing at scale in reversing landscape degradation and protecting the most important watersheds. See also Annex 4 for a fuller discussion of policy coherence in Malawi.

- clxv. Coherence is supported by institutionalized coordination and other arrangements that reach from the national level down to the districts. At the national level coherence is supported by policy planning processes, cross-sectoral coordination of ministries and public agencies, and alignment of budgets, including donor support and activities. SCCE interviews indicated challenges in practice, however, especially at the decentralized local level due to substantial differences in local technical and management capacities, which affects the coherent implementation of national policies and the coordination of different partners and sectors through local governments (vertical coherence). At the national level, policies are not always clear in their priorities, especially on conflicting objectives, such as between agriculture, water development and energy sector priorities on one side and those of natural resources and forestry interests on the other. According to the World Bank's Malawi Country Environmental Analysis (2019), forest and land restoration does not yet have the highest priority for the Government. This has also been leading to some misaligned incentives in NRM management.

Policy coherence

Two areas of policy incoherence and misaligned incentives affected SLM and watershed management effectiveness in Malawi drylands: the current focus of agricultural subsidies on intensive maize production and the implementation of the 2017 National Charcoal Strategy. Several reports have been pointing to the detrimental effects of existing subsidies under the

¹⁶⁰ See Annex 3, Table A.4 for a full list of main legislation by sector and NRM themes.

Farm Input Subsidy Program (FISP) for SLM adoption (IFPRI 2015¹⁶¹, World Bank 2019¹⁶², FAO 2023¹⁶³). Subsidies were especially detrimental in the drier southern parts of the country, including the Shire Valley, which are characterized by more favorable conditions for drought resistant crop varieties such as sorghum and pigeon peas (FAO 2023). While current input subsidies increase the adoption of intercropping and residue mulching, they often crowd out adoption of zero tillage and other practices associated with conservation agriculture (CA), leading to partial and inefficient compliance with SLM/CA methods (IFPRI 2015). Current public investments and misaligned maize subsidies do not incentivize farmers to pay for up-front SLM costs, although benefits could accrue relatively rapidly with on-farm investments, often within one or two years.

Incoherent charcoal policies, implementation, and disregard of realities on the ground not only threatened to undermine forest protection in Malawi but also has been leading to negative alternative livelihood effects for many poor Malawians. The 2017 National Charcoal Strategy and the 2019 Amended Forestry Act were a step in the right direction to rationalize charcoal production and energy use in Malawi, but their implementation was weak as the uptake of charcoal licenses, concessions and the use of alternative energy sources remained low. The Strategy included a proposal to develop legal and sustainable charcoal value chains which offered, for the first time, an opportunity to legalize the charcoal value chain and move toward more sustainable charcoal production. Yet the process and costs involved in getting sustainable charcoal licenses meant that this was an unrealistic option for most small-scale charcoal producers. By 2023 only 11 producers who owned woodlands had received licenses, according to the Forest Department.¹⁶⁴ Weak implementation of the charcoal strategy has been threatening a crucial safety net and alternative income opportunity for smallholders, forcing many of them into poverty or into underground work.¹⁶⁵ ¹⁶⁶ They often cut down more trees to recover their losses and had no incentive to invest in sustainable forest management and charcoal production.

GEF contributions to policy development, coherence, and synergies

- clxvi. GEF contributions to policy coherence
- clxvii. All GEF projects of support for drylands in Malawi analyzed the policy context at design and were aiming to influence policies through direct policy support or provision of inputs from project lessons and experiences. This started with planned concerted policy efforts of both SIP projects by World Bank and UNDP on SLM (GEF ID 3375 and 3376).

¹⁶¹ <https://www.ifpri.org/publication/heterogeneous-preferences-and-effects-incentives-promoting-conservation-agriculture>

iii. ¹⁶² World Bank Malawi Country Environmental Analysis 2019

¹⁶³ GEF ID 10254 - FAO project design document

¹⁶⁴ <https://news.mijmw.com/eleven-people-attain-charcoal-production-licenses/>

¹⁶⁵ <https://mwnation.com/malawis-charcoal-dilemma/>

¹⁶⁶ Based on research by Dr. Harriet Smith of the University of Southampton (published in June 2017) <https://www.southampton.ac.uk/engineering/news/2017/05/charcoal-burning-malawi.page>

The UNDP SLM project specifically contributed to the review and development of new policies in forestry, charcoal, agriculture, and energy. This happened mainly through the project's report on *"Policy sector review for incorporating SLM in the Shire River Basin and development of an institutional framework for sustainable land management."* This review facilitated legislation of four policies and establishment of institutional arrangements in SLM but the TE does not precisely explain whether this happened just through the review or through some form of policy dialogue.¹⁶⁷ UNDP also conducted feasibility studies for charcoal, green water credit and crop insurance that were shared more broadly with Government and other development partners. The extent of specific policy engagements in policy reviews, development and dialogue, and of cooperation by World Bank and UNDP was less clear, as there was no reference to it in the terminal evaluations (TE). The World Bank TE (GEF ID 3375) does not mention any policy effects for the GEF part of the project. Also, World Bank and UNDP were working with and through different ministries and entities, and both implementing agencies' policy support on SLM was not necessarily limited to the specific GEF projects but happened over a longer period, including after completion of both projects.

clxviii. According to key interview partners, the NRM policy dialogue has been intensive in the more recent GEF projects co-financed by the World Bank and IFAD, especially on the systematic integration of environmental and watershed considerations in irrigation and flood prevention planning. Some of this happened under the responsibility of the GEF co-finance partners, such as on broader watershed planning and multi-sectoral coordination in the Shire River basin development, though including GEF project coordinators. By bringing in the Ministry of Forestry and Natural Resources, the GEF "changed the conversations on environmental protection and conservation in Malawi" as one of the interviewees said it. Interviewees perceived that it would have been difficult to fund certain environmental, biodiversity, and conservation project components without GEF participation, as there was no or little demand from the relevant Government sector ministries in charge of agriculture, water development, irrigation and flood protection. GEF projects also moved over time from policy reviews to generating lessons and testing methodologies for operationalizing existing and new legislation, such as in the context of large-scale land-based investments, including land laws. The GEF was also helping GoM to address broader regional and global priorities for wildlife conservation, such as on wildlife crimes, updating the IUCN Red List, and benefit sharing arrangements for genetic resources.

clxix. Synergies with other development partners

All GEF projects worked coherently with other domestic and international development partners, generating synergies and scaling effects. GEF SIP programme support was channeled through two implementing partner agencies, **UNDP and World Bank** (GEF ID 3375 and 3376) who together promoted a strategic package of SLM policy, capacity development and implementation that contributed to more awareness and knowledge about SLM in Malawi (see

¹⁶⁷ UNDP SLM Terminal Evaluation

earlier). The **UNDP SLM project** (GEF ID 3376) worked closely with other agencies and donor-funded projects in targeted districts that were either implemented parallel or evolving, in order to generate synergies, avoid duplication and facilitate sustainability beyond GEF-ID 3375 completion. This included JICA (COVAMS II project), the World Bank (SRBMP), DFID and USAID (see also Annex Table A.5). For instance, UNDP-SLM and COVAMS II had joint training sessions for extension workers on integrating forestry messages in agricultural extension. COVAMS II provided mobility for extension workers through a donation of motorcycles and analyzed soil erosion and fertility relevant to the GEF project. The UNDP SLM project also worked with several NGOs on honey production and improved value chains for fishing communities. Special synergies were generated with the Department of Climate and Meteorological Services, mainly through a follow- and scaling-up project to GEF ID 3375 with GCF to strengthen government climate awareness, early warning systems and crop insurance indicators (see Chapter 2.3). The **IFAD ERASP project** (GEF ID 9138) has been working with the World Bank's watershed development programs and with UNDP's TRANSFORM project that have been implementing similar catchment management interventions to build capacity of local institutions, as well as with the One Acre Fund and the Enhanced Public Works Programme.

GEF projects provided additionality to their co-financed baseline projects. GEF mobilized complimentary resources for SLM, sustainable forest and integrated watershed management and infrastructure through cooperating with the **World Bank's SRBMP and SVTP projects** (GEF ID 4625 and 9842). These projects included the Ministries of Agriculture, Water and Forest and Natural Resources. This facilitated awareness for biodiversity outcomes and a more holistic, transformative thinking and planning process in the sector ministries. The main synergetic complementarities of the **IFAD ERASP project** (GEF ID 9138) were in integrating upstream environmental activities and agricultural intensification through irrigation in sub-watersheds. The IFAD co-financed projects also allowed better support for value chains and producer organizations, including for honey, legumes and horticulture products.

2.3 Environmental outcomes and socioeconomic co-benefits

Environmental and socio-economic outcomes

- clxx. GEF supported projects in Malawi achieved significant environmental outcomes and socio-economic benefits of different kinds, through their GEF components and often augmented by activities of the co-financed baseline projects of implementing agencies. As discussed in the sections that follow, these outcomes included environmental benefits through reduced land degradation, sustainable forest and landscape management and enhanced biodiversity. Socio-economic benefits included safer habitats and living through flood protection, higher agricultural productivity and food security through SLM, and increased incomes from alternative livelihoods.
- clxxi. Most GEF projects performed satisfactorily but not all projects achieved outcomes in all components. The WB implemented SLM project (GEF ID 3375, 2009-14) reported overall satisfactory outcomes for its agricultural institutional, productivity and market support components, including its global environmental outcomes that financed by GEF. It

achieved its development objectives substantially. The parallel UNDP SLM project (GEF ID 3376, 2010-15) also had relatively satisfactory outcomes in SLM and knowledge and learning, including institutional and individual capacity development and policy support for SLM. This was partly achieved through coordinating such support with that of the WB SLM project. But the project did not manage well to pursue ambitious objectives for innovative arrangements on charcoal production (including private sector), green water credit and crop insurance during its lifetime. The ongoing IFAD ERASP project (GEF ID 9138, 2017-23) has been successfully managing several micro-catchment conservation areas adjacent to new and existing irrigation schemes although the critical irrigation development component of the IFAD baseline project has been slow in taking off. The WB SRBMP project (GEF ID 4625, 2012-19) fully achieved its objectives of developing the Shire River Basin planning framework, bringing about positive land use changes and improving the management of national parks, forests reserves and protected areas and wildlife (targeted by incremental GEF support). Implementation progress in the ongoing WB SVTP project (GEF ID 9842, 2018-23) has so far been moderately satisfactory (at MTR), with GEF funded activities effectively supporting management, law enforcement and community engagement in several wildlife areas.

- clxxii. GEF projects in Malawi have reported significant achievements of *environmental outcomes* in SLM, wildlife and biodiversity protection. The WB and UNDP implemented SLM projects strongly prioritized the support for SLM practices to reduce land degradation. For the WB SLM project (GEF ID 3375) this meant to increase soil organic matter in conservation farming to improve crop productivity which was done on about 200,000 hectares (ha), or approximately 5 per cent of Malawi's agricultural lands. Soil organic matter was tripled in these areas, more than 100 per cent above target. Additionally, 130,000 ha were put under complementary soil and conservation practices across the country.¹⁶⁸ The UNDP SLM project (GEF ID 3376) estimated that its work resulted in increased land quality on about 150,000 hectares, with a 40 per cent increase in wood vegetation through SLM and forest regeneration and corresponding reduced soil erosion.¹⁶⁹ Other SLM initiatives in the area contributed to these results. 77 per cent of project farmers adopted at least three SLM practices promoted by the extension services and studies by other projects in the area showed that soil fertility, including the amount of nitrogen, phosphate and potash per hectare increased significantly. The UNDP SLM project also led to a 50 per cent reduction of the rate of deforestation in the area. The field visits anecdote evidence for IFAD ERASP project (GEF ID 9138) showed strongly reduced water run-off in many of its sites, although the exact extent to which this was happening was difficult to measure in practice. This was supported through erecting various soil and water conservation structures such as deep trenches, infiltration pits to capture water, gabions and stone bunds, partly in areas that were much further upstream than the protected irrigation structure. These structures

¹⁶⁸ World Bank. 2017. Agriculture Sector Wide Approach Support Project (Malawi). Implementation Completion and Results Report (ICRR).

¹⁶⁹ This and the following outcomes for the UNDP SLM project were reported by the GEF project's Terminal Evaluation (UNDP, Government of Malawi, GEF. 2016)

also helped to increase naturally regenerated areas, although at less than 50 per cent of what was planned at the time of the MTR (2021). In addition, the project successfully supported tree nurseries, the production of seedlings and helped with 31 community forest management plans, which led to reforestation in four sub-catchment areas of 182 ha in Karonga, Machinga and Phalombe districts.¹⁷⁰

- clxxiii. The main outcomes by the incremental GEF support in the **WB SRBMP project** (GEF ID 4625) were reductions in illegal encroachment, poaching and deforestation in protected areas (Lengwe and Liwonde National Parks), largely contributing to its biodiversity and wildlife protection objectives. These areas cover a large portion of the Shire River basin landscape and also play a key role in ecosystem services. The project also helped communities with co-managing two forest reserves in Neno district, adjacent to the national parks that are important wildlife corridors. The management effectiveness score (METT) increased from a baseline of 39 to 70 percent which implies that protected areas and forest reserves within the Shire River Basin are now better managed.¹⁷¹ GEF support in the ongoing **WB SVTP project** (GEF ID 9842) has been helping with law enforcement in protected areas. Apart from protected parks the project works with communities in a community conservation area (the “Elephant marshes”) which not only has been leading to the protection of mammals, such as through the establishment of wild-life corridors, but also of many fish, birds, and forestry species in this area of highest biodiversity. Work in conservation areas with a total area of over 133,000 ha is progressing with support from the WB baseline project.¹⁷²
- clxxiv. Through synergies with the World Bank projects (GEF ID 4625, GEF ID 9842) in the Shire Valley and their integrated landscape approach and forest area management other environmental outcomes have been achieved. These projects contributed to improving land management and noticeable changes in land use and key vegetation indices. For instance, the NDVI in targeted water catchment areas increased by 33 percent between 2012 and 2018 that could be attributed to the project. For the national parks and forest reserves that benefited from improved management measures supported by GEF, NDVI increased by 20 per cent during the same time.¹⁷³ **At the socio-economic level GEF projects in Malawi delivered improved incomes and other benefits mainly from improved environmental management and alternative complimentary livelihood activities. Some opportunities were missed for livelihood gains through better NRM and faster development of irrigation.** The **WB SLM project** (GEF ID 3375) was designed to generate both global environmental benefits as well as increase the income and strengthen the livelihoods of Malawian agricultural producers and communities. This happened mainly through higher average maize yields in targeted households from 1.4 to 1.9 mt/ha and through contribution to crop diversification through seed production

¹⁷⁰ IFAD 2021. Programme for Rural Irrigation Development (Malawi). Mid-term Review.

¹⁷¹ World Bank. 2019 b. Malawi: Shire River Basin Management Program (Phase-1) Project. Implementation Completion and Results Report (ICRR).

¹⁷² World Bank. 2021. Shire Valley Transformation Program – Phase 1. Mid-Term Review. 01-Sep-2021.

¹⁷³ World Bank. 2019 b. Malawi: Shire River Basin Management Program (Phase-1) Project. Implementation Completion and Results Report (ICRR).

and research. Improved SLM contributed to the maize yield increase. At the same time, however, the target of sustainable improvements in food secure households was not fully achieved, mainly due to subsequent dry spells and floods in 2015 and 2016 after completion of the project.¹⁷⁴ The **UNDP SLM project** (GEF ID 3376) estimated that 45 per cent of its households gained improved incomes from alternative livelihoods at project completion, mainly from bee-keeping and other value chains (aquaculture etc.).¹⁷⁵ This figure could, however, not be fully confirmed by the evaluation. The main source of planned socio-economic benefits for community members in this project did not materialize as the related components were not concluded successfully. These were additional incomes planned from sustainable charcoal production, green water credit and risk sharing through crop insurance in case of droughts and floods. In the longer term several socio-economic benefits started to accrue from improved environmental flood protection in the project area (see also Ch. 2.4).

- clxxv. For the ongoing **IFAD ERASP project** (GEF ID 9138), there are four additional income sources for beneficiaries and communities, partly related to changes in environmental practices and infrastructure.¹⁷⁶ First, changes in agricultural practices such as through crop diversification and substitution of inorganic fertilizer through a holistic approach of soil conservation practices and protection from run-off water led to substantially higher agricultural production, food security and incomes. Secondly, water control measures prevented houses from being destroyed through heavy rains and water run-offs, including cyclone Freddy in March 2023. Third, beehives erected in community forests were a good source of additional income, particularly in financing agricultural activities during the growing season. Some households also benefited from other value chain support of the IFAD baseline project. And fourth, the IFAD ERASP project supported upstream communities that did not directly benefit from downstream irrigation schemes to enhance their environmental practices through a scheme of facilitating goat ownership. The acquisition of goats added to households' livelihood portfolio and reportedly also helped them to shift away from charcoal production. This motivational support constituted a form of payment for environmental services.

Most of the socio-economic benefits of the WB SRBMP project (GEF ID 4625) were generated by the non-GEF supported components of the project. Consistent with global best practice on watershed management, the project adopted a livelihoods approach which included the establishment of 80 farmer field schools for improving agricultural practices, the provision of enterprise micro-loans for alternative nonfarm livelihoods, community environmental conservation grants and rural infrastructure or market access, such as 80 km of feeder roads, 11

¹⁷⁴ All information on GEF ID 3375 is based on the World Bank ICRR (World Bank. 2017. Agriculture Sector Wide Approach Support Project (Malawi). Implementation Completion and Results Report).

¹⁷⁵ UNDP, Government of Malawi, GEF. 2016. Private Public Partnership for Sustainable Land Management in the Shire River Basin. Terminal Evaluation.

¹⁷⁶ Results for GEF ID 9138 that are described in this para were reported in the project MTR (IFAD 2021. Programme for Rural Irrigation Development (Malawi). Mid-term Review.). They were confirmed through field interviews during the SCCE Drylands mission's field visits in April 2023.

bridges and 13 market centres.¹⁷⁷ The **WB SVTP project** (GEF ID 9842) was planning to support community beneficiary livelihoods in the vicinity of its wildlife protection areas through bringing in trees as a crop for sustainable firewood/charcoal and timber use and through generating partnerships with communities for income opportunities in tourism and protection of parks and conservation areas. These efforts, however, have only started and are supposed to be accelerating during the next phase of the project planned for starting in 2024.

What factors and risks influenced performance?

For the **UNDP SLM project** (GEF ID 3376), the most important and repeatedly reported factor during the field mission for short-term project performance was that district administrations were not able to effectively deal with UNDP financial and administrative procedures and did not receive sufficient administrative support. This led to delays in approval of financial reports and requests, combined with unreliable co-financing. Government funding was limited, and government field staff often depended on additional project funds for operations. In terms of positive influence on performance beneficiaries and extension workers mentioned the use of appropriate technologies for SLM field interventions that were mainly based on current approaches and easy to adopt by stakeholders.

Interview partners in the **IFAD ERASP project** (GEF ID 9138) focused more on factors that contributed positively to results such as the willingness of community members to actively participate despite there being no direct payments for participation. Communities noticed that the project was addressing the real issues they faced of low agriculture yields, floods, and inadequate water for irrigation. The project uses qualified technical experts from government departments from the districts. This and other measures built trust between implementing staff and community members.

Box 1 – Testimonial from the field: UNDP SLM project area (Kalemba Traditional Authority, Ulongwe, Balaka district)

¹⁷⁷ World Bank. 2019 b. Malawi: Shire River Basin Management Program (Phase-1) Project. Implementation Completion and Results Report (ICRR).

Previously the rivers often flooded, affecting communities' agricultural land and residential areas. Due to land pressures, some members of the community used unsustainable agriculture practices such as cultivating along the riverbanks and on steep slopes. These practices were exacerbating environmental degradation in their communities and communities downstream. The project addressed key challenges facing the target communities and prevented flooding by rivers changing their course.

The project reduced unsustainable practices such as cultivating along the riverbanks. Instead, trees were planted along river lines by the UNDP SLM project, such as those of the Mkasi river (left picture below). This river used to change its path often, which was weakening the bridge structure on the Machinga – Mangochi road. The river has stabilized its path after the trees were planted on lands that were formerly used as crop fields. There are established bylaws that no one should touch any trees or reeds along this riverbank.

Overgrazing in marginal areas also led to erosion and subsequent village floodings. Some households started relocating because of the heavy water passing through this area. Through community engagement under the SLM project trees were planted in this area and bylaws were set to protect tree regeneration. Water flooding stopped, and the community behind the forest is safe.

The project led to reduction of encroachment into forest areas for accessing charcoal and firewood as a livelihood strategy, as bee-keeping and alternative crops were introduced. These bee-keeping groups have formed a cooperative which proved to be sustainable and is still running today. The groups are benefiting from honey production as an alternative to unsustainable charcoal production. Besides honey production from the community managed forests, the groups have diversified their livelihood portfolio through collective farming of higher value crops like soybean. The groups have also integrated Village Savings and Loans to promote a culture of savings, which increased social cohesion. The picture of the Dailesi village forest below shows beehives as a forest-based income generating activity (picture below on the right). The forest has 20 of these beehives. Each beehive produces about 25 kg of honey which is sold at MK4,000 per kg. The communities have also integrated fruit trees in the afforestation of community forests. That way, the trees play a multiple role of catchment conservation, providing fruits to their diets, and, to some extent, firewood.



Source: GEF IEO Field mission

Box 2 – Testimonial from the field: IFAD ERASP project area (Chambe Traditional Authority, Machinga district)

There used to be continuous forest degradation due to pressures from charcoal production. Lands carried fewer crops. There were limited livelihood options for the communities in the uplands hence they resorted to the production of charcoal. Loss of trees led to low water supply for irrigation in the lowlands. Bare rivers, without trees, caused early drying of rivers making small-scale irrigation ineffective. Run-off water often destroyed their fields. They could invest in inorganic fertilizer, which is expensive, but the returns were continuously dwindling due to erosion of the fertilizer and soil nutrients. As such there was a vicious cycle of food insecurity year after year as communities could not produce enough food from their farms. **There were also increasing incidences of flood-related disasters.** Frequent river flooding affected agricultural land and residential areas. Loss of housing infrastructures due to heavy runoff from the uplands was common.

The IFAD ERASP project made efforts in lowlands and uplands to manage the catchment area. Many farmers from the villages in the area participated in trainings, men as well as women, on improving their understanding of climate trends, resource mapping and better agricultural practices of using short duration varieties, early planting, diversification, post-harvest handling and the use of organic fertilizer. With ERASP support, communities constructed a number of **infiltration pits, that cover the upper part of the watershed** (see pictures below). The downstream communities have reported fewer episodes of floods. The project also supported upland communities through the goat-pass-on scheme which generated alternative incomes.

Communities were able to implement conservation practices by themselves. Trees and bamboos have been planted. Before the project, the river was drying up around the month of October, a month which is critical for implementation of irrigation activities. Currently, there is enough water for irrigation in the river in the dry season and they can cross the water in the rainy season. Irrigation is a necessary component of their livelihood as they diversify away from the forest and natural resource-based livelihood options which often led to deforestation.

The communities are appreciating the benefits of the project. The river had adequate water after vegetative cover increased along the river line. Flooding is reduced and crop yields are higher when comparing before and after the project. One lady reported that on 1 acre of land, she could only harvest about 10 bags of maize. She has observed an increase in production on the same piece of land to about 35 bags of maize on the same piece of land, and she attributed this increase to better catchment management. Her household is more food secure now than before the ERASP project.



Source: GEF IEO Field mission

Sustainability

Several achievements of the UNDP SLM project (GEF ID 3376) on environmental and socio-economic outcomes were sustained, and some income-related outcomes expanded after completion. The post-completion evaluation and the field mission to the **UNDP SLM project** sites 8 years after the project's closure concluded that *environmental outcomes* were sustained. Several sites that had juvenile vegetative covers through reforestation or natural regeneration at the time of the terminal evaluation are now fully grown and deep green. They are contributing to reduced water run-offs and river diversions and in turn, leading to improved agricultural production and food security.

A GIS analysis carried out by the evaluation of changes in forest loss and gains in the village forest areas (VFA) shows that there was a net gain of forest area within the VFAs, which is a positive finding for the GEF project. Before 2011 forest loss was 1.2 percent of total forest area in the VFAs which represented about a hectare of loss. There has been no detected forest loss in any of the VFAs visited by the mission since 2011. Overall, between 2000-2020 about 4.5% of forest area was added in the VFAs covered by the UNDP SLM project. By comparison, the buffer area around the VFAs lost a slightly higher 1.3 percent of its forest area, or 2.5 ha. It is possible there was a bit of "displacement" here where due to the protected status of the VFAs, people went to nearby areas to perform the forest loss.

While project sites have shown durable environmental outcomes, the mission found limited concrete evidence on whether SLM practices have expanded since project completion, and to what extent farmers themselves continued reforestation and natural regeneration activities. The positive impact on *household income* already observed at completion has since grown. Community members from the project area confirmed their forest-based enterprises, formed under the UNDP SLM project, are still running, earning them additional income. For instance, the Mkasi cooperative visited by the mission engages in forest conservation and bee keeping and has expanded its membership and activities since project completion.

The project also built a foundation for other development agencies to continue or expand activities in the areas of crop insurance and meteorological data collection systems. Crop insurance was not operationalized before the project's closure since the relevant insurance study was completed late in the project, with pending issues about agreeable insurance products from the industry, suitability of identified target groups and trigger indicators for payments. Since then, the Adaptation Fund and WFP have taken up the concept of crop insurance in Balaka district and other districts after the project ended, working with NGOs and other actors to implement a crop insurance scheme. It is not yet perfect, and there are frequent disagreements on compensation payments. Reportedly, farmers are not satisfied with the pay-off values, and more awareness and transparency on its calculations is called for, but a start has been made. The project's crop insurance component was also catalytic for another UNDP project funded by the Green Climate Fund (GCF) on improved early warning systems and better farmer decision-making on climate adaptation that is now completed. The project funded the installation of hydrological and weather measurement stations and linked them with

participatory, farmer climate-smart agriculture services. This also helped build capacities of Malawi's Department of Climate and Meteorological Services on the ground and enhance their recognition because of increasing demand for weather information. In contrast, communities in Balaka were disappointed that the UNDP SLM project's initial feasibility studies and community sensitization on the opportunities and mechanisms of Green Water Credits and other planned payments of ecosystem services (PES) around the Thumoro Forest Reserve had not been followed up after project completion since there was no funding. The component had been unsuccessful during the project due to delays and administrative problems concerning the implementing NGO.

The groundwork that the project laid on sustainable charcoal production ultimately failed to produce results and achieve additional incomes for communities and taxes to the government. The major cause was the reluctance of District authorities to accept this strategy. The project had planned to promote sustainable, certified charcoal production through community woodlots in partnership with licensed private sector companies for marketing the charcoal. The project developed a common vision, rules and regulations on sustainable charcoal in the context of energy needs and drivers of deforestation, and a first charcoal licence was issued. National support for sustainable charcoal production was in place during the time of the project and later confirmed by the 2017 National Charcoal Strategy. But implementing sustainable charcoal production on the ground would have taken time, strong technical support, extensive communications with district and local decision-makers and considerations of the political economy of charcoal production in the project districts. Such support was not available, during or after the project. At the local level, the project also did not garner universal support among District Government officials.

The project introduced three efficient kilns and tested them with a private company that was licensed to produce sustainable charcoal (Kawandama Ltd.). Potential local governance structures were developed. Eleven charcoal producer associations were formed in Mwanza, Balaka and Neno districts, which are the major charcoal producing areas. But there was no agreement on sustainable wood sources in the project area. The perception by district authorities was that sustainable charcoal production is not possible. The license issued to Kawandama Ltd. is still operational and their charcoal is sold in various supermarkets. As of now, the sustainable charcoal production associations developed by the project are no longer operational. At the same time, alternative energy sources are either expensive or not available everywhere, such as gas, or not much used, such as biogas and crop wastes. The GEF FAO landscapes project plans to review several energy options for rural areas, including sustainable charcoal, while interacting with other projects, such as the USAID Modern Cooking for Healthy Forests project.

Factors for sustainability and expanded project activities

- clxxvi. The most important factors for sustained and expanded project activities were improved capacities of and collaboration among Government entities and their front-line workers in the districts and communities. Other factors included:

1. Continued interventions after GEF project completion through existing and new NRM projects in the districts of operation (for the UNDP SLM these were, for instance, the PDRP, COVAMS II, MCA, and SRBMP). These relevant follow-up interventions helped to deepen the impacts of initial GEF interventions and reinforce sustainability.
2. GEF projects were designed in the framework of the central policy strategy, the Malawi Growth and Development Strategy (versions I to III) and other NRM and development policies which—according to interviewees during the field mission—increased the legitimacy and authenticity of the project, helping to lead to positive outcomes.¹⁷⁸
3. Forest management plans have been developed after the UNDP SLM project completed, and these have been helping to protect the gains from the SLM project.
4. Projects were implemented through village structures and traditional authorities which increased ownership of the project.
5. Technically there were no barriers for replication of soil management techniques, agro-forestry and reforestation that were promoted by the UNDP SLM project.

The most important challenges for sustained and expanded project activities included insufficient leadership relative to the technical and policy ambitions of projects and lack of resources for scaling up SLM approaches and enforcing forest protection. These included weak incentives for adopting SLM and agro-forestry/afforestation by farmers, communities, and Government officials and limited opportunities for afforestation, as land was scarce. Unsustainable livestock grazing was another barrier to SLM since it highly contributed to land degradation.

2.4 Natural resource governance

Three major governance issues were raised in interviews with key informants at the national level: the need to focus on local implementation and governance; a better awareness and connection between environmental, social and development objectives; and continued emphasis on enforcement of laws and rules governing forestry. First, most interview partners agreed that for Malawi the most important policy reviews regarding environment, climate change and cross-sectoral approaches and coordination of natural resource management have already been done. Many relevant policies and strategies are in place and provide guidance for implementation even if there may not be full coherence across policies on all issues. Key informants for this evaluation see the biggest governance issues at the local level where implementation takes place. This concerns especially the duplication of different projects in certain places without appropriate coordination, which is mainly the role of the districts and their councils. There is also the problem that different Government Ministries, Departments and Agencies and projects may send conflicting messages to local authorities and beneficiaries – thus generating confusion and watering down their effectiveness.

¹⁷⁸ This point was brought up by district officials and extension staff during the SCCE Drylands Malawi field mission as one of the reasons that supported successful project implementation. A central-level key informant also mentioned this point.

Secondly, when building governance capacities and developing NRM management plans with other national entities and in the districts the Ministry of Natural Resources and Climate Change (MNRCC) observed that environmental and social aspects were often not the priority for more economic development-oriented officials in other ministries and in the districts. Many officials still do not make the positive connections between upfront environmental and social investments and long-term development. In reverse, there is also a problem in the environmental sector as it tends to have many biologists and wildlife experts but few social scientists and economists. This leads to a neglect for acknowledging socio-economic drivers of environmental degradation and the need for bringing about fundamental behavioral change among farmers and officials.

Third, in forestry the biggest issue is clearly seen as enforcement. Rules **exist such as on illegal tree-cutting and requirements for re-planting of trees. But people's livelihoods and requirements for firewood are at stake, as land is scarce, and people are moving up the hills to cultivate on steep slopes and in protected areas and forest reserves. National parks tend to be better at law enforcement.**

Natural resource governance in design

- clxxvii. Natural resource governance was an essential part of the design of all GEF drylands projects in Malawi, covering governance at national and local levels. The two projects from the GEF SIP period (WB and UNDP SLM, GEF ID 3375 and 3376) strongly aimed at mainstreaming SLM in policies and institutions, operational alliances and farmer practices to allow scaling, partly through collaborative efforts (Table 3). The UNDP SLM project had further ambitions to support national policy development and PPP governance structures for alternative income generation for farmers. The IFAD ERASP project (GEF ID 9138) was institutionally aiming at inclusive and negotiated land use planning and resource management in water catchment areas. The two successive World Bank implemented projects in the Shire Valley (GEF ID 4625 and GEF ID 9842) mainly envisioned natural resource management through communities and forest departments in national parks and important wildlife places in the vicinity of these parks. For this purpose, GEF ID 9842 planned to work closely with the WB baseline project on customary land tenure and generating sustainable optimization of land, water and energy resource usage. Land tenure changes were promoted through surveying and mapping of traditional land management areas and developing land use and tenure plans, which include irrigation. These plans would be approved by village committees and Traditional Authorities. At the time of the project's mid-term review (2021) a total of 33 village land use plans had been approved by village committees. Five Traditional Land Management Areas had been surveyed and mapped, but not yet certified by the Ministry of Lands. The project also started to support the establishment of consolidated and certified customary estates for smallholder-owned commercial farm enterprises (SOCFE). In both projects, the WB baseline projects had major ambitions to establish an institutionalized planning, management and monitoring framework for

intersectoral development to improve land and water management for ecosystem and livelihood benefits in the whole of the Shire Valley water basin.

Table 3 – Governance objectives and aspects in Malawi GEF projects (as planned)

SIP: Agriculture Sector Development Programme -Support to SLM (ADP-SLM), World Bank (GEF ID 3375)
The project planned to strengthen the SLM policy and institutional environment and help mainstream SLM within agricultural sector policy and practice at national and local levels. This support was linked to implementing the Agricultural Sector Wide Approach (ASWAp).
SIP: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin, UNDP (GEF ID 3376)
The project aimed to provide policy, regulatory and institutional support for SLM in the Shire River Basin including support for setting up the Shire River Basin Authority. The project would also develop a collaborative framework for different Government sector departments, NGOs and the private sector on SLM (Project component 1). The project would develop public-private-partnerships for providing financial incentives for SLM sustainable charcoal production and green water credits. (Project component 2).
<i>The two projects above under the GEF-SIP, WB and UNDP, would together promote a strategic package to catalyze SLM scale-up, build operational alliances and improve enabling environments. Together they would explore modalities for building a Country SLM Investment Framework. Both interventions would address local institutions to improve enabling conditions for SLM up-scaling in their respective areas of operation (with the WB working in the priority production zones in the upper part and UNDP in the Southern parts of the country).</i>
Food-IAP: Enhancing the Resilience of Agro-Ecological Systems (ERASP), IFAD (GEF ID 9138)
<p>The project planned to support the implementation of the Catchment Area Management Plans (CAMP) through land use planning and resource management at the village level, taking into account customary governance systems and traditional authorities. Conflicting land uses were planned to be recognized, and solutions found.</p> <p>Village Natural Resource Management Committees would initiate local management rules within the CAMP, harvesting fees and sanctions.</p> <p>The project would promote equitable involvement in land and water governance and planning decisions, recognizing all stakeholders' interests, views and foster their collaboration in the planning process.</p>
Shire River Basin Management Program (SRBMP), World Bank (GEF ID 4625)
<p>The project aimed to develop a Shire River Basin planning framework to improve land and water management for ecosystem and livelihood benefits (through the WB co-financed project). This would include coordinated, inter-sectoral development planning, coordination and monitoring capacities and mechanisms.</p> <p>Incremental GEF support would support management in two national parks; community forest co-management in two reserves; and zoning, patrolling, and monitoring a forest reserve adjacent to a national park in recognition of its importance as a wildlife corridor.</p>

Shire Valley Transformation Program (SVTP) Phase I, World Bank (GEF ID 9842)

The project was designed to work towards transformation in customary land tenure in agricultural systems and sustainable optimization of natural resource use (land, water, energy), in a highly demand-driven process. A panel of experts was supposed to support the government in developing a land registry at district level, the identification and recording of existing household land rights, and the establishment of around 30 Group Village land committees. This would include support within a comprehensive land use plan.

The GEF supported component on Natural Resources Management (sub-component 2.2) would invest in community-level natural resource management in areas adjacent to the baseline project's conservation and irrigation areas, in wildlife corridors and in the Elephant Marshes, strengthen conservation and community management and encourage private sector investments (e.g. by tourism concession investors) that could boost revenues for reinvestment in local community development and conservation management.

clxxviii. Source: Relevant GEF PIF and Implementing Agency Project Design Reports.

Natural resource governance in implementation

GEF projects were closely embedded in local government and village level institutions. They created technical and coordination capacities and supported the development and registration of official plans for forest and catchment area management. This had positive effects on environmental governance and contributed to sustainability for the completed UNDP SLM project (GEF ID 3376). All GEF projects in Malawi worked closely with relevant Government agencies at national and local levels and sector ministries' frontline extension workers. In line with Malawi's decentralization policy all projects coordinated their activities with District Authorities, District Councils and Village and Area Development Committees. In the communities, projects worked primarily through Village Natural Resource Management Committees (VNRMC), and their voluntary members. VNRMCs have been formally established in all villages in Malawi for more than 20 years and serve as the main entry point for all NRM activities and projects. In some places these committees had to be reactivated or newly established by the project (ERASP).

Most GEF projects were implemented **in cross-sectoral cooperation between different Government Ministries and Departments such as those covering environment and forestry, agriculture and water, energy, planning and agricultural research, land resources, and wildlife.** GEF projects worked to support the day-to-day activities of these entities and, in general, reported good results in facilitating and accelerating the rate of implementation of SLM and other natural resource related activities in targeted districts and villages. All GEF projects provided extra resources, training, skills and experiences for better implementation and coordination of activities in the districts and villages, according to project documents. **The UNDP SLM project was an example of the positive effects on SLM and forest management of effectively raising awareness, knowledge and learning by technical field staff, village volunteers and district officials (Box 3).**

Box 3 –Awareness, knowledge and learning generation in the UNDP SLM project (GEF ID 3376)

The UNDP SLM project significantly enhanced awareness and capacities of government agencies, local authorities, and village natural resource managers. Performance in knowledge and learning were rated highly satisfactory by the project's Terminal Evaluation. More than 80 percent of the technical officers improved their SLM skills through training by the SLM project. Furthermore, the project provided training of district staff on Land Use Planning and Participatory Forestry Management (75 percent). Information on SLM approaches and practices was packaged for use by the extension staff. Training of community natural resource managers and land users reached 70 percent of farmers during the project. SLM skills were applied after the project was completed, as evidenced by the continued maintenance of the SLM structures built under the project, such as stone bunds and river line afforestation. Key informant interviews suggested that institutional and land user knowledge and learning on SLM and for environmental governance developed positively during the project and further improved after its completion.

Sources: Terminal Evaluation GEF ID 3376 and SCCE Evaluation Mission field visit

Some projects were more successful than others in mobilizing support from the District Executive Committees (DEC) and the District Environmental Committees. Much depended on the interest of District officials and administrative processes. The UNDP SLM project (GEF ID 3376) reported that regular briefings at DEC meetings in the four targeted districts ensured that other projects and NGOs were well informed of each other's activities, that they were fairly well coordinated, and that district officials increasingly supported the environmental agenda). But the field visit of the IFAD ERASP project (GEF ID 9138) also found that not all DECs offer such regular meetings of development partners in their jurisdictions.

Community by-laws for NRM and their enforcement can make an important difference, as the experience of the UNDP SLM and the ERASP project showed. Through developing NRM community management plans and by-laws that could be enforced by local communities and magistrates, both projects significantly supported compliance of regulations, an important governance aspect (Box 4).

The ERASP project also has been working with area water catchment management committees (five sub-basins at mid-term) and village sub-catchment committees working on a voluntary basis. During the evaluation's field visit communities appreciated the role and importance of these committees and were satisfied about the benefits they were already reaping from catchment management such as reduced siltation and flooding. Several catchment area management plans (CAMP) have been developed in ERASP project areas and are currently being registered with the National Water Resources Authority to facilitate the work of the catchment committees, in accordance with the 2013 Water Resources Act.

At a broader watershed level, GEF contributed to the World Bank's effort to institutionally support the Shire River Basin Authority and its environmental governance. GEF presence in the cofinanced project facilitated a stronger anchoring of environmental, natural resource and biodiversity concerns in the Authority, its planning frameworks and projects. The Shire River Basin Management Program (SRBMP, GEF ID 4625), implemented by the World Bank and co-financed by GEF, had a special mandate for supporting institutional capacities in the Shire River Basin Authority and other relevant agencies and for developing the Shire River watershed

planning framework.¹⁷⁹ A multi-sector, multi-agency technical team led by the Ministry of Agriculture, Irrigation and Water Development (MoAIWD) prepared the Shire Basin Plan and, in parallel, initiated implementation of specific projects under this plan. According to key informants interviewed during this evaluation, the presence of GEF in the project helped to bring environmental and climate change aspects to the table. It often changed the conversation in an institutional environment that tended to be dominated by technical agricultural, water engineering and economic development aspects. Better natural resource governance was achieved although the formal role of GEF in this program was focused on wildlife and reserve management. GEF presence in the ongoing World Bank implemented SVTP project (GEF ID 9842) also positively contributes to broader environmental governance in a similar way as in the SRBMP.

At the national level, the early World Bank SLM project (GEF ID 3375, 2009-2014) made some progress on institutional capacity development and learning by doing in the context of the agricultural SWAp, including on SLM governance. But the project's terminal evaluation also found that weak leadership by the Ministry of Agriculture at the time reduced anticipated gains from multi-sectoral collaboration, including on environmental governance.

¹⁷⁹ Establishing the Shire River Basin Authority had already been planned as one of the outputs under the UNDP SLM project (GEF ID 3376), but this was not accomplished as the project's financial, human and governance resources were insufficient for this task.

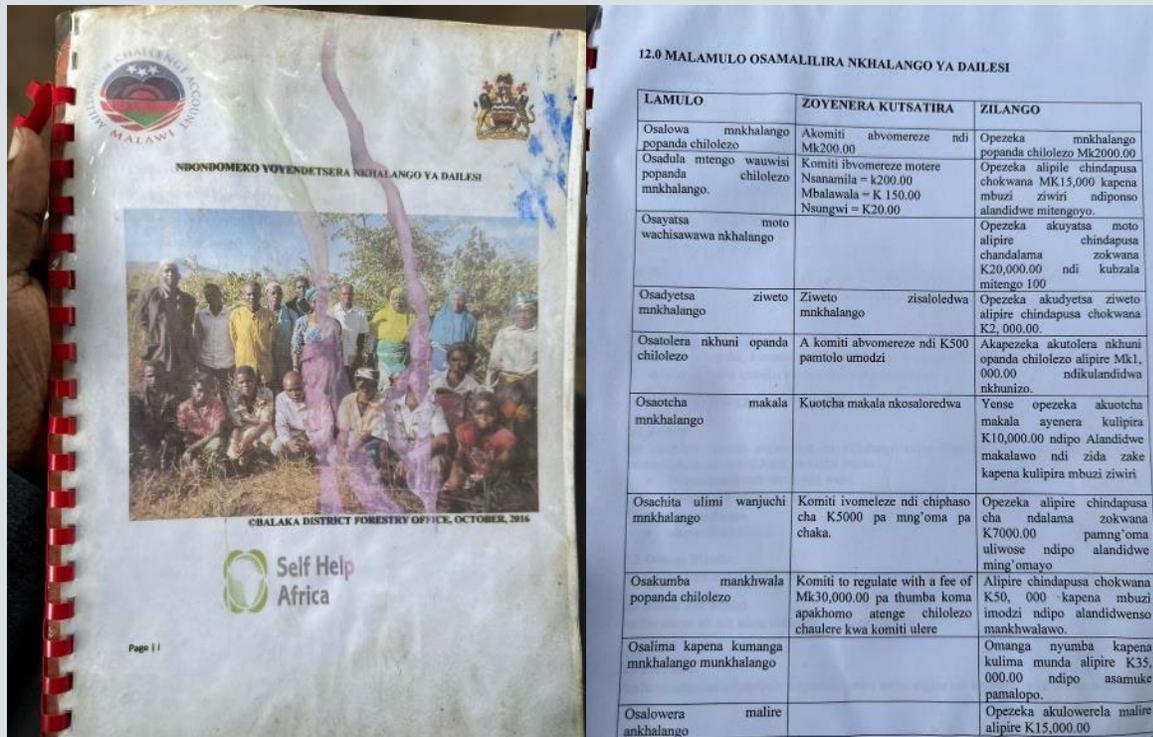
Box 4 – Forest management plans, by-laws and in Balaka district (UNDP SLM project, GEF ID 3376)

Many communities in Balaka District have forest management plans that include well stipulated penalties for non-adherence to community by-laws. The community management plan used for one of the visited sites, Dailes forest, was initiated by the UNDP SLM project (GEF ID 3376) and operationalized with the help of an NGO, Self Help Africa, after project completion to protect gains accumulated under the GEF project. The pictures below show extracts from the village forest management plan.

The by-laws prohibit, among others, grazing in the forest area, cutting down of standing trees without permission and entry into forests without authorization. Violation of these by-laws attracts various penalties. At the time of the Mission’s visit the communities were planning to revise the rates for the penalties to adjust them for inflation since the by-laws were last established.

Some people are still not complying to the by-laws or strategies put forward in the districts such as the prohibition of cultivating along the riverbanks (as opposed to cultivating 10-20 metres away from the riverbanks). River encroachment is causing threats of siltation, flooding and/or changing the course of rivers altogether as the example of the Mkasi river in Ulongwe, Balaka, around the M3 Mkasi Bridge, showed.

Similarly, in the IFAD ERASP projects in Machinga District village natural resource management committees established by-laws with well stipulated penalties for violation that are enacted by community leaders. For instance, cutting down trees from a community forest without permission attracts a penalty of MK30,000 (about USD30). Similarly, those found producing charcoal are fined. The committees and local leaders are now working with the police to strengthen the security of protecting the forests. At the time of the field visit, there were several individuals who had been taken in by the police to custody for illegal cutting down of trees. The involvement of the police as law enforcers has increased a sense of compliance among the community members. All penalties are clearly outlined in the Lingoni catchment management plan.



Land rights and tenure

Through discussions in visited communities the problems of land scarcity, inconsistent land management and enforcement of land use emerged as the most important ones for protecting natural resources and establishing and managing forests. Problems in these areas were often exacerbated by uncertainties about land tenure and traditional community land rights. There is high and competing pressure on the land for agriculture and settlements and allocation of land for afforestation competes with food production. Those farmers who have enough land fear losing this land if they allocate it to community managed forests or woodlots due to weak land tenure systems. Land for communal woodlots is usually given by local leaders but depends on the availability of appropriate lands under their custody. Malawi has developed land-use plans at various levels, including national, district, and local levels. However, the relevance and quality of these plans and their implementation is inconsistent, often ineffective and their use in courts is limited for non-protected lands.¹⁸⁰ Reasons include low public capacities and resources for this task and weak coordination among relevant institutions responsible for designing and implementing these plans, including law enforcement agencies. Traditional authorities also need to be consulted on their lands.

GEF projects contributed in different ways to better land use and land security, such as through helping communities design and register catchment area management plans in the IFAD ERASP project (GEF ID 9138). GEF also supported intersectoral management of landscapes and forest reserves with a strong focus on land tenure, including the Department of Lands and Survey, in the context of co-

management of wildlife reserves with the World Bank baseline project in GEF ID 9842. This allowed to address diverse land tenure issues in public lands under the Forestry and Fisheries Departments of the MNRCC and in community lands with customary land tenure rights by clans with matrilinear heritage, both areas that are critical for protection of wildlife and biodiversity. This ongoing project is developing community conservation areas in the Elephant marshes which have the highest biodiversity in these customary lands, a task that will reach into the next phase of the project.

2.5 Gender, resilience and private sector

Gender

Gender received attention in all drylands oriented GEF projects in Malawi, but women's empowerment was limited to additional income earning activities, such as from beekeeping. M&E tools in all projects disaggregated beneficiary reporting by gender. Specifically, the terminal evaluations of the **WB SLM and UNDP SLM projects** (GEF ID 3375 and 3376) reported that many women improved their awareness and skills on food and nutrition through the project's training activities. In the **UNDP SLM project**, more women than men were involved in most SLM activities (60 percent), even with beekeeping. The latter economically empowered

¹⁸⁰ Based on information collected from the districts during the SCCE Drylands field mission.

women participants as they earned extra income from beekeeping and other promoted value chains. Men only dominated in charcoal production. Women did not feel over-burdened by these activities considering their other domestic work. This was partly due to the seasonal and intermittent nature of SLM activities.

The **IFAD ERASP project** (GEF ID 9138) focused specifically on methods to address and overcome unequal gender and social relations by using the *Household Approach* in 919 households, involving 199 local facilitators in mentoring peer households. The Household Approach is a tool to address gender dynamics through bringing together all household members towards joint decision making and planning, joint marketing, a fair division of labor, and equal access to and control over resources and benefits. The ERASP project also promoted nutrition education, the use of improved cook stoves and afforestation to generate gender benefits. Women especially appreciated lessening their burden to fetch firewood. To accelerate dissemination of messages on nutrition and catchment conservation the ERASP project used, among others, “Theatre for Development” as an innovative approach. The household approach was also used by the **WB SLM project** to realize gender equality at household level. In addition, the project’s completion report noted an increased number of female lead farmers who were providing extensions services to their followers.

The **IFAD ERASP project** conducted a gender analysis at project start-up which provided clear operational details, and the WB SLM project developed a gender and HIV/AIDs strategy to support the gender dimension in the project.

While reporting on gender results for the whole project, including the co-finance part, there is currently limited information on gender related focus and results in the GEF components of the **WB SRBMP and SVTP projects**.

Resilience

All GEF projects are in line with Malawi’s National Resilience Strategy 2018-2030 that builds among others on a transformed agricultural sector as an engine for food security and poverty reduction, scaled-up climate-resilient infrastructure and enhanced climate-adaptation capacity, expanded public, private and community partnerships to safeguard Malawi’s natural resource endowments and ecosystems, and strengthened women’s empowerment. The Strategy’s goals include the reduction of food and cash aid recipients because of flood and drought emergencies by 30 percent and to increase soil carbon by 80 percent in 2027.

GEF projects in Malawi reach from focusing on agricultural food security to a broader, integrated understanding of nature-based solutions to enhance household and environmental resilience. This included using different tools to assess resilience-oriented interventions and measure resilience in GEF projects. The early **WB SLM project** (GEF ID 3375) was mainly concerned with national food security and climate variability. The project helped with early warning systems and expanding risk management capacity of the Ministry of Agriculture. The **UNDP SLM project** (GEF ID 3376) intervened on a broader scale to build community resilience to adverse climate effects. It created sustainable food production systems

through land use management, adaptation, and flood control, introduced drought resistant crops (cassava, pigeon peas, and sweet potatoes), and developed alternative income generating activities such as fruit tree production integrated with overall re-afforestation programmes, fish farming, beekeeping, and chicken rearing. As already reported, the project did not manage to introduce crop insurance and green water credits as planned to support resilience.

The **IFAD ERASP project** (GEF ID 9138)—which has the word resilience in its title (ERASP: Enhancing the Resilience of Agro-ecological Systems Project)—emphasized household resilience to rainfall variability. It promoted crop diversification strategies, increased availability of nutritious foods, integrated crop livestock systems and alternative livelihoods such as beekeeping to generate nutrition and food security. It applied biodiversity principles and a high degree of genetic diversity as a main pillar through focus on local and indigenous varieties. In the context of the GEF Resilient Food Systems Program (previously FS-IAP) the project applied different tools to systematically measure, evaluate and document progress in improving ecosystem services and resilience and its linkages to increased food security: the Land Degradation Surveillance Framework (LDSF), the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR) for biodiversity planning and monitoring and Ex-ACT for carbon reductions. The **FAO**

landscapes and livelihoods project (GEF ID 10254) plans to deploy the *Self-evaluation and holistic assessment of climate resilience of farmers and pastoralists* (SHARP) tool, linked to the LDN conceptual framework, for measuring changes associated with resilience.

The **WB SRBMP project** (GEF ID 4625) applied a broader community-led landscape approach to watershed restoration to help build resilience to climate change at river basin scale, through integrated management of natural resources across different land uses and connecting them. There was evidence at completion that the project contributed to increasing flood resilience in the entire basin. The **WB SVTP** (GEF 9842) relied on sustainable NRM investments to mitigate climate risks, such as actions to address land degradation and protect upslope watersheds in conservation areas. It applied a structured process of stakeholder consultations to enhance resilience including civil society, private sector, and communities.

Private sector

As indicated by its full name¹⁸¹, the **UNDP SLM project** (GEF ID 3376) had as a major goal to leverage finance for SLM and sustainable forest management from the private sector and search for market-based solutions in sustainable charcoal production. Private sector and PPP solutions were also sought in operationalizing green water credits (GWS). As noted earlier in this report, the project indeed raised awareness among policy makers for sustainable charcoal production, mobilized charcoal makers and a private company that received a license, experimented with different kilns, and carried out a feasibility study. The quality of the study and associated experiments were good, but the project in the end failed to produce any concrete results of sustainable charcoal production and marketing, mainly due to political

¹⁸¹ GEF ID 3376: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin

resistance in the district. Interviews indicated that a stronger emphasis on operationalizing at least one pilot in the project area could have produced better results. Regarding green water credits, an NGO (CURE) played a pivotal role in coordinating GWCs and linking communities (as sellers of PES) and private sector entities as potential buyers of PES. Some steps were made in this direction, but the project ended before concrete results were achieved mainly due to contractual issues involving the NGO.

As far as other projects are concerned for the **WB SLM project** (GEF ID 3376) no private sector engagement was in the end reported although there had been plans for public-private (and public-NGO) partnerships in delivering agricultural services. For the **IFAD ERASP project** there were no plans to involve private sector apart from its IFAD co-financed part (which has not materialized so far). The **WB SVTP project** (GEF ID 9842) is currently working on arrangements for public-private partnerships in managing national parks and forest reserves especially in the context of tourism development.

Summary of emerging findings and preliminary conclusions

clxxix. EQ 1: To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

GEF projects in Malawi have been highly relevant to address the drivers of environmental degradation in Malawi's dryland areas. Most projects concentrated on the dry sub-humid or semi-arid Southern Shire River valley area which has the most serious degradation, deforestation and threats to a rich biodiversity, including wildlife, due to high population pressures and increasing droughts and floods because of climate change. At the same time the agricultural and socio-economic development potential is high, especially through well planned and managed irrigation and flood control. This potential was tapped through partnering with well-resourced co-financiers, the World Bank and IFAD. In most projects GEF integrated its environmental and socio-economic objectives in a broader watershed and livelihoods approach that reached beyond drylands themselves into more humid, upstream areas. Dryland environmental challenges cannot be addressed in dryland areas alone but depend on elevated parts of watersheds that are often less arid. GEF projects were well concentrated, complementary and balanced and did not have major gaps, especially seen in context with co-financed parts by the implementing agencies.

EQ 2: How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

GEF interventions were fully coherent and well linked with other Government and donor interventions. They contributed to policy coherence for Malawi's dryland areas. GEF interventions in Malawi's drylands took place in a policy and institutional environment that has been characterized by a high degree of vision, long-term political commitment to sustainable development and policies that mainstreamed environment and climate change into socio-economic development. The Government's commitment was demonstrated through setting

ambitious LDN targets in its National Forest and Landscape Restoration Strategy. Coherence was further supported by well institutionalized coordination, policy development and other arrangements that reach from the national level down to the districts. GEF projects were part of this structure and mechanisms that involve national and local stakeholders and contributed to them. GEF worked closely with domestic and international development partners and generated multiple synergies with co-financed baseline projects.

All GEF projects with drylands support in Malawi analyzed the policy context at design and aimed to influence policies through reviews and increasingly through inputs from project lessons and experiences. While the extent of specific policy engagement was less clear on SLM, with inputs mainly made through a review of policies, active policy dialogue has been strong on environmental and watershed considerations in irrigation and flood prevention planning. The GEF's place at the table changed the conversation on environmental protection, biodiversity and conservation in relevant sector ministries that were traditionally less attuned to such aspects. Over time, the GEF moved more towards generating bottom-up lessons and testing ways of operationalizing existing and pending legislation and policies, especially in the context of large-scale land-based investments, including land use regulations.

Two areas of policy incoherence and misaligned incentives continue to affect SLM and watershed management effectiveness in Malawi drylands despite significant interventions by GEF and others. Current public investments priorities and misaligned maize subsidies prevent many farmers from sufficiently investing in SLM and sustainable adoption of such practices with demonstrated positive long-term effects. Secondly, incomplete and incoherent implementation of the 2017 National Charcoal Strategy and realities on the ground not only undermine forest protection in Malawi but are likely to also have led to negative alternative livelihood effects for many poor Malawians.

- clxxx. EQ3: To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?
- clxxxi. GEF supported drylands projects in Malawi achieved significant environmental outcomes and socio-economic benefits that were often well and deliberately linked, while some opportunities were missed due to slow implementation and misaligned incentives. Positive environmental outcomes and benefits through reduced land degradation, sustainable forest and landscape management and biodiversity were often linked to socio-economic benefits including safer habitats through flood protection, sustainable irrigation, higher agricultural productivity and food security through SLM. All projects considered the socio-economic context of Malawi's farming communities and pursued socio-economic objectives either through establishing a close relationship between environmental and socio-economic goals, or through parallel socio-economic investments in co-financed projects. Several GEF projects delivered higher incomes for often poorer population groups and women from improved alternative livelihood activities especially in sustainable forest management, sometimes as incentives for upstream protection by non-beneficiaries of natural resources. Some opportunities for sustainable livelihood gains were missed or coming slowly as irrigation development

was delayed and misaligned incentives remained in place for SLM and sustainable charcoal production.

The analysis of long-term impact of one GEF project showed several sustainable environmental and socio-economic achievements. The project had positive medium- to long-term effects on assisted and natural regeneration of landscapes after completion, which also supported long-term livelihoods and income opportunities. Several groups and cooperatives expanded their activities, especially on beekeeping and fishing. The project also built a good foundation for others to expand their offers of crop insurance and to improve meteorological data collection and early warning systems.

Alignment with local and national structures and policies supported positive outcomes, but limited resources for scaling up reduced the long-term impact. The most important factors for sustained and expanded outcomes and impact were motivated community members, improved capacities of Government entities, and trusted technical experts and extension workers that addressed the real issues of low agriculture yields, flooding, and inadequate water for irrigation. Implementation through established village structures in alignment with traditional authorities was instrumental. The fact that most GEF projects were well aligned with central policies increased their legitimacy, the development of NRM management plans and by-laws and continued interventions after GEF project completion through other projects helped with progress and sustainability. A key challenge on the ground has been the lack of resources for scaling up SLM.

EQ4: Have natural resource governance been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

- clxxxii. Natural resource governance was an essential part of the design of all GEF drylands projects in Malawi, covering governance at national and local levels. Findings from this case study suggest that the GEF rightly has a strong focus on local governance, that there is still only limited awareness for the nexus between environmental, social and development objectives among many professionals, and that land use and enforcement of forestry rules do not yet receive the attention they deserve in natural resource governance.
- clxxxiii. At the local and watershed levels GEF drylands projects successfully embedded their activities in local Government institutions and arrangements, especially district level entities, well-established Village Natural Resource Management Committees and Water Catchment Management Committees. Projects significantly enhanced awareness, and the technical and institutional capacities of local authorities, extension workers and village natural resource managers. They helped develop community by-laws for NRM and strengthen their community-based enforcement. Institutional governance was supported through broader Shire River watershed planning frameworks and developing sub-basin catchment area management plans. All evidence suggests that these and other local and watershed level activities have already contributed significantly to post-completion results, governance, and sustainability.

Second, professionals and officials in more economic, development- oriented ministries and district functions still were often not aware of the importance of environmental and ecological factors for long-term socio-economic development. The environmental community in Malawi has been dominated by biologists and wildlife experts but counts few social scientists and economists. These professional biases lead to a neglect for acknowledging the socio-economic drivers of environmental degradation and the need for bringing about changes in perceptions, know-how and behavior among professionals, officials and farmers alike.

Third, GEF drylands projects in Malawi contributed in different ways to better land use and land security through community-based catchment area planning, co-management of designated wildlife reserves and other landscapes, and clarification of traditional land use claims. GEF project experiences showed that community management worked best when it went hand in hand with continued emphasis on enforcement. The necessary resources for enforcement still depended too often on project resources.

EQ5: To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

Gender was taken into consideration in Malawi drylands projects mainly through gender sensitive M&E, effective application of a Household Approach and lessening women's workload; the resilience concept and resilience assessment and measurement tools have been broadly applied, whereas most planned private sector support is still waiting for results.

Gender support included the engendering of M&E tools in all projects and disaggregated beneficiary reporting. Several projects applied the Household Approach to improve joint decision making, a fair division of labour, and more equal access to resources. In addition, gender aspects and women's and household's overall benefits improved through nutrition education, improved cook stoves and afforestation, which facilitated firewood collection.

The resilience concept has been broadly applied in GEF drylands projects in Malawi, reaching from agricultural food security focus, promotion of crop diversification and genetic diversity including local and indigenous varieties, to a broader, integrated understanding of nature-based, watershed-level solutions to enhance household and environmental resilience. Different tools were utilized to assess resilience options and measure resilience outcomes in Malawi's GEF drylands projects.

Major objectives in one of GEF project to leverage private sector finance for SLM and sustainable forest management through PPP and market-based solutions in sustainable charcoal production and operationalizing green water credits did not deliver the expected results. This was because conditions were complex, partly politized, and time, technical expertise and other resources were not sufficient. More recent projects have been making renewed efforts for PPP but without concrete results yet.

ANNEXES

Annex 1 – List of interviews

Table A.1 - Interviews conducted for the Malawi case study:

Name	Organization / Function	Interview Date
Mphatso Martha Kalemba	Ministry of Natural Resources and Climate Change. Environmental Affairs Department. Designated focal point for the SCCE Drylands evaluation	Feb. 16, 2023
Etta Mangisa	UNDP, Program Analyst. Former Project Coordinator for GEF project 3375	March 3, 2023
Victor Nyirongo	IFAD, ERASP Project Coordinator (GEF project 9138)	March 1, 2023
William Mitembe	Ministry of Natural Resources and Climate Change. Department of Forestry. Deputy Director. IFAD ERASP project (GEF 9138)	March 2023
Nyuma Mughogho	FAO Project Coordinator (GEF project 10254). Formerly Ministry of Environment and Forestry, Department of Forestry.	Feb. 27, 2023
Daulos D.C. Mauambeta	World Bank. SVTP Natural Resources Management Officer (GEF project 9842)	Feb. 23, 2023
Nicholas Stephen Zmijewski	World Bank. Wash. DC. Malawi Coordinator for Environmental Safeguards and Environmental Projects.	March 3, 2023
Titus Zulu	Ministry of Natural Resources and Climate Change. Department of Forestry. WB SVTP project (GEF 9842)	Feb. 24, 2023
Maurice Makuwila	Ministry of Natural Resources and Climate Change. Department of Fisheries, Deputy Director. WB SVTP project (GEF 9842)	March 2023

Field visits, April 10th – 15th 2023

UNDP SLM project (GEF ID 3376) – Balaka district

latitude	longitude	
-14.7711	35.1725	Mkweta village
-14.7831	35.1723	Maleta village forest area (VFA)
-14.8053	35.0969	Mussa VFA
-14.8059	35.0934	Saidi VFA
-14.8067	35.0867	Dailless VFA
-14.8453	35.1042	Mtongola Musi VFA
-14.8749	35.1564	Mwayi river line afforestation

IFAD PRIDE/ERASP project (GEF ID 9138) – Machinga district

-15.16630 35.40851 Lingoni community forest (Machinga)

Annex 2 – References

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- UNDP, Government of Malawi and GEF. 2016. Private Public Partnership for Sustainable Land Management in the Shire River Basin. Terminal Evaluation Report. Final version. 27 April 2016.
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- World Bank. 2017. Agriculture Sector Wide Approach Support Project. Implementation Completion and Results Report (ICRR). June 21, 2017. Agriculture Global Practice. Country Department – AFCE1. Africa Region. Washington D.C.
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Table A.1 - GEF drylands project districts in Malawi

Project	Coverage of regions, districts, and national parks
World Bank 3375, GEF-4	Country wide
UNDP 3376, GEF- 4	Southern Region: Mwanza, Neno, Balaka and Machinga districts
IFAD 9138 ERASP – FS-IAP, GEF-6	Southern Region: Machinga, Phalombe, Zomba, Balaka and Chirazulu districts. Plus some districts in other Regions.
[World Bank SRBMP / GEF project]	Southern Region: Ntcheu, Neno, Machinga, Zomba and Blantyre districts. Lengwe park (Chikwawa and Nsanje districts) and Liwonde park (Mangochi district). Some other districts in Southern Region that are directly or indirectly affected
World Bank 9842 SVTP-I, GEF-6	Southern Region (as above for SRBMP)
FAO 10254, SFM IP on Drylands Sustainable Landscapes, GEF-7	Balaka, Ntcheu and Mangochi (Southern Region) plus Districts in Northern Region

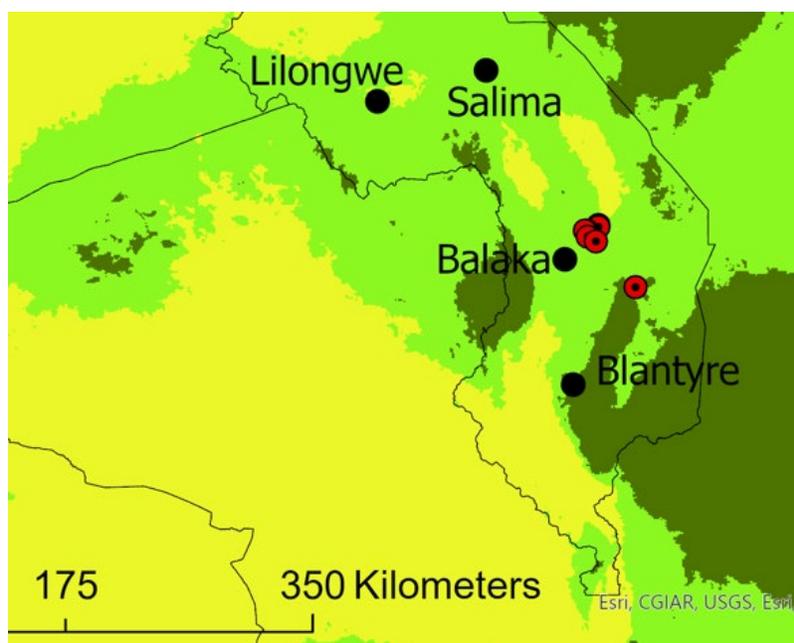
Figure A.1: Map of regions and districts in Malawi



Source: https://www.researchgate.net/figure/Map-of-Malawi-with-districts-and-administrative-zones_fig1_337760557/download

Figure A.2: World Bank Shire River Basin Management Program (SRBMP)

Figure A.3: Aridity zones in Southern Malawi (GEF/IEO)
 (Note: map does not show water bodies)



Source: GEF IEO GIS

Table A.3 – Malawi GEF projects drylands status (IEO classification)

GEF ID/ Agency	Project Name	Hyper-arid	Arid	Semi-arid	Dry sub-humid	Humid
3375 WB	SIP: Agriculture Sector Development Programme -Support to SLM (ADP-SLM)	-	-	17%	33%	50%
3376 UNDP	SIP: Private Public Sector Partnership on Capacity Building for SLM in the Shire River Basin	-	-	100%	-	-
9138 IFAD	Food-IAP: Enhancing the Resilience of Agro-Ecological Systems (ERASP)*	-	-	-	25%	75%

GEF ID/ Agency	Project Name	Hyper-arid	Arid	Semi-arid	Dry sub-humid	Humid
4625 WB	Shire River Basin Management Program (SRBMP)	-	-	Not available	Not available	-
9842 WB	Shire Valley Transformation Program (SVTP) Phase I	-	-	50%	-	50%
10254 FAO	Transforming landscapes and livelihoods: Restoration of Malawi's miombo and mopane woodlands for sustainable forest and biodiversity management	-	-	33%	67%	-

clxxxv. Source: GEF IEO analysis

clxxxvi. * Information not available as project was added after aridity assessment was made

Table A.4 - Malawi Institutional and Policy Framework and legal instruments for NRM

Theme	Responsible Agency *	Main Legislation
Environment	MoNREM ¹⁸²	National Environmental Policy (NEP) (2004); National Environmental Action Plan (NEAP); Environmental Management Act (EMA).
Climate Change	MoNREM	National Climate Change Policy (2012); National Climate Change Investment Plan (NCCIP 2013-2018); National Adaptation Programme of Action (NAPA); National Disaster Risk Management (NDRM) Policy; Updated Nationally Determined Contributions (2021)
Biodiversity, Wildlife & Natural Resources	MoNREM	National Biodiversity Strategy and Action Plan (NBSAP) II 2015-2025; Wildlife Policy of 2000; National Parks and Wildlife Act (1992); National Parks and Wildlife Policy 2000.
Forestry	MoNREM	National Forest Policy (2016); Forestry Act (1997); National Forest Landscape Restoration Strategy (2017); National Charcoal Strategy (2017-2027); National Cookstove Steering Committee Strategy 2018 – 2020.
Energy	MoNREM	National Energy Policy (2003); Energy Regulation Act (2004); Rural Electrification Act (2004); Electricity Act (2004); Malawi Renewable Energy Strategy; Sustainable Energy for All Action Agenda for Malawi.
Growth and Development	MoFEPD ¹⁸³	MGDS III (2017–2020)
	OPC ¹⁸⁴	National resilience Strategy (2018-2030); Vision 2020
Agriculture	MoAIWD ¹⁸⁵	National Agriculture Policy (NAP); National Agricultural Investment Plan (NAIP) covering a five-year period (FY2017/ 2018- FY2022/202); Agriculture Sector Food and Nutrition Strategy ASFNS (2017-2021); Water Resources Act 2013; Agricultural Extension and Advisory Services Strategy; Agricultural Risk Management Strategy; Contract Farming Strategy; Crop Production Policy; Farmer Organisation Development Strategy (2016) ; Fertiliser Strategy (2007) and National Fertilizer Policy; National Livestock policy; National Land Resources Management Policy and Strategy (2000); Food Security Policy (August 2006); National Irrigation Policy; Seed Policy; Special Crops Act (1972).

¹⁸² Ministry of Natural resources, Energy and Mining.

¹⁸³ Minister of Finance, Economic Planning and Development.

¹⁸⁴ Office of the President and Cabinet.

¹⁸⁵ Ministry of Agriculture, Irrigation and Water Development.

Nutrition	MoHP ¹⁸⁶	National Nutrition Policy NNP (2016-2020); Multi-sectoral Nutrition Policy and Strategic Plan MSNPSP (2017-2021).
Land Tenure	MoLHUD ¹⁸⁷	National Land Policy (2016); The Land Bill, 2016; Customary Land Bill, 2016; Physical Planning Bill, 2016; Land Survey Bill, 2016; Registered Land (Amendment) Bill, 2016; Land Acquisitions (Amendment) Bill, 2016; Local Government (Amendment) Bill, 2016; Malawi Housing Corporation (Amendment) Bill, 2016.
De-centralization	MoLGRD ¹⁸⁸	Decentralization Policy (1998) and its implementation tool (Integrated Rural Development Strategy)
Socio-economic	MoFEP&D	Malawi National Social Support Program (MNSSP); National Gender Policy (2015); National Youth Policy (2013); Micro, Small and Medium Enterprise (MSME Policy, 2012).
Trade & Private Sector Development	MoITT ¹⁸⁹	Joint Sector Plan (2016); National Trade Policy (2017-2021); National Tourism Policy (2017), National Culture Policy (2014); National Export Strategy (2013-2018); National Industrial Policy (2017-2021).

Source: FAO. [no date]. FAO-GEF Project Document GEF ID 10254. Transforming landscapes and livelihoods: Restoration of Malawi's miombo and mopane woodlands for sustainable forest and biodiversity management.

* The names and specific responsibilities of these Ministries may have changed as of 2023 due to Government reorganization. For instance, MoNREM no longer exists and many of its former NRM functions were transferred to the new Ministry of Forestry and Natural Resources (MFNR).

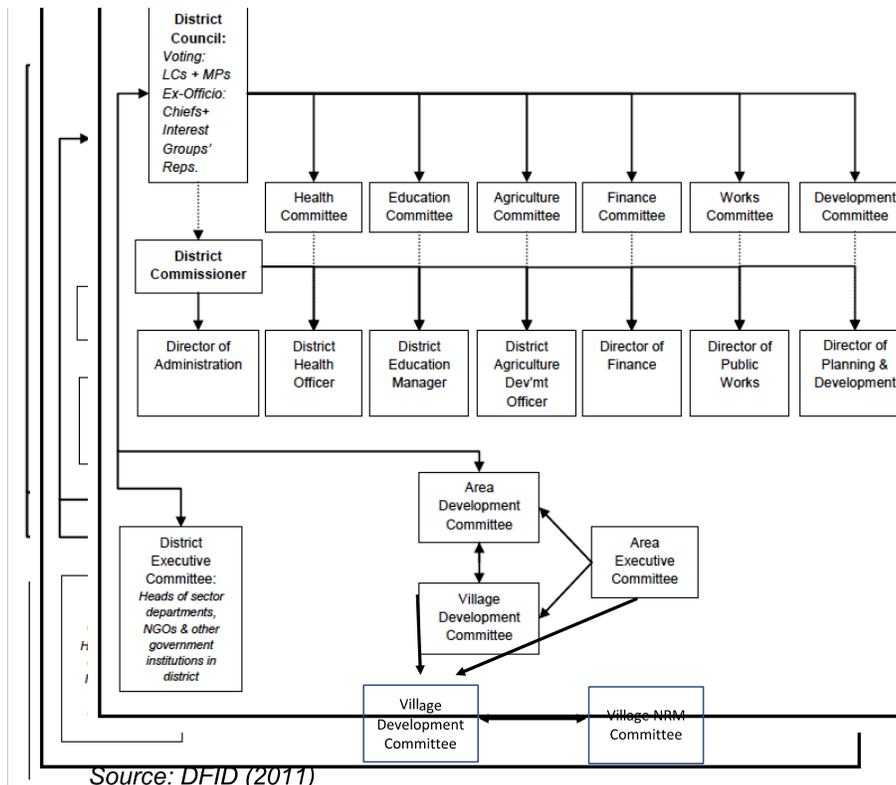
¹⁸⁶ Ministry of Health and Population of Malawi.

¹⁸⁷ Ministry of Land, Housing and Urban Development.

¹⁸⁸ Ministry of Local Government and Rural Development.

¹⁸⁹ Minister of Industry, Trade and Tourism.

Figure A.4 - Malawi Decentralized Local Government System



Source: FAO. [no date]. FAO-GEF Project Document GEF ID 10254. Transforming landscapes and livelihoods: Restoration of Malawi's miombo and mopane woodlands for sustainable forest and biodiversity management.

The institutional set-up of the local government system comprises the local governments and its committees at the district level:

- **District Council** to make decisions on local governance, planning and development at the district level, and consolidation of VLAPs into District Development Plans;
- **Council Directorates on sectoral issues** (e.g., D. of Agriculture, Environmental Affairs and Natural resources; D. of Public Works; D. of Planning and Development; D. of Education, Youth and Sports; D. of Health and Social Services);
- **District Executive Committee (DEC)** providing technical and advisory support to the Council, training to the members of the VDC/AED/ADC, coordination of district policies and activities, among other issues. It is a key decision-making technical advisory body with sectoral sub-

committees which facilitates the process of district development planning and implementation, including heads of the devolved sector directorates mentioned above, NGOs operating in the respective districts and traditional leaders.

- **Area Development Committees (ADC)** representing all the VDCs in Traditional Authority (TA) (first sub-division level under the District) and involve in priority setting, community mobilization, project formulation, supervision, M&E;
- **Area Executive Committee (AEC)** responsible for advising the ADC on all aspects of development for the community within a TA area, project identification and preparation of project proposals for community projects, M&E.
- **Village Development Committees (VDC)** involved in community priority setting, mobilization, support and M&E, and the formulation of Village Action Plans (VAPs) which set key priority needs from the village, aligned to the national priorities outlined in the Malawi Growth and Development Strategy (MGDS).
- **Village Natural Resources Management Committees (VNRMCs)** is key to achieving and operationalizing land restoration, with mandate to restore degraded land and other key natural resources management such as forest management, protection of catchments and fragile areas, and soil and water conservation. They play an advisory role to the VDC and participate in the development of Village Level Action Plans.

Table A.5 - SLM related budgets of projects which were considered as co-funding for the UNDP SLM project (GEF ID 3376)

Project / Donor	Budget for SLM-related activities
SRBMP (SLM activities) 2013 - 2018	US\$ 63,860,000
COVAMS II 2012 - 2017	JPY 500,000,000 (US\$ 4,061,079)
MCA 2013 - 2018	US\$ 4,000,000
PERFORM 2014 - 2019	US\$ 8,000,000
DFID 2011 - 2016	UK£ 5,000,000 (US\$ 7,555,500)
UNDP (PDRP) 2015 - 2016	US\$ 1,000,000
GCCA programme (EU / FAO) 2015 - 2020	EU€ 8,000,000 (US\$ 8,701,610)

Source: Terminal Evaluation GEF ID 3376

Table A.6 – GEF Terminal Evaluation and GEF IEO Ratings:

Malawi UNDP SLM project (GEF ID 3376)

	Terminal evaluation rating	Revised rating GEF IEO APR 2016
Relevance	HS	S*
Effectiveness	MS	MS
Overall project outcomes	S	MS
Outcome 1 - Policy support	MS	MS
Outcome 2 - PPP / Charcoal	MS	MS
Outcome 3 - Crop insurance	U	U
Outcome 4 - K&L	HS	S
Efficiency	S	MS
Sustainability	ML	MU
Financial	ML	MU
Socio political sustainability	ML	MU
Institutional framework/	ML	ML
Environmental sustainability	ML	N/A
Quality of project implementation	MS	MS
M&E at design	MS	MS
M&E at implementation	MS	MU

*Red font indicates that IEO APR and Terminal Evaluation ratings differ

Annex 4 – Coherence

Coherence of environmental and climate change policies in Malawi

Malawi has a full suite of policies in place to address the country’s economic, environmental and climate challenges. Malawi’s institutional and policy framework for natural resources management dates back over 20 years, has been regularly updated and is characterized by an elaborate and diverse set of policies, legal instruments, and institutional arrangements.¹⁹⁰ Environment and climate change have been well mainstreamed in national policies and strategies in *Malawi’s Vision (Malawi 2063) and the Malawi Growth and Development Strategy (MGDS III, 2017-2022)*. The MGDS III lists environmental and climate-risk management as one of its five key priority areas. One of the four programmes of the *National Agricultural Investment Plan (NAIP)* directly aims to strengthen resilience of livelihoods and natural resource-based agriculture and supports these goals indirectly through the three other NAIP programmes to improve policy and regulatory environment, stakeholder coordination and accountability; generate a more diversified and productive agriculture sector; and enhance access to markets, finance and value addition. The *Nationally Determined Contribution (NDC 2021)* outlines the Government’s planned mitigation and adaptation priorities in addressing the Paris Agreement, guided by United Nations Framework Convention on Climate Change (UNFCCC) principles. Apart from these overarching policies and plans several other, relatively recent sector and sub-sector policies and strategies exist on Forest Landscape Restoration (2017), Land Degradation Neutrality (2017), National Forestry (2016), National Resilience (2018-2030) and National Charcoal (2017-2027). The National Land Policy and several Bills from 2016 deal with specific aspects of land use and planning. There is also a Malawi National Biodiversity Strategy II for the period 2015-2025.

- clxxxvii. The Government of Malawi demonstrated its commitment to addressing NRM and climate change challenges through joining several related processes, submitting its NDCs in 2021 and setting ambitious LDN targets. Malawi participates in processes such as the AFR100/Bonn Challenge on reversing land degradation and the Pan-African Action Agenda on Ecosystem Restoration for Increased Resilience.¹⁹¹ Malawi’s NDC 2021 report articulated areas of priority for climate change management through both mitigation and adaptation measures, developed through a consultative process. The Ministry of Forestry and Natural Resources through the Environmental Affairs Department, in its capacity as the UNFCCC Focal Point for Malawi, coordinates the implementation of the NDC involving NGOs, Civil Society, the Private Sector, Academia and the public.¹⁹²

For the Government, the importance of land-based resources to Malawi cannot be overemphasized.¹⁹³ The GoM has set a target of achieving land degradation neutrality (LDN) by 2030 through restoring 4.5 million hectares of degraded land by 2030 (out of a total land area of

¹⁹⁰ See Annex 3, Table A.4 for a full a list of main legislation by sector and NRM themes.

¹⁹¹ GEF ID 10254 FAO design report

¹⁹² NDC 2021 report

¹⁹³ Government of Malawi. 2018. National Commitment to Achieve Land Degradation Neutrality.

9.4 million hectares) and through investing at scale in reversing landscape degradation and protecting the most important watersheds.

clxxxviii. Coherence is further supported by institutionalized coordination and other arrangements that reach from the national level down to the districts. They do not, however, prevent vertical and horizontal incoherence in practice. At national level coherence is supported by policy planning processes, cross-sectoral coordination of ministries and public agencies, and alignment of budgets, including donor support and activities (Box A.1). SCCE interviews indicated challenges in practice, however, especially at the decentralized local level, affecting the coherent implementation of national policies and the coordination of different partners and sectors through local governments (vertical coherence). Substantial differences in capacities and commitments among districts were reported, such as in holding regular coordination meetings by development partners and avoiding duplication. At national level, policies are not always clear in their priorities, especially on conflicting objectives, such as among agriculture, water development and energy sector priorities, and natural resources and forestry, such as on reforestation preferences. Policies also tend to be related to short-term livelihood and food security versus long-term NRM and sustainability objectives. According to the World Bank's Malawi Country Environmental Analysis (2019), Forest and Land Restoration also does not yet have the highest priority for the Government. There is a lack of appropriate legal provisions, investment funding, incentives and compliance mechanisms at different levels, missing also a clear role for traditional authorities to co-deliver an integrated NRM strategy. This has also been leading to some misaligned incentives in NRM management.

Box A.1 – Policy and coordination frameworks for development, food security and climate change in Malawi

National policy and coordination framework

The Ministry responsible for National Planning and Development ensures that all Ministries, Departments and Agencies (MDA) align their sectoral plans, activities, and budgets to the development strategy (MGDS III). The Malawi Government put in place robust national planning processes involving pillar, enabler, sector and district level coordination structures overseen by the National Planning Commission (NPC) for medium to long term plans and strategies. Sector working groups (SWGs) track the implementation of sector priorities aligned with the goals of the MGDS III and the National Vision (Malawi 2063). The Government is fully committed to improve donor coordination and alignment of donor support and activities through the development and adherence to Development Assistance Strategies (DAS).

In the area of environmental sustainability an Enabler Coordination Group on Environmental Sustainability (ECGES), co-chaired by MOEPD&PSR and the Ministry of Forestry and Natural Resources (MOFNR), brings together all relevant stakeholders (state and non-state) falling under this topic. The ECGES work closely with the National Steering Committee on Climate Change (NSCCC) and the joint Technical Committee on Climate Change and Disaster Risk Management (TCCC&DRM) in defining multi-year priorities and resource requirements. Several Expert Working Groups (EWGs) provide specialized technical guidance. Within this framework, the Environmental Affairs Department (EAD) of MOFNR formulates and oversees climate policy development.

Local government and decentralization framework

GoM has increased intergovernmental transfers and initiating the devolution of human resources since the local government (LG) elections in 2014. The central government supports LG with policy guidance, financial and technical assistance. LG's role is to re-enforce national policies through local programmes and activities thereby ensuring subsidiarity and complementarity to the central government.

Institutionally, the LG system comprises the key local government institutions and their committees at the district level, including the District Council; Council sectoral directorates (including one on environmental affairs and natural resources); the District Executive Committee (DEC), a key decision-making technical advisory body with sectoral sub-committees; the Area Development Committees (ADC) and Village Development Committees (VDC).

Sources: MDGS III; Nationally Determined Contributions 2021

Policy coherence

Two areas of policy incoherence and misaligned incentives affected SLM and watershed management effectiveness in Malawi drylands: the current focus of agricultural subsidies on intensive maize production and the implementation of the 2017 National Charcoal Strategy.

Several reports have been pointing to the detrimental effects of existing subsidies under the Farm Input Subsidy Program (FISP) for SLM adoption (IFPRI 2015¹⁹⁴, World Bank 2019¹⁹⁵, FAO 2023¹⁹⁶). Subsidies provide mainly hybrid seeds and fertilizer for intensive maize production which works in the opposite direction of effective SLM, by constraining crop diversification, encouraging maize cropping on steep slopes and other marginal areas, and crowding out other spending priorities, for instance on conservation agriculture (CA) and extension, water storage and irrigation (World Bank 2019). Current subsidies are especially detrimental in the drier southern parts of the country, including the Shire Valley, which have more favorable conditions for drought resistant crop varieties such as sorghum and pigeon peas (FAO 2023). While current input subsidies may increase the adoption of intercropping and residue mulching, they often crowd out adoption of zero tillage and other practices associated with CA, leading to partial and inefficient compliance with SLM/CA methods (IFPRI 2015). Further, exposure to various risks, such as flooding and insect infestations, often constrain adoption of SLM, unless they are addressed by farmers, agricultural and other services.

Current public investments and misaligned maize subsidies do not incentivize farmers to pay for up-front SLM costs, although benefits could accrue relatively rapidly with on-farm investments, often within one or two years. The World Bank 2019 Country Environmental Analysis indicates relatively low levels of full adoption and high levels of partial and dis-adoption of CA, with reported dis-adoption in Malawi going as high as 70 per cent in some reports (FAO 2023). Reasons were limited access to quality seeds of suitable crop varieties, finance for equipment and alternative inputs and lack of technical support. Adoption of SLM practices and technologies is currently not financially attractive for many farmers, including early returns (World Bank 2019).

The 2017 National Charcoal Strategy and the 2019 Amended Forestry Act were a step in the right direction to rationalize charcoal production and energy use in Malawi, but their implementation was weak as the uptake of charcoal licenses, concessions and the use of alternative energy sources remained low. The Strategy includes a proposal to develop legal and sustainable charcoal value chains, apart from promoting fuel switching to cleaner and alternative fuels, such as LPG, efficient cook stoves and strengthened law enforcement. This shift in policy offered, for the first time, an opportunity to legalize the charcoal value chain and move toward more sustainable charcoal production. Malawi produces an estimated 6 million bags of charcoal annually, and 80 percent of charcoal producers are rural based and operate on

¹⁹⁴ <https://www.ifpri.org/publication/heterogeneous-preferences-and-effects-incentives-promoting-conservation-agriculture>

iv. ¹⁹⁵ World Bank Malawi Country Environmental Analysis 2019

¹⁹⁶ GEF ID 10254 - FAO project design document

a small-scale (World Bank 2019). However, charcoal production in Malawi remained governed by punitive policies that have effectively criminalized the activity without a license. The process and costs involved in getting a license meant this was an unrealistic option for most small-scale charcoal producers. Barriers to securing licenses for charcoal production and marketing were still too high and there were too few efforts into incentivizing sustainable practices, for instance, through planting and tree stewardship grants or supporting forest co-management efforts (World Bank 2019). By 2023 only 11 producers who owned woodlands had received licenses since 2019, according to the Forest Department.¹⁹⁷ Interviews during this evaluation suggested that the adoption of alternative energy sources in rural areas has been proceeding slowly, due to their higher costs and perceived risks.

The lack of effective implementation of the Strategy has been threatening a crucial safety net and alternative income opportunity for smallholders, forcing many of them into poverty.¹⁹⁸ Research by Southampton University presented in 2017 showed the importance of charcoal production for people's livelihoods and for generating incomes for millions.¹⁹⁹ It also noted that positive aspects of charcoal production had largely been discounted by policy makers, which led to regulatory approaches that not only had negative impact on livelihoods but were also counterproductive in terms of environmental protection. Licensing and the costs of licenses led to driving those that could not get a license underground; they were not deterred by punishment and confiscation of equipment but saw the need to cut down more trees to recover their losses. Worst, there was no incentive to invest in sustainable forest management and sustainable charcoal production. **In sum, vertical incoherence of charcoal policies, implementation and realities on the ground not only threatens to undermine forest protection in Malawi but most likely also has been leading to negative alternative livelihood effects for many poor Malawians.**

Based on above information and analysis the Malawi SCCE evaluation team rated the performance of coherence for Malawi's environmental and climate change policies along the indicators proposed by the 2023 STAP Report on Policy Coherence in the GEF. Ratings were done according to the common 6-point ratings scale used in IEO evaluations of development interventions. The long-term vision of GoM was rated highly satisfactory as policies clearly were formulated with an intergenerational vision and a balanced approach for development, environment, and climate change (Figure 2). Political commitment and formal mechanisms for regional and local involvement as well as stakeholder participation exist at different government levels, and they were rated satisfactory.²⁰⁰ At the same time policy coordination, including mechanisms for resolving conflicts of interests, objectives and tradeoffs, analysis of

¹⁹⁷ <https://news.mijmw.com/eleven-people-attain-charcoal-production-licenses/>

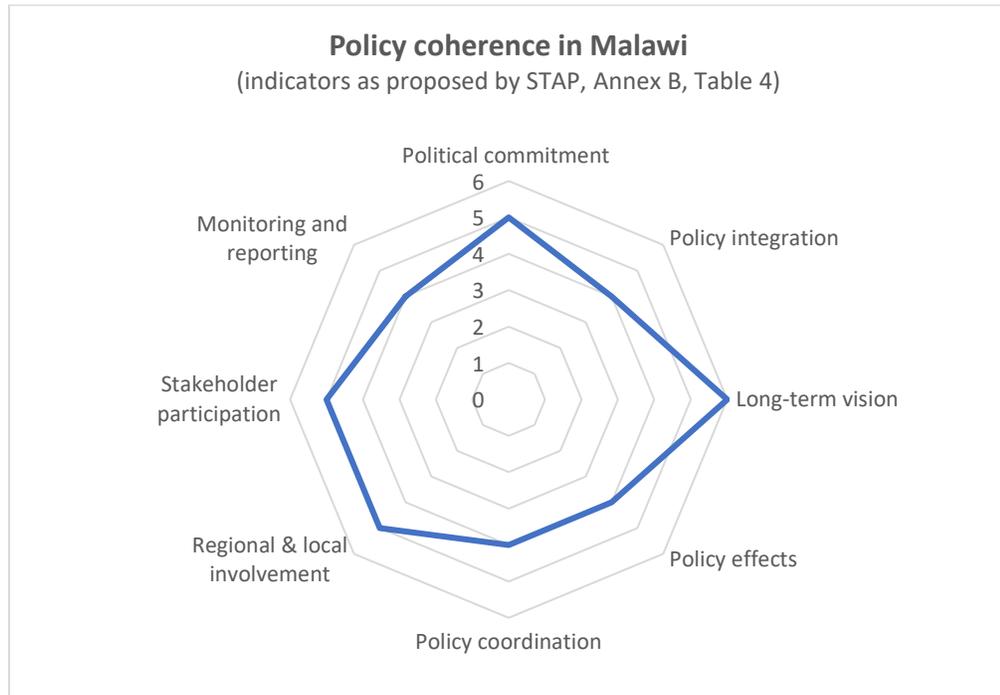
¹⁹⁸ <https://mwnation.com/malawis-charcoal-dilemma/>

¹⁹⁹ Based on research by Dr. Harriet Smith of the University of Southampton (published in June 2017) <https://www.southampton.ac.uk/engineering/news/2017/05/charcoal-burning-malawi.page>

²⁰⁰ This rating is mainly based on overall Government commitment and available structures and formal processes for participation and involvement. Differences in commitment to environmental and climate change among different Government and other actors and actual decision-making power of stakeholders in participation and involvement are not included.

policy effects and the feedback from monitoring and reporting were rated only moderately satisfactory since existing institutions and mechanisms were not well utilized for horizontal and vertical policy coherence.

Figure A.5 – Coherence of environmental and climate change policies in Malawi



Introduction

- clxxxix. This Niger Case Study is part of the Strategic Country Cluster Evaluation (SCCE): Global Environment Facility (GEF) Support to Drylands Countries. Case studies are a main component of the SCCE to enable in-depth exploration of the factors driving performance and sustainability of drylands-related interventions. Case studies focus on the two overarching evaluation objectives:
- i. assessing the relevance and coherence of GEF investments in dryland countries, and
 - ii. assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.
- cx. Niger was one of six case study countries chosen for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country.

Methodology

- cxci. The Niger Case Study built on analyses conducted in-house by the GEF IEO before the mission in the country. An evaluation team undertook a mission to Niger from March 13 – 21, 2023. The mission was led by an international and a national consultant. The case study used a mixed methods approach, with desk reviews of project and country documents and interviews with representatives of the Government of Niger, implementing agencies, project staff and external stakeholders. Data from geospatial analysis was reviewed during the mission, with the goal of facilitating discussion on factors that contributed to observed changes. Interviews were conducted at the central level in the capital Niamey, and project beneficiaries were also interviewed in several sites. The mission visited six field sites of UNDP and IFAD projects in the Maradi, Zinder and Diffa regions of Niger, all of which were classified as arid regions.²⁰¹
- cxcii. The Niger case study covered 12 GEF projects, seven of which are closed, four ongoing and one CEO endorsed (Table 1). Four of these projects are regional ones. The projects analyzed in this report included three projects that were executed almost in parallel between 2008 and 2016 and were linked under the GEF Strategic Investment Program (SIP)²⁰²: GEF IDs 3381 (UNDP), 3382 (World Bank) and 3383 (IFAD). All had terminal evaluations. The ongoing IFAD Family Farming Development Programme Program (ProDAF) project (GEF ID 9136) succeeded GEF ID 3383 (IFAD) and was also included. Another completed World Bank project with a terminal evaluation (GEF ID 5252) was

²⁰¹ The aridity index is a measure of the ratio between average annual precipitation and total annual potential evapotranspiration. ([Joint Research Center, European Commission, 2019](#)). See also GEF 2022b Table 1 for Global figures for the four types of drylands

²⁰² Strategic Investment Program (SIP) for SLM in Sub-Saharan Africa.

included for light analysis. GEF ID 5252 directly succeeded GEF ID 3382, as part of a third phase of the World Bank Community Action Program (CAP). Field visits took place to the UNDP and IFAD implemented projects. Two projects by UNEP (GEF ID 9405 in Northern Niger) and a regional project (GEF ID 9825) that were recently launched in 2020 and 2019, respectively, provided some additional insights.

- cxci. GEF also supported another large World Bank implemented and co-financed project on flood protection with contributions on biological riverbank protection and land recovery in disaster areas (GEF ID 5436), but the evaluation team found limited information in available documentation.²⁰³ The remaining five projects were only lightly covered as implementation information and data were insufficient. There was no implementation information (no PIR) for the completed regional project (GEF ID 3872) on monitoring carbon, environmental and socio-economic co-benefits in Sub-Saharan Africa. Among ongoing projects, very limited information was available for two ongoing AfDB projects, a regional one (GEF ID 5487) and a Niger child project of a transboundary parent project (GEF ID 9497). No progress or implementation reports were available. The AfDB office in Niamey did not have information about these GEF projects, and the evaluation mission obtained no response from contacted officers at AfDB headquarters in Abidjan. Staff from a nearly completed regional project on pesticide management and disposal were interviewed in Niamey but the project had only limited relevance for the drylands themes of this evaluation (GEF ID 4740 (FAO)).

Table 1 – Niger GEF projects approved 2008-2023 (Analysis focused on gray shaded projects)

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co- finance (US\$m)	Notes
3381 UNDP	SIP: Oasis Micro-Basin Sand Invasion Control in the Gouré and Maine Regions (PLECO)	GEF4 2010-15	LD	Closed (TE positive)	2.0	13.3	Part of long-running UNDP oasis support Zinder/Gouré, Diffa
3382 World Bank	SIP: Community Driven SLM for Environmental and Food Security (CAP-2)	GEF4 2008-13	LD	Closed (TE neutral; ICCR*** satisf.)	4.7	40.3	Part of long-running Community Action Program (CAP2) country wide

²⁰³ The mission tried to contact staff at the local World Bank office during the mission. This was not possible since the World Bank country office in Niamey was closed due to renovation. All staff are working home-based. It was not possible during the mission to obtain information from GEF Focal Point or WB office who was responsible for this project and how to contact them.

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co- finance (US\$m)	Notes
3383 IFAD	SIP: Agricultural and Rural Rehabilitation and Development Initiative ARDDI / PASADEM*	GEF4 2012-16	LD	Closed (TE positive)	4.2	11.9	Part of long-running IFAD projects in South-Central Niger
3872 World Bank regional	SIP: Monitoring Carbon and Environmental and Socio-Economic Co-Benefits of BioCF Projects in SSA	GEF4 (2008-12 indicative PIF)	LD	Closed	0.9	10.4	Niger and Madagascar – limited information available
4740 FAO regional	Disposal of Obsolete Pesticides including POPs and Strengthening Pesticide Management in CILSS Member States	GEF5 2015-23	POPs	Closed	8.2	25.3	Regional team was interviewed in Niamey but low relevance for SCCE
5252 World Bank	Third Phase of the Community Action Program (CAP-3)	GEF5 2013-17	MFA	Closed (ICCR satisf.)	4.9	43.7	World Bank Community Action Program (CAP 3) PIR of 2015 and 2016 available, but no GEF specific information
5436 World Bank	Disaster Risk Management and Urban Development Project	GEF5 2013-21	CC	Closed (ICCR satisf.)	7.3	100.0	No GEF documents from design available. No discernible GEF contribution from World Bank PIR.
5487 AfDB regional	Integrated Development for Increased Rural Climate Resilience in the Niger Basin	GEF5 2019-25	MFA	Ongoing	13.1	61.0	No PIR available. AfDB was contacted but did not respond.
9136 IFAD	Niger: Food-IAP: Family Farming Development Programme (ProDAF)	GEF6 2016-23	MFA	Ongoing	8.3	60.3	Successor project to IFAD/GEF 3383 (above)
9405 UNEP	Integrated Management of Oasis Ecosystems of Northern Niger (IMOÉ -NN)	GEF6 2020 -24	MFA	Ongoing	5.0	21.1	Recent project, PIR 2021 is available. Agadez

GEF ID/ Agency	Project Name	Phase/ period	Focal Area	Project Status	GEF Grant (US\$m)	Co- finance (US\$m)	Notes
9497 AfDB	Improving Sustainable Management of Natural Resources in Niger's Diffa Region	GEF5 (2014-21 indicative)	MFA	Ongoing	3.6	20.7	Project is child project of the Lake Chad Basin Regional Program (LCB-NREE). No PIRs. Diffa region.
9825 UNEP regional	Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries	GEF6 2019-22	LD	Ongoing	1.1	12.2	Relatively recent project; PIR 2021 is available.
10420 UNEP/ IFAD	PROSAP **	GEF-7 (2020-23 indicative)		CEO- endorsed			Submitted in 2019 Dallol/Bosso Wildlife habitat protection

* Projet d'Appui à la Sécurité Alimentaire et au Développement dans la Région de Maradi

** Promoting Sustainable Agricultural Production and Conservation of Key Biodiversity Species through Land Restoration and Efficient Use of Ecosystems in the Dallol Bosso and Surrounding Areas (PROSAP/COKEBIOS)

*** [World Bank] Implementation Completion and Results Report

TECHNICAL DOCUMENT 10 - NIGER CASE STUDY REPORT

Strategic Country Cluster Evaluation (SCCE):

GEF Support to Dryland Countries

Niger Case Study Report



Green wall (fixed land dunes above) and beneficiary vegetable gardens in Niger's PLECO oasis project

(Source: Photos taken by Mission team, with consent)

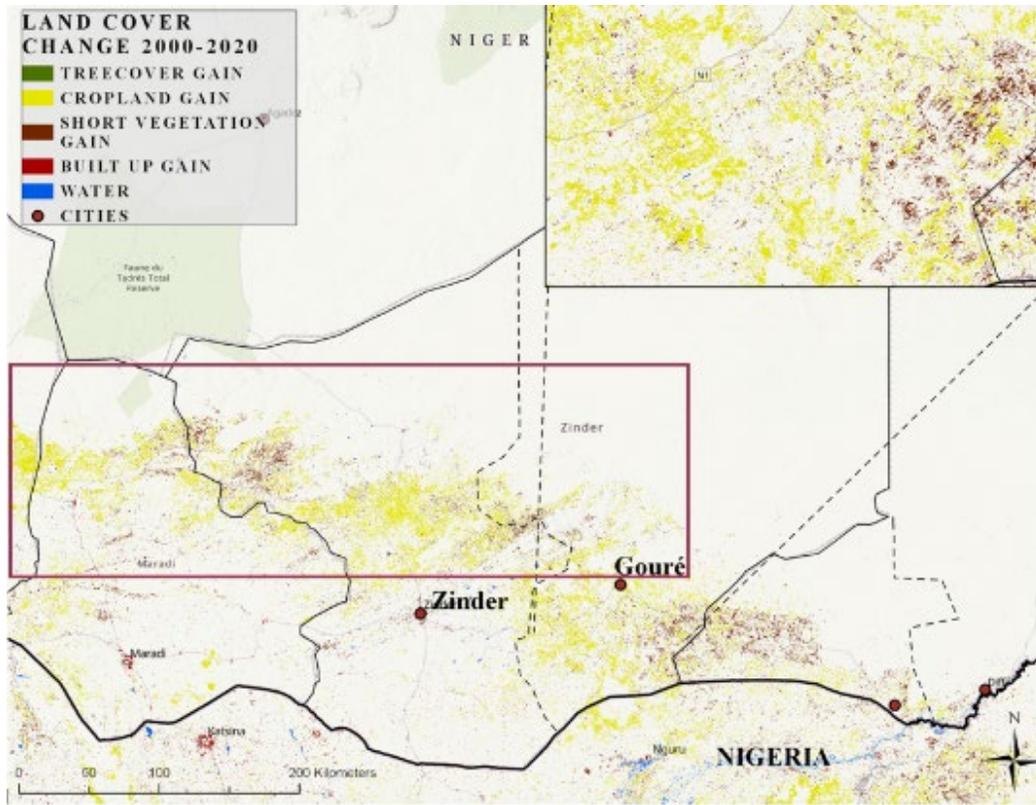
Findings

2.1 Relevance

- cxciv. Almost all of Niger's surface area consists of arid and hyper-arid drylands. The country faces daunting environmental, climatic and socio-economic challenges. Agriculture concentrates in the country's Sahelian zone which covers 10 percent of its surface in the South where most of the population lives. The hyper-arid Saharan zone in the North depends almost exclusively on ground water resources in oases (77 per cent of surface). Pastoralism dominates the intermediate Sahel-Saharan zone (12 percent of the surface). Environmental challenges in GEF projects range from severe land degradation combined with a lack of land registration, desertification and unreliable rainfalls (droughts), food and nutrition insecurity, deforestation and natural disasters (floods), to pollution and lack of recycling.²⁰⁴ The pressures on natural resources are high, particularly on lands. As desertification pushes South and land degradation increases, people are moving North towards lands that are more fragile and have competition between agriculturalists and traditional, often nomadic pastoralists. The search for arable lands is high as the local population is growing rapidly, and many Nigeriens are re-migrating from Nigeria to Niger due to security and economic conditions in Nigeria. Alternative income opportunities are scarce. The Northern belt of additional lands that have been put under cropping in the past 20 years is visible on the map and poses environmental and social challenges, such as potential land conflicts with pastoralists (Figure 1).

Figure 1 – Increased croplands in the northern belt of Maradi and Zinder regions

²⁰⁴ Source : Niger GEF projects; *Présidence de la République du Niger. 2021. Plan d'Action 2021-2025 de l'Initiative 3N "Les Nigériens Nourrissent les Nigériens"*; and *Républic du Niger, GCF and UNDP. 2022. Plan National d'adaptation aux changement climatiques.*



Source: GEF IEO GIS unit

At the same time many parts of the country have sufficient unutilized renewable and non-renewable water resources that could be tapped for human, agricultural or other use, such as for small-scale irrigation to increase production and employment opportunities in agriculture and beyond.²⁰⁵

The relevance of the GEF Niger project portfolio has been high. Several GEF projects adopted programmatic approaches that addressed Niger’s challenges and were well-aligned with country and GEF priorities. Projects evolved over time from strong support to address land degradation towards more integrated, multi-focal and multi-level approaches. The GEF country portfolio over the past 15 years concentrated strongly on reversing land degradation through four early projects (GEF IDs 3381, 3382, 3383 and 3872), motivated by the GEF Strategic Investment Program (SIP) for soil and land management (SLM) in Sub-Saharan Africa at the time. The SIP aimed to optimize natural resource use at landscape level, assisted by knowledge, analytical and policy support through the TerrAfrica program strategic partnerships.²⁰⁶ Water was added as a priority in the following years, through World Bank, IFAD, UNEP, and AfDB projects. With the emergence of impact programs in the GEF, the Niger ProDAF project (9138) became part of the pioneering Resilient Food Systems Integrated Approach Pilot (RFS-IAP). This further expanded GEF activities to markets and multi-level governance approaches. Although land use and land degradation are still at the core of projects, including in the context of the Great Green Wall Initiative²⁰⁷, other focal areas are slowly gaining ground, especially biodiversity, such as in GEF IDs 9405 and 10420. The latest IFAD project in Niger that is under consideration for GEF funding is expected to scale its operations to the Northern, more pastoralist areas (Annex Figure A.3).²⁰⁸

All these projects had significant linkages between environmental and socio-economic activities that further increased in recent years. During the evaluation mission, interviewees credited the GEF with positive contributions in promoting the positively correlated nexus of environmental protection, natural resource restoration and socio-economic development in strategies and operations of agriculture, environmental and forestry government departments. The relevance of several GEF projects in Niger (especially of the Oasis Micro-Basin Sand Invasion Control in the Goure and Maine Regions (PLECO), GEF ID 3381 and the Family Farming Development Programme (ProDAF), GEF ID 9138) was also demonstrated by their inclusion as priority models

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- v. ²⁰⁵ Source: Source: République du Niger, GCF and UNDP. 2022. Plan National d’adaptation aux changements climatiques. Conseil National de l’Environnement pour un Développement Durable. Secrétariat Exécutif. Niamey, Niger. Chapter 3.4.4 (p.26)

²⁰⁶ FAO, World Bank and NEPAD 2016 <https://www.fao.org/3/i5621e/i5621e.pdf>

²⁰⁷ Niger is part of the regional Great Green Wall initiative that goes across the country in the regions of 500-600 mm rainfall precipitation; while tree planting is a major activity, all environmental, socio-economic and other projects are expected to ultimately contribute to this cross-sectoral initiative. See also <https://www.unccd.int/our-work/ggwi>

²⁰⁸ Project to Strengthen Resilience of Rural Communities to Food and Nutrition Insecurity (PRECIS)

for scaling in the recently approved Niger National Adaptation Plan (Républic of Niger, GCF and UNDP, 2022).

- cxcv. **All GEF projects in Niger were fully aligned with Government priorities, policies, and strategies at the time of design.** Projects in the early years followed priorities of the Rural Development Strategy (RDS), different agricultural sub-sector strategies (livestock, water), and the National Environmental Plan for Sustainable Development (*PNEDD – Plan National de l’Environnement pour un Développement Durable*). The UNCCD National Action Programme (NAP/CCD-NRM 2000) was another important benchmark for these projects. Since 2010, the Government of Niger has developed a new set of coherent national policies, strategies and action plans that have been the principal guide of all Government operations and projects on the ground; these include the Economic and Social Development Plan (2012-2015 and 2017 -2021; *PDES – Plan de Développement Economique et Social*), the Initiative 3N – Nigeriens Feed the Nigeriens (I3N – Nigériens nourrissent les Nigériens) and the Sustainable Development and Inclusive Growth Strategy 2012-2035 (*SDDCI – Stratégie de Développement Durable et de Croissance Inclusive*). The ProDAF project (IFAD 9138) has been using the Initiative 3N as an entry point and driver for promoting resilient and sustainable land management practices, especially at regional level. The Strategic Plan for Biodiversity (2011-2020), a related 2014 national action plan on biodiversity and the National Forestry Plan 2021 to strengthen the position of forestry in rural development are other guiding documents with which GEF projects continue to be well aligned.

2.2 Coherence

- cxcvi. The Government of Niger has a coherent set of national policies and action plans, with high convergence of policy and strategic priorities among government and development partners at national level. But coherence at the national level is not always sufficient to translate into coherent operationalization and implementation of policies and strategic priorities on the ground. The GEF has actively supported and benefited from the high policy attention to NRM and the high degree of national coherence. As noted, environmental and climate change concerns are mainstreamed in all major policies and operational plans. Coherence is further supported by institutionalized coordination and oversight committees that also reach down to the regions. In recent years, the Government of Niger has been decentralizing many public roles, decisions, and responsibilities to the regions, departments, and communities. Niger has two national decision and consultation frameworks that coordinate strategy and activities of relevance for GEF programming across government agencies and other development partners. They are the CNEDD for climate change and the Initiative 3N for food and nutrition security and sustainable agriculture (Box 1). These two structures effectively contributed to coherence and avoiding leakage at national and decentralized levels.

Box 1 – Institutional coordination frameworks for climate change and food and nutrition security in Niger

The institutional framework for climate change adaptation and mitigation in Niger is led by the National Environment Council for Sustainable Development (*Conseil National de l'Environnement pour un Développement Durable, CNEDD*) which was put in place in 1996. The Council has an Executive Secretariat in the Prime Minister's office. It oversees and supports the coherence, coordination and implementation of all public, parastatal, private, and CSO activities. This includes relevant ministries and their departments, authorities in the regions and communes, and natural resource industries. Public and private universities and research centers, the Initiative 3N, the Niger and Lake Chad Water Basin development agencies and the CSO platform on climate change are also part of this structure.

The Initiative 3N (I3N) "Les Nigériens Nourissent les Nigériens" is primarily about food and nutrition security and sustainable agricultural development, adopted in 2012. The initiative coordinates strategy and activities of all relevant ministries and public institutions until 2035. The initiative has detailed 5-year action plans with indicators and targets for each year. The latest action plan for 2021-25 is set at USD 440,000 million. Its activities cover, among others, the growth and diversification of agro-sylvo-pastoral producers and fisheries and enhanced resilience to climate change and other crises. The I3N Action Plan is implemented through an inter-ministerial committee for coordination and a multisectoral technical

Source: République du Niger, GCF and UNDP. 2022. Plan national d'adaptation aux changements climatiques ; and Présidence de la République du Niger. 2021. Plan d'Action 2021-2025 de l'Initiative 3N « Les Nigériens nourrissent les Nigériens ».

This evident high degree of coherence of policy, strategies and action plans at national and even regional levels, however, does not necessarily lead to coherence of implementation on the ground, as observed and reported during the Mission's field visits (chapter 2.3). There is still much uncoordinated duplication of interventions by different development partners for NRM in communities, sometimes promoting different technologies and cost-sharing models that reduce coherence and sustainability. Key informants also reported several remaining gaps in capacities for effective and coherent management and impact assessments of different projects and programs at decentralized levels.

GEF project partnerships with strong and influential co-financing agencies in Niger, especially the World Bank, IFAD, AfDB and UN Agencies (UNDP, UNEP and FAO), along with the execution of most of its projects through Government agencies, allowed the GEF to effectively leverage its environmental and climate change objectives. Several interview partners acknowledged that the GEF has played a catalyzing role in Niger for coherent, integrated policies and strategies on the environment, among donors and the Government. GEF support for regional initiatives and programs that the Niger Government is committed to, such as TerrAfrica, the Great Green Wall initiative, the Lake Chad Basin Program and the Disposal of Obsolete Pesticides were much appreciated. Most GEF projects have been working closely through national and decentralized government systems and agencies, especially those of Agriculture and Forestry. This helped the Government to mainstream and promote environmental and related socio-economic objectives, including policy changes. The ProDAF

project (IFAD 9136) supported CNEDD capacities to better align its objectives with national programming, operations and monitoring frameworks.

The GEF has been working in Niger with other, similar Government and donor funded programs to generate coherence, synergies, and policy impact. GEF projects directly contributed to several revised policies, decrees, and environmental surveillance systems. The GEF programmatic approach across the four GEF SIP-related projects that were started between 2008-12 was important for coherence. These projects raised awareness and capacities for integrated NRM, SLM and watershed management at national level, in a concerted manner. The PLECO project (GEF ID 3381 (UNDP)) facilitated the development of a National Strategic Investment Framework for Sustainable Land Management and the adoption of a decree to guide country-wide oasis development. Nine national NRM and environmental observatories (monitoring, surveillance and research systems) were established that still exist. They were overseen and advised by a cross-ministerial technical committee. World Bank budget support included trigger indicators for setting-up these observatories and passing related decrees concerning hydraulic water, ground water levels, dune migration, and other topics. A recently launched regional GEF project (GEF ID 9825 (UNEP)) is collecting scientifically based evidence of current and past interventions on land degradation to support long-term decision-making in GGWI countries (GEF ID 9825 (UNEP regional project)).

The community action programme 2 (CAP2) (GEF ID 3382 (World Bank)) cooperated closely with GIZ, SNV, USAID and Cooperation Suisse on its community-based micro-investments and institutional support. In addition, CAP3 (GEF ID 5252) supported the Great Green Wall initiative that aimed to expand soil, land and water management in targeted, mostly Sahelian landscapes and climate vulnerable areas in West Africa. These projects gradually led to stronger community-based decision-making, participation of all stakeholder groups, and more adequate representation of marginalized groups, women and youth in local micro-investment committees (GEF IDs 3382 and 5252). Apart from facilitating a sound basis for decentralization by financing the development of a legal framework, CAP2 (GEF ID 3382) also helped communes (in many cases for the first time) to prepare development and investment plans and manage them in subsequent years.

The PASADEM project (GEF ID 3383 (IFAD)) supported the Government's decentralization policy by developing a regional SLM platform in Maradi. UNDP and IFAD projects helped to operationalize and build capacities of decentralized, local land commissions and communal land tenure committees, among others to resolve conflicts over land (GEF ID 3381 (UNDP), GEF IDs 3383 and 9136 (IFAD)). ProDAF (GEF ID 9136) specifically worked with communities to clarify land status and mediate on land and water use between agriculture and livestock producers, also on the location and use of small dams (*weirs*). In the PLECO project (GEF ID 3381) the focus was on awareness raising and capacity development for trust building and conflict resolution, especially among municipalities. At the political level, ProDAF helped with formulating the Rural Land Tenure Policy 2022 and developing Regional Land Use Plans, an ongoing effort.

Successful implementation by various GEF projects of replicating and scaling SLM, especially through assisted natural regeneration of lands (*RNA –Régénération naturelle assistée*), led to the passing of a decree on RNA and a strong strategic role of SLM in Niger’s National Investment Plan 2015-2019.²⁰⁹ Several agencies and partners teamed up in ProDAF to bring SLM, RNA and other land restoration techniques to communities with high concentration of assistance (*communes de convergences*). In these communities IFAD, FAO and WFP worked together with technically specialized NGOs and Government technical services (agriculture and forestry) to develop sustainable models for SLM, water mobilization and local farmer support facilities (*maisons du paysan*).

Notwithstanding these success stories of coherence, policy support and concerted results in Niger, the overall cooperation and joint learning among the four GEF SIP projects and with associated regional projects and programs was somewhat lower than expected. Each project design had similar objectives, be it applying SLM, dune fixation or NRM governance, and cooperation among the projects was encouraged at design. But the mission found only few records of concerted efforts or learning across projects, such as that of a 2015 SLM forum in Niger and reported in a regional review study on the SIP/Terrafrica program (Food and Agriculture Organization, World Bank and NEPAD 2016).²¹⁰ Overall, the same 2016 SIP review found few of the originally planned linkages between SIP projects and with regional organizations and learning institutions. The main reason was the lack of appropriate mechanisms for exchange, including missing emphasis on communication, with few available visual and audio products in most projects.

GEF had an instrumental, catalytic and often innovative role over the years in Niger. However, this role has been changing and to some extent diminishing as environmental and climate change themes, especially on SLM, were increasingly mainstreamed by the Government and its development partners. GEF’s long-term and focused programmatic approach on land degradation and improved SLM practices in parallel and successive projects in Niger contributed to enhancing and mainstreaming SLM practices across the country. In the PLECO project, environmental interventions for stabilizing dunes had been going on for some time, but GEF support allowed UNDP and the Forestry Department to pay more attention to socio-economic benefits, institutional NRM governance, and a stronger participatory approach. GEF contributions in PASADEM, ProDAF and early World Bank projects (CAP-2) were

vi. ²⁰⁹ See also a recent report on RNA in Niger: République du Niger. (no date). Ministère de l’Agriculture. Programme de développement de l’agriculture familiale (ProDAF). Cellule nationale de représentation et d’assistance technique (CENRAT. Série n°1 : La régénération naturelle assistée (RNA)

²¹⁰ Food and Agriculture Organization, World Bank and NEPAD. 2016. Informing Future Interventions for Scaling-up Sustainable Land Management. Lessons learned for decision makers from a review of experiences of the Terrafrica Strategic Investment Programme on SLM in Sub-Saharan Africa (SIP) under the NEPAD –Terrafrica Partnership Framework. <https://www.fao.org/3/i5621e/i5621e.pdf>

instrumental for institutionalizing NRM and conservation agriculture in villages, communities, and the regions and for supporting knowledge and dissemination work.

Mainstreaming relatively few innovations in the standard SLM models and practices also meant that over time the incremental roles for the GEF have become less clear, beyond contributions to replicating and scaling. This is especially evident in operations with large co-financing implementing partners, like those of the World Bank and IFAD that are promoting the same practices in the baseline projects. IFAD programs are now mostly replicating and scaling the tested SLM models into new geographic areas, with added attention to markets and income generating activities, although so far with variable success. Late disbursement of GEF funds in ProDAF and their use for keeping ProDAF activities going between two IFAD project cycles were indicative that IFAD baseline project funding and GEF funding were interchangeable. The IFAD PASADEM project maintained some distinct GEF indicators and targets (GEF ID 9138) while mainstreaming others; the World Bank CAP-3 project (GEF ID 5252) carried forward the GEF indicators on SLWM when the GEF part was completed. The GEF also keeps being innovative in niche projects as the Disposal of Obsolete Pesticides (FAO 4740 regional), oasis ecosystems management in the North (UNEP 9405) and integrated land and wildlife focus on the last remaining West-African giraffes in the wilderness (UNEP 10420).

The GEF is still seen by many in a guardian function for the environment. Some external observers interviewees, however, missed unique GEF contributions and focus within Implementing Agencies' scaling of interventions on land degradation, desertification and water management. Some interviewees suggested for GEF to be less implementing agency-driven and to take on more critical functions – especially in large, co-financed projects – such as through supporting external reviews of common NRM/SLM intervention techniques on technical effectiveness, economic efficiency and broader adoption, focusing on opportunities and remaining obstacles to reduce land conflicts especially in pastoral areas, and supporting assessments of longer-term impacts.

2.3 Environmental outcomes and socioeconomic co-benefits

GEF supported projects in Niger achieved substantial environmental outcomes and socio-economic benefits but institutional outcomes required continued support to be sustainable. The five GEF completed projects in Niger that were included in the analysis of results for this evaluation supported similar activities and aimed at similar outcomes.²¹¹ They were mainly focused on various forms of sustainable soil and land management to reduce land degradation and desertification and aimed to produce short- and long-term environmental, socio-economic and institutional outcomes, ultimately leading to improved human well-being. The co-financed parts of several of these projects also financed significant infrastructure and income-generating

²¹¹ GEF IDs 3381 (UNDP), 3382 and 5252 (World Bank), 3383 and 9136 (IFAD)

activities (World Bank and IFAD). All projects were rated satisfactory or higher on their outcomes at completion.²¹²

The outcomes for the World Bank Community Action Program projects (GEF ID 3882 and 5252) are summarized in Box 2. The two projects reported numerous environmental and socio-economic results and positive outcomes that covered most or all of Niger's communities (CAP-3 operated country-wide), especially through decentralized, community implemented socio-economic and environmental micro-projects that included major investments in community infrastructure and improvements in soil and water management. The World Bank Implementation Completion and Results Report (ICRR) for GEF ID 3382 concluded that a concerted effort across many partners, government levels and sectors was necessary to reach the project's social, economic and environmental objectives. The report was, however, skeptical about the sustainability of local community management committees without continued institutional and financial support.

Box 2 – Environmental and socio-economic outcomes in the World Bank Community Action Programs (CAP-2 and Cap-3; GEF ID 3382 and 5252)

The World Bank's Community Action Programs successfully built community capacities for decentralized and inclusive decision-making and planning and implemented numerous micro-projects managed by local government at community level. Micro-projects supported health, education and access to potable water and gender equality and women's empowerment through income generating activities. CAP-2 covered 65 per cent of the country's communes while CAP-3 scaled it up to all of them. *Environmental activities* were integral to the project and included landscape restoration and natural regeneration, agroforestry, pasture management and dune stabilization. In CAP-2 72 per cent of all targeted communes protected and reclaimed at least 200 additional hectares of land. In CAP-3 86,000 hectares had come under improved soil and water management practices by the end of GEF involvement in 2017, being extended to more than a quarter of a million hectares at the end of the World Bank project in 2021.

GEF was an integral part of the Bank's rural development portfolio and its funding focused on certain environmental aspects and micro-projects. In CAP-2 GEF also contributed to setting up land tenure commissions in 99 percent of the targeted 165 communities that started delivering land titles. CAP-3 put more emphasis on the food security agenda aligned with the initiative 3N.

CAP-2 and CAP-3 also invested strongly into institutional strengthening for local government planning included the adoption of local government planning tools. CAP-3 reinforced the capacity of the more than 700 local management committees (COGES) which were key to ensuring the maintenance and sustainability of different investments. However, some committees created towards the end of CAP-3 may need further strengthening, and a measure of continued institutional support could be required for all COGES. It was also not clear how these COGES would continue to be supported without a specific project.

A concerted effort was necessary to achieve the project's results. The World Bank ICRR for GEF ID 3382 concluded that without ministerial collaboration and the successful establishment of decentralized government administrations to deliver services, without building capacity to better manage local governments, and without investing in socioeconomic activities, it would have been impossible to implement participatory commune development plans or carry out social, economic, and environmental microprojects at the local level. Also, CAP-2 benefited the poorest through its food- or cash-for-work programs, implemented with GEF funds for 472 environmental micro-projects. This action was especially important during the two years in the project period

²¹² The ICRR for GEF ID 3382 reported satisfactory results but the GEF reported the TE as showing 'neutral' results (GEF 2022). The ICRR is the only project completion report available to the evaluation.

Source: WB Implementation completion and results reports (ICCR) for GEF ID 3382 AND 5252.

The three GEF projects that were evaluated in-depth (GEF ID 3381 (PLECO, UNDP), 3383 (PASADEM, IFAD) and 9138 (ProDAF, IFAD)) produced satisfactory short-term environmental and socio-economic outcomes at project completion, mostly through relatively well-tested land management interventions to reduce soil degradation and protect arable and other lands desertification. Other project activities had fewer outcomes in the short-term but became more effective over time, such as water for vegetable gardens, fodder production, access to markets, and income-generating activities. This was evident from findings at completion and the post-completion assessments during the field mission's site visits (and reported in Sections 2.3 and 2.4). The UNDP PLECO project (GEF ID 3383) sites are in the Zinder and Diffa regions of Niger and the PASADEM/ProDAF sites in the Maradi region (GEF ID 3383 and 9136) (Figure 2). Although both sites are in the arid drylands sub-habitat (AI between 0.20 and 0.50) they are quite heterogenous in their ecosystems, natural resources, and environmental threats. Being more desert like and located in an area with lower rainfall (Annex Figure A.1 (b)), the PLECO site has ample ground water in micro-basin oases (sourced from Lake Chad and other watersheds) whereas PASADEM represents a more common Sahelian setting of reliance on annual rainfalls, less water availability and deeper wells and agro-sylvo-pastoral mixed farming systems.

Figure 2 – Sites of PLECO and PASADEM projects



Source: Google maps

Findings at completion: PLECO project (GEF ID 3381)

Outcomes. In terms of *environmental outcomes*, the PLECO project work resulted in the mechanical and biological stabilization of dunes and land restoration of degraded agro-sylvo-pastoral lands. This led to better pastures and vegetable production in the micro-basins in the long-term. The project stabilized 5,373 ha of dunes, compared with 4,410 ha planned (Figure 3). It covered 33 micro-basins as planned.

Figure 3: Stages in dune stabilization and greening in Kosseri 2011 – 2018 (clockwise from upper left), PLECO project



Source: PLECO / PGDT project management

At the *socio-economic level* PLECO generated short-term employment and income through cash and food-for-work for stabilizing the dunes. Additional income came from seedlings sales, especially by women, which improved food security and reduced poverty and out-migration from the villages. At completion, *institutional and capacity development* in PLECO were highly satisfactory according to the terminal evaluation. The project's participative approach of building capacities involved the village beneficiaries and different institutional actors at local and departmental levels. The project generated awareness, it mobilized and organized the ultimate beneficiaries and local authorities and developed basic SLM capacities. NRM committees (*COGERNATs - Comités de gestion des ressources naturelles*) and basic land tenure commissions (*COFOB - commissions foncières de base*) were established although their functioning was assessed as mediocre at completion. Still, these committees were able - in cooperation with supported departmental and local institutions – to manage conflicts arising from local land use and tenure issues more effectively. Project cooperation with the University of Niamey and the CNSEE (*Centre National du Suivi Ecologique et Environnementale*) helped generate new data management systems of a more technical nature (meteorological, rainfall

and temperatures etc.) and on environmental, socio-economic and biodiversity conditions and impact.²¹³

- cxcvii. Contributing factors.** The main factors that helped with effective results in PLECO were building on Forest Department know-how and experiences from earlier projects, a sound, sustainable technical design of environmental interventions and linking them to future agro-economic and higher income potential through better pastures and vegetable gardens. The project also captured the interest of the population through short-term incentives, such as cash-for-work. Availability of additional funds for performing the work helped with the acreage of dunes that were stabilized. Missing immediate linkages to productive opportunities, limited communication effectiveness and inverse incentives generated through payments for work and competing projects with different approaches affected sustainability.
- cxcviii. Synergies and trade-offs.** The PLECO project developed synergies across multiple partnerships and levels especially through linking project sites of environmental work in the Zinder/Diffa region with the national systems at CNSEE and the University of Niamey. Other synergistic partnerships included local administrative authorities, elected officials and government technical services and the collaboration with the WFP. These synergies were, however, limited by the absence of an effective knowledge management and communication strategy. The project never had the resources to recruit a dedicated communications officer. Synergistic environmental results through PLECO were weakened by the lack of community-level coherence of technical, social, and incentives approaches by different donors, NGOs and service providers working in the same or neighbouring communities. Spurred by competition this not only prevented potential replication and scaling of GEF activities but affected, above all, the motivation of the population to engage in work voluntarily and contribute their own resources, especially post-PLECO completion. In addition, other development agencies' environmental technologies and social approaches were often inferior to those by the PLECO project and short-term. The Forest Department is currently in the process of developing NRM plans for each site that would be binding for all intervening parties.

Findings at completion: PASADEM project (GEF ID 3382)

Outcomes. On *environmental outcomes*, the PASADEM project reported substantially improved vegetation coverage, animal feeding capacities, biodiversity and carbon sequestration as a result of its activities. The project's promotion of SLM reduced erosion and soil salinity. Under PASADEM, villagers and village committees also developed 40 community investment plans in a participatory way (compared to 28 planned). Many different SLM related activities and micro-investments reduced land degradation, increased agricultural and other land productivity, and farmers and pastoralists' incomes. This included assisted natural regeneration, agro-pastoral land restoration, conservation agriculture practices, livestock

²¹³ Despite several efforts the GEF mission did not manage to obtain a response to its emails to the responsible researchers at the University of Niamey and CNSEE.

corridors and improved cooking stoves. In collaboration with FAO the project carried out extensive trainings of farmers on SLM through farmer field schools, with participatory farmer managed demonstration plots, support for material implements, inputs for these plots and exchange tours to Burkina Faso. Field schools were based on a study on alternative resource management practices that was the basis for much of the extension and dissemination material produced by PASADEM. In terms of *socio-economic benefits*, 52 percent of project beneficiaries improved their incomes through doubling millet yields, cash-for-work (mainly for land restoration activities) and NRM related income generated activities which, however, came late in the project (according to the TE). Forest, pasture and livestock productivity and incomes went up significantly (by 80%) and net forest losses such as through charcoal use were reduced. All these improvements were documented in detail in the TE based on an end-of-project impact survey.

To enhance *governance capacities* 36 village cluster project M&E committees and several NRM village management committees were established (the target for the latter was only achieved at a 40 per cent rate as their mobilization was difficult). Performance of these committees was highly satisfactory according to the TE, with regular meetings, inclusion of vulnerable populations, democratic decisions on NRM governance, and contributions to conflict resolution. Limited collaboration with technical services, low farmer familiarity with legal and administrative procedures and requirements, and disrespect by livestock farmers and pastoralists of established rules for use of pastures reduced the effectiveness of these committees to some extent. At regional level PASADEM established a multi-actor, regional SLM platform with regular meetings of a technical group and indicative state budget support after project completion. Technical experts were identified and trained to establish a technical specialists network on SLM for future, post-completion projects, based in NGOs and government technical services. The project also put in place an SLM documentation center and developed 25 technical briefs on SLM for broader dissemination.

Unintended results. Some unplanned and unintended results from the PASADEM project were identified during the field mission, both short- and long-term ones. Some micro-investment activities were identified during the village investment plan stage that had not been planned such as forest seedlings nurseries and water pond development; as well as training of more farmers and support workers on RNA than intended (training-of-trainers). Secondly, more meetings between farmers and beneficiaries from different villages in village cluster meetings had positive social side-benefits. And last, the return of some wildlife in restored pasture areas (rabbits) was noted, which has been increasing since completion as lands and nature were gradually restored.

Contributing factors. The PASADEM project built on well-established technologies for SLM and land restoration that were replicated in the targeted project sites and villages, especially RNA and *tessa/zai* (which is the planting in pods in small earth basins in the ground), and other popular Sahelian land restoration techniques such as crescent bunds (*demi-lunes*) and conservation agriculture. The GEF could rely on an effective baseline project of the implementing agency (IFAD) that had been working in Niger and on RNA for many years (Annex

Table A.2), as well as synergies with partners (see above). The project also incentivized the population to participate in land restoration trainings and applications which helped in their short-term adoption. Some activities were less effective as the underlying model was not workable in the IFAD project context, such as income generating activities. Conditions for support included farmer cash contributions for obtaining grant assistance that was not well accepted by beneficiaries since other projects in the area did not ask for such beneficiary contributions.

Synergies and trade-offs. The interactions of different actors from communities, government, NGOs and donors (e.g., IFAD, WFP and FAO) in PASADEM generated positive synergistic effects and economies of scale. It facilitated working with the farmer groups and expanding and deepening project activities. Villages of convergence of multiple project partners and donors (IFAD, WFP, FAO, CARE and others) provided synergies and prior agriculture interventions, activities and committees that PASADEM could work with.²¹⁴ The difference to the PLECO site was that IFAD deliberately brought these partners together as three of them were already committed to partner in the field through a global Agreement on Cooperation among Rome-based UN agencies. Through working with the Ministry of Agriculture as one of the service providers in PASADEM and developing a cadre of SLM experts in the region the project generated synergistic effects, not least in terms of mainstreaming and scaling environmental practices in agricultural extension services by the Ministry of Agriculture.

Figure 4 : Beneficiary interviews in Boussaragui and restored pasture lands and assisted natural regeneration in crop fields (RNA) in Dargué, Maradi region (IFAD PASADEM project)



²¹⁴ These were areas and villages of high concentration of activities and partnerships (see Annex Figure A.2)



Source: GEF 2023 evaluation Mission

2.4 Natural resource governance and sustainable impact

Natural resource governance and socio-economic factors in design and implementation

Natural resource governance and other socio-economic factors have been well considered in design and implementation of GEF interventions in Niger. This has already been evidenced through the range of environmental, socio-economic and institutional project activities and results reported in the previous chapter (for planned and actual project interventions and results of socio-economic and governance for each project also see Annex Table A.3).

Enhanced natural resources and ecosystem services and socio-economic development are strongly and positively correlated in Niger, with projects showing good results in both areas. They were supported in all GEF projects through better natural resource governance, including for land tenure and security, and other activities in favor of local governance. The main problem consisted in the need for sustained support of such activities beyond project completion to achieve sustainable results, especially for local institutions and governance, but also in many cases for lasting socio-economic effects. The World Bank assessment of GEF ID 5252 (CAP-3) already pointed to the need to further strengthen and continue institutional support for local governance beyond project completion to ensure sustainability (Box 2). This is also the conclusion of the post-completion assessments in two GEF projects (plus one ongoing project) that were carried out by the Niger evaluation mission.

Sustainable impact, environmental governance and replication and scaling

cxix. Post-completion assessment: PLECO project (GEF ID 3381)

PLECO achievements were largely sustained and further improved since the project's completion in 2015, with several long-term environmental and socio-economic benefits. This happened mainly through continued UNDP financed follow-up after the GEF project ended, and since 2018 through the UNDP PGDT project (*PGDT – Projet du Gestion Durable des Terres, Sustainable Land Management Project*) which has been operating in the same region since 2019. For the GEF evaluation mission environmental impacts were visible in many sites on the ground with extensive added vegetation, trees and brushes around protected arable lands, micro-basins and livestock pastures. The exact amount of sand dune stabilization and added biomass could not be assessed, nor were its effects on expanded pastures and fodder opportunities evident since no up-to-date geospatial data on vegetation coverage and dune movements was available in the project.

Sand dune stabilization was not continued by villages on their own once the PLECO project was completed, for instance in remaining places or neighboring non-PLECO villages. Reasons included the hard and extensive work involved, uncertainty of success, and the long-term and shared nature of benefits, with uncertainties about who exactly would benefit in the end, also related to land tenure problems. Long-term socio-economic benefits from dune stabilization were only slowly emerging. Villagers also regarded dune stabilization as the task of the

Government, i.e., a public good. An additional 2,600 ha of sand dunes were stabilized in the area by UNDP supported activities since PLECO was completed.

Beyond short-term income gains through project transfer payments, PLECO did not have any immediate effects on villagers' productive agricultural capacities. Some of this potential has by now been turned into co-benefits, mainly through several new vegetable gardens established by PGDT in the micro-basins of the oases (Figure 4). But the model is not yet sustainable as there is limited cost-sharing with villagers. Vegetable and fruits were previously not cultivated by the villagers as they lacked expertise, access to seeds, water pumps, inputs and protection, as well as collective management capacity. These vegetable gardens are part of a pilot phase. While already providing additional food and income, they are at a relatively early stage of sustainable operations. The follow-on PGDT project has covered all set-up and most operating costs and has been providing much other assistance, mostly for free, such as improved seeds, crop protection, and advisory services.

Figure 4: Vegetable gardens with stabilized dunes in the background. Kosseri Blabrim and Madjekameram, Diffa region. UNDP PLECO and PGDT projects



Source: GEF 2023 evaluation Mission

Awareness and knowledge on SLM continued to grow after completion of the PLECO project, driven mainly by continued UNDP project activities. Committees continued to function but without improvements in their capacities and legal status. Much attention of village committees has been on the day-to-day requirements of managing vegetable gardens, allocating plots, keeping solar water pumps running, fixing fences and obtaining assistance on seeds and crop protection. Some continued activities also concerned land tenure in livestock pastures. The PGDT project manager remained committed to enhancing committee capacities and responsibilities to cover requirements of the new Forest Law. Under this Law all relevant environmentally threatened sites are supposed to have a national resources management plan to increase effective local management, coherence and synergies of NRM activities.

The PGDT project management has been well connected to the country's SLM institutions and other similar projects. For instance, the GEF-supported, IFAD-implemented ProDAF project is represented on the PGDT national steering committee. But similar to the PLECO project, the PGDT PCU does not have a communications officer, which reportedly limits PGDT interactions and synergies at all levels. The National Ecological Monitoring Centre (*observatory*) with a focus on sand dunes, land degradation and early warning is now functioning, catalyzed by the earlier GEF PLECO project. PGDT is still working with this observatory. The project has a cartographer who has been conducting forward looking, detailed mapping of opportunities for expanded environmental investments and socio-economic development in future in the numerous micro-basins of the region.

The GEF evaluation mission found few indications of interactions of the PLECO or PGDT projects on lessons sharing with other SIP/TerrAfrica projects or on harmonizing the national M&E system with that of the SIP/TerrAfrica M&E and SLM indicators system as had been intended. One of the opportunities for interactions on project lessons in a more general way and with broader audiences have been the regular participation by the PLECO/PGDT PCU and the executing agency, the Water and Forest Department in the Ministry of Environment (*Direction Générale des Eaux et Forêts*) in regional technical workshops and exchanges have been regularly participating.

The most important factor for sustained and expanded project activities in PLECO intervention sites were the follow-up project activities and investments by UNDP. Continued donor engagement was also motivated by interest to further develop PLECO as model sites and approaches for replication and scaling through future climate and development finance. The PGDT model is first priority for the forestry sector in Niger's National Adjustment Program 2022 investment plan.

Despite some successes stories there have been and continue to be many remaining challenges, barriers, and risks to long-term sustainability of interventions in the PLECO sites:

- Environmental and socio-economic long-term benefits have been materializing relatively slowly. Several environmental results take by definition longer, such as dune fixation and reforestation. To achieve significant socio-economic long-term benefits may require resolution of complementary problems that are often outside of project control, some of which are mentioned in the following.
- Endemic infrastructure and technical problems such as the quality of feeder roads, hydraulic water management and salination of soils require technical attention. On-the-ground work by government services is increasingly difficult, due to changing policies about their roles, costliness of such operations, and security concerns.
- The population has developed a certain dependency and attitude of expectation about project payments and other assistance for dune stabilization and alternative income generation (vegetable gardens).

- The technical models and socio-economic benefits of environmental interventions did not favor replication and scaling by beneficiaries themselves. They were not designed in a way adapted to people's traditional knowledge, context and means.
- Institutional capacities in communities and administrations remained weak and successive project activities have not given priority to improved NRM governance. There were still missing pieces in the legal and regulatory environment for a more pro-active role of community NRM and land use committees that are expected to be gradually addressed, such as through developing the required management plans for environmentally sensitive sites under the new Forest Law.
- Interventions by multiple agencies and NGOs in communities were not well coordinated and the Forestry Department has been reluctant to work with local NGOs whose technical capacities and motivations for long-term results are viewed skeptically by the Department.

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cci. Post-completion assessment: PASADEM project (GEF ID 3383)

Some SLM activities and micro-investments in the PASADEM project were sustained or expanded more strongly than others. There was broad agreement among project staff and beneficiaries that this was most certainly the case for RNA²¹⁵ and selective conservation agriculture practices such as *tessa/zai*, mulching and minimal ploughing.²¹⁶ But in the absence of a follow-up study, sustained adoption of improved practices by farmers could not be reliably assessed. Project-financed farmer field schools were not extended in most areas after PASADEM completion and there were no long-term adoption studies. There was also no evidence that farmers or groups of farmers embarked by themselves on long-term land restoration activities that involved major earth or clearing works with uncertain individual benefits, such as developing livestock pastures and livestock corridors.

As far as sustained socio-economic benefits were concerned, many of the short-term project income gains in PASADEM had been due to project transfers (such as cash-for-work and income-generating activity grants) and higher yields on demonstration plots. During the evaluation team's village visits farmers clearly appreciated this part of the project most. Since then, it has been uncertain whether millet and other agricultural yields per hectare indeed sustainably improved after the project ended. There was no data available and farmer recollection was vague or not reliable; no adoption study was conducted after project completion to estimate such benefits, such as through the PASADEM successor project ProDAF.

²¹⁵ ProDAF also carried out a major review of the success story of RNA recently that points into this direction (see references)

²¹⁶ For instance, conservation agriculture is a package of different alternative land management practices. Sustainable adoption of such practices is hard to assess to start with. The FAO Farmer Field School programme did not carry out adoption studies according to the interview with the PRODAF FAO lead expert on FFS. Some short term adoption was assessed in the PASADEM end-of-project impact study.

Cash-for-work was continued in some villages by other projects, such as IFAD ProDAF, WFP, CARE etc. More sustainable income gains were reported for livestock holders than crop producers, be they agro-pastoralists or pastoralists, mainly from increased fodder production on restored lands. To what extent IGA had sustained effects is not known but key informants perceived the likelihood as low.

Many village cluster M&E committees and NRM village management committees were still functioning. Village or cluster level committees were more likely to be effectively maintained in communities of high, and often continued, concentration of NRM, agriculture, marketing and food and nutrition related activities (*communes de convergence*). The two villages visited by the GEF evaluation mission had several village committees and organizations on production inputs, NRM, cereal banks and nutrition, and marketing that often had been around for many years. These committees often assumed the tasks that a specific project wishes to emphasize. They appeared to be more geared towards managing, supervising and reporting on certain project specific activities and results than long-term, independent resource management tasks and roles in NRM. Discussions with technical project staff also pointed in this direction. Successive donor-financed projects, even those in the same regions, were often more interested in expanding to new areas than to consolidate and deepen environmental, socio-economic and institutional achievements. The mission identified this as a major problem.

The regional SLM platform established by PASADEM was no longer functional, but most former platform partners regularly met in ProDAF planning and other meetings on SLM since they were also working as contractors for ProDAF. This included NGOs as ProDAF executing partners and Government technical services that provided ProDAF supervision and quality control. In contrast, technical specialists trained by PASADEM were still available to provide their services and the SLM documentation center and its products were continued in the ProDAF project as farmer advisory services (Appui conseil agricole paysan, ACAP).

Four factors positively influenced post-completion sustainability of PASADEM: (1) improved NRM practices with higher land productivity were recognized and used by farmers post-completion; (2) effectively implemented land restoration activities gradually generated lasting benefits; (3) continued support in PASADEM villages through IFAD partners (WFP, Care and others) and occasionally through the IFAD/GEF successor project (ProDAF) helped consolidate activities, and (4) positive policy impact from the country-wider Strategic Framework for SLM (2014) and a re-emphasized role of SLM in the National Investment Plan 2015-2019 brought some additional resources.

A major challenge for sustainability were weak exit strategies from communities to consolidate interventions in targeted villages post-completion and few NGO and Government technical services to carry forward NRM execution and oversight work started by PASADEM. NGOs and Government technical services depended for much of their work on continued project payments. In retrospect, PASADEM did not have an adequate exit strategy, nor did it sufficiently appreciate the need for some longer-term engagement with communities beyond

single-round project interventions, especially to further strengthen and motivate village NRM committees to continue cost-effective, self-sustaining land restoration activities and monitor and facilitate broader adoption of NRM practices, once introduced.

Risks are rising as population pressure is increasing. There is more re-migration from Nigeria and more competition for scarce and degrading land resources. This most certainly will lead to further conflicts over lands and more outmigration to urban centers, the North of Niger and beyond. On the other hand, there is also now more knowledge and experience around at all levels in affected communities, such as those served by PASADEM and ProDAF, on how to deal with the drivers of land-degradation which could help mitigate these risks.

2.5 Gender, resilience and private sector

Gender and women's equal participation in projects have always been an important aspect in GEF projects in Niger. Recent projects increasingly have gender analyses and more specific action plans for empowering women. Earlier projects emphasized the equal participation of men and women in project activities and in reaping benefits from NRM related and other income-generating activities and from increased production. Most projects had gender-disaggregated and sensitive indicators and targets.

Indeed, women were the majority of beneficiaries of cash and food for work and performed a large part of land restoration works in the PASADEM project (GEF ID 3382). PASADEM also started various micro-projects for women with good initial results that were carried forward by ProDAF (GEF ID 9138). Women were strongly involved in managing plant and tree seedling nurseries in PLECO and PASADEM which were a basis for empowerment, generated additional revenues for children's education and purchases of small ruminants. More recently women benefited strongly from the produce and sales of GEF supported vegetable gardens that helped with improved food security and nutrition (PLECO and ProDAF). In the PLECO project 62 per cent of all garden beneficiaries were women. Better access to cereal banks also improved food security across the year. Training and capacity development of women were important in all projects.

The World Bank community action program (GEF ID 3382) explicitly improved women's participation in decision-making in communities and local committees, a goal that other projects also increasingly are focusing on. As access by women to land in vegetable gardens was improved in several projects their access to crop lands remained tenuous and kept often depending on their husbands' decisions. The ProDAF project conducted a gender analysis at design, with a specific action plan especially for food and nutrition security. A full gender action plan with clear operational details was also developed in the UNEP implemented project on oasis ecosystems in Northern Niger (GEF 9405).

Resilience has been at the core of all GEF projects and national development strategies in Niger especially in terms of ensuring food security and reducing exposure to climate shocks.

The severe droughts and famines of the 1970s and 80s across the Sahel drew the attention of governments and people to alternatives to rainfed agriculture and untenable livestock holdings. For a long time, the people of the Sahel have been using multiple coping strategies towards income risks and recurrent droughts, including diversification of income sources, migration and social strategies (building communities across broader geographic areas, such as through marriage). The I3N strategy explicitly states that its aim is to improve the resilience of populations towards climate, crises and catastrophes, especially of vulnerable people. In 2018 the Government of Niger developed an Integrated Programme of Resilience towards Food and Nutrition Insecurity (Programme pro-résilience 2019-2021).²¹⁷ The program specifically intended to diversify agro-sylvo-pastoral production opportunities, including fisheries, improve the market supplies of food, and to enhance the population's resilience towards food crises, natural catastrophes and climate shocks.

The PLECO and PASADEM projects were fully aligned with resilience principles and goals. They improved resilience through their protective activities, management and restoration of natural resources and improved community based NRM governance to enhance natural resource and beneficiary resilience towards climate change, increasing population and other pressures on natural resources and people. The Community Action Program (GEF ID 3382) included non-planned activities to support resilience, such as WFP food or cash-for work and improved many community-based social activities, such as education, health and potable water. Other projects addressed resilience through beneficiary participation, diversifying income sources and strengthening IGA (GEF ID 5252) and attention to stakeholder mapping and multi-stakeholder engagement (GEF ID 9825). The Disaster Risk Management project (GEF ID 5436) was fully focused on improving Niger's resilience to natural hazards through selected disaster risk management interventions in targeted project sites and strengthening of Government's capacity to respond promptly and effectively to an eligible crisis or emergency, mainly through flood risk management investments, flood protection infrastructure and rehabilitation of watersheds.

The ProDAF project took resilience into account in design and implementation through various activities to strengthen the resilience of the family production model in the short- and long-term. The project focused resilience investments at the economic level (profitability of systems, access to capital), the social level (all local stakeholders become active in decision making processes to integrate climate dimensions into communal and regional development plans), and the environmental and the climatic level (management and monitoring of natural resources, implementation of agricultural practices that reduce the impact of climate change on the production system, infrastructures to secure household access to agricultural water, and infrastructure designed or located by taking account of climate risks). One of the more recent

²¹⁷ "Programme intégré de résilience à l'insécurité alimentaire et nutritionnelle". Programme pro-résilience 2019-2021. IFAD Project Design Report PRECIS project. 2019

projects (GEF ID 9405) emphasizes participatory planning processes, multi-stakeholder platforms and learning mechanisms on collaborative approaches to build resilience.

Most private sector activities in Niger’s GEF projects related to capacity development of entrepreneurs and engaging with value chain actors on inputs and marketing, apart from using private contractors for project services. The Niger GEF project documents do not provide many details on engaging the private sector. Private sector activities and results are mostly discussed in broad, unspecific terms. For ProDAF management, private sector engagement consisted mainly of the introduction of an agricultural fire insurance to farmers, involving private entities in public works, developing capacities in marketing (mainly through wholesale and retail infrastructure) and co-financing some rural finance activities with banks. There was no strong support for existing rural producer organizations in developing public-private partnerships. The CAP-2 project (GEF ID 3382) had planned to develop capacities of value chain actors (SMEs and smallholders) to improve business operations, but its results could not be assessed from the information available in the TE.

Summary of findings and emerging lessons

EQ 1: To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

In Niger, the GEF most successfully focused on addressing dryland challenges around land degradation and desertification. Other areas such as effective water management, land tenure and conflict resolution among different farmers and land users (including pastoralists), alternative income-generating activities, and market access received less attention and effective implementation. The GEF’s catalytic and innovative functions diminished over time especially in projects with large baseline co-finance that mainstreamed GEF environmental and climate change objectives and approaches in their own project activities.

EQ 2: How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

There has been effective agreement, coherence and synergies among national actors in Niger on environmental, climate change and food and nutrition security policies and strategies, including on cross-cutting themes. But technical and social implementation approaches in communities have not always been similarly coherent, including those in GEF-funded projects. Approaches in many communities are too often dominated by competition and short-term profit seeking of service providers. This can generate confusion among beneficiaries and communities and disincentives for beneficiary ownership and farmer-based solutions. In some communities (*villages de convergence*) IFAD, FAO and WFP effectively worked together in GEF supported projects with technically specialized NGOs and Government technical services to develop more coherent and sustainable models for SLM, water mobilization and local farmer support.

EQ3: To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?

- ccii. GEF projects in Niger achieved significant environmental outcomes and socio-economic benefits, which are often connected in a win-win situation. Overall, however, there has been too much emphasis on short-term results and project-dependent assistance despite significant institutional support and investments. Broader adoption requires technical and socio-economic models and innovations that are more attractive for and adapted to the populations to engage in with their own resources and traditional knowledge, and to maintain their governance institutions, with adequate and longer-term exit strategies. In many cases communities and farmers have not been sufficiently motivated, or in some cases capacitated, to carry forward NRM activities and investments by themselves, with their own resources.
- cciii. National and sub-national institutions are not always available at project and community levels, especially post-completion, partly because of limited post-project support and partly because of the remoteness of project areas and costs in serving these. Independent and long-term analyses of project and other on-the-ground NRM intervention effects through follow-up surveillance systems, knowledge management and learning are rare. Relevant institutions exist but remain weakly resourced, overstretched and not sufficiently linked with projects and operations on the ground (CNSEE, FISAN, *observatoires*, regional projects and programs).

EQ4: Have natural resource governance and other socio-economic factors been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

- cciv. Natural resource governance at community, departmental and regional levels and socio-economic factors have been well considered in GEF projects in Niger. Related investments contributed significantly to many short-term and certain long-term environmental and socio-economic benefits. Yet high levels of land degradation, sand invasion and poverty led the Government to embark on longer-term, consolidated and well-coordinated intervention strategies and action plans, such as through the Initiative 3N and the National Adaptation Plan.
- ccv. Experiences from GEF projects in Niger showed that sustained, long-term environmental and socio-economic activities, investments and benefits generation often went beyond the capacity of local communities and their governance. Niger has been working on decentralizing its public services, infrastructure and community support for more than a decade, including through several GEF supported projects. Relevant policies, laws and community self-management models exist, and enabling legal and regulatory instruments for community self-governance and management are emerging, including on resolving conflicts over land. But they often are not yet sufficiently finetuned and operationalized to work on the ground. Community connections with district and regional administrations, technical services and other sources of technical and

managerial know-how often remain tenuous. Many critical investments and support activities in rural areas continue to depend on external donor funding and projects.

EQ5: To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

- ccvi. As gender and women's equal participation and benefits in projects have been well considered and achieved in the past, the use of gender analyses and action plans for empowering women has been gaining ground in recent projects, with results yet to be seen.
- ccvii. Resilience in terms of food security and reducing exposure to climate shocks has been primordial in all national development strategies and GEF projects in Niger and supported through many different context specific interventions, from environmental awareness over income diversification to cereal banks.
- ccviii. GEF projects have engaged in several entrepreneurial capacity development and marketing activities, but the private sector and enterprises of different sizes still offer many unexplored opportunities for support in Niger, especially in providing basic community services.

ANNEXES

Annex 1 – List of interviews

Table A.1 – Interviews conducted for the Niger case study:

Name	Organization / Function	Interview Date
El Hadji Mahaman Laouali	UNDP. Program manager	March 13, 2023
Salissou Yahouza	Ministère de l'Environnement / Direction General de l'Environnement. Directeur de la gestion durable des terres	March 14, 2023
Chaibou Dan Bakoye	Ministère de l'Aménagement du Territoire et du Développement Communautaire, Designated GEF focal point for the mission and Manager of Strategic Program for Climate Resilience, Niger	March 14, 2023
Abdoulaye Soumaila	IFAD ProDAF project. Coordinator for Maradi region.	March 14, 2023
Assadeck Mohamed	Fonds d'Investissement pour la Sécurité Alimentaire et Nutritionnelle (FISAN). Director General.	March 14, 2023
Boubacar Altiné Saibou Magagi	IFAD programme Niger. National Coordinator IFAD ProDAF project. Responsable Administratif et Financier.	March 15, 2023
Djibo Banaou	FAO, Assistant of the FAO country representative in charge of programmes	March 16, 2023
Guero Maman Garouna Iboune Souleymane	UNDP PGDT project. Coordinator. (Formerly PLECO M&E expert) UNDP PGDT project. Assistant coordinator	March 17, 2023
Souleymane Mahamane	IFAD ProDAF project. Institutional and social expert.	March 20, 2023
Laouali Soumaila	Ministère de l'Environnement. Département de l'eau et des forêts. Regional Direction Maradi . Director.	March 20, 2023
Mahaman Kabirou	Ministry of Agriculture, Regional Direction of Agriculture Maradi. Director.	March 20, 2023

Field visits, March 18 – 20

UNDP PLECO project – Zinder and Diffa regions

latitude	longitude	
13.63582	11.43337	Madjekameram
13.71404	11.49147	Kosseri Blabrim
13.76159	10.67736	Koublé Doki
13.69481	10.75104	Karallalé

IFAD PASADEM project – Maradi region

13.87271	6.7486	Dargué
13.78663	6.80789	Boussaragui

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- ccx. IFAD. Programme Niger FIDA. 2019. Rapport sur Analyse du niveau d’appropriation des mesures d’adaptation aux effets des Changements Climatiques à travers les dispositifs des financements FEM et ASAP. Version Finale. With Ministère de l’Agriculture. Mars 2022. Programme de développement de l’agriculture familiale (ProDAF). Cellule nationale de représentation et d’assistance technique (CENRAT).
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de Zinder) et de Maïne-Soroa (Région de Diffa). PIMS No. 3225. Mission d'évaluation finale du PLECO (rapport final).

- ccxvi. République du Niger. (no date). Ministère de l'Agriculture. Programme de développement de l'agriculture familiale (ProDAF). Cellule nationale de représentation et d'assistance technique (CENRAT. Série n°1 : La regeneration naturelle assistee (RNA)

The World Bank. 2023. Niger Disaster Risk Management and Urban Development Project. Implementation completion and results report on two credits from IDA and a grant from GEF. Urban, Resilience and Land Global Practice. Western and Central Africa Region. Washington D.C.

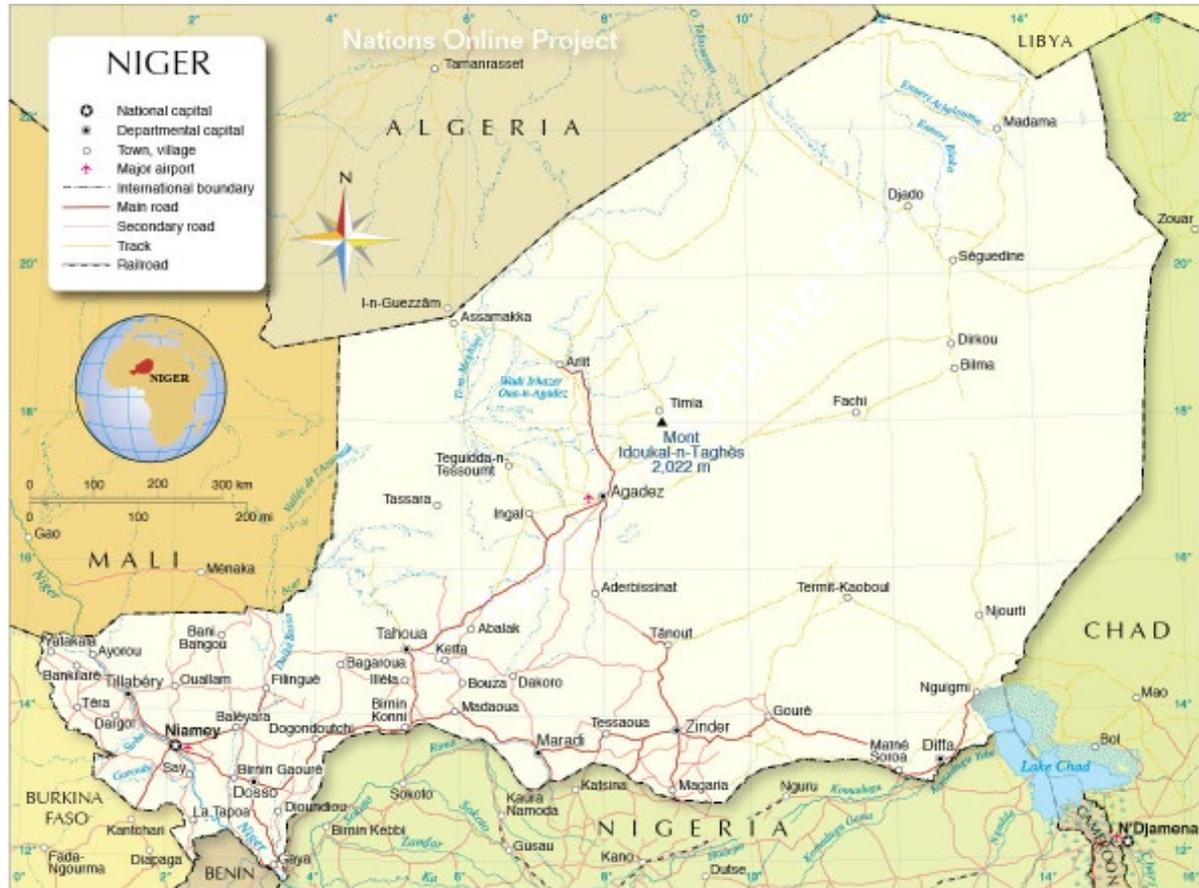
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The World Bank. 2013. The Second Phase APL of the Community Action Program. Implementation completion and results report. Agriculture and Rural Development Unit (AFTAR). Sustainable Development Department. Africa Region. Washington, D.C.

ccxviii.

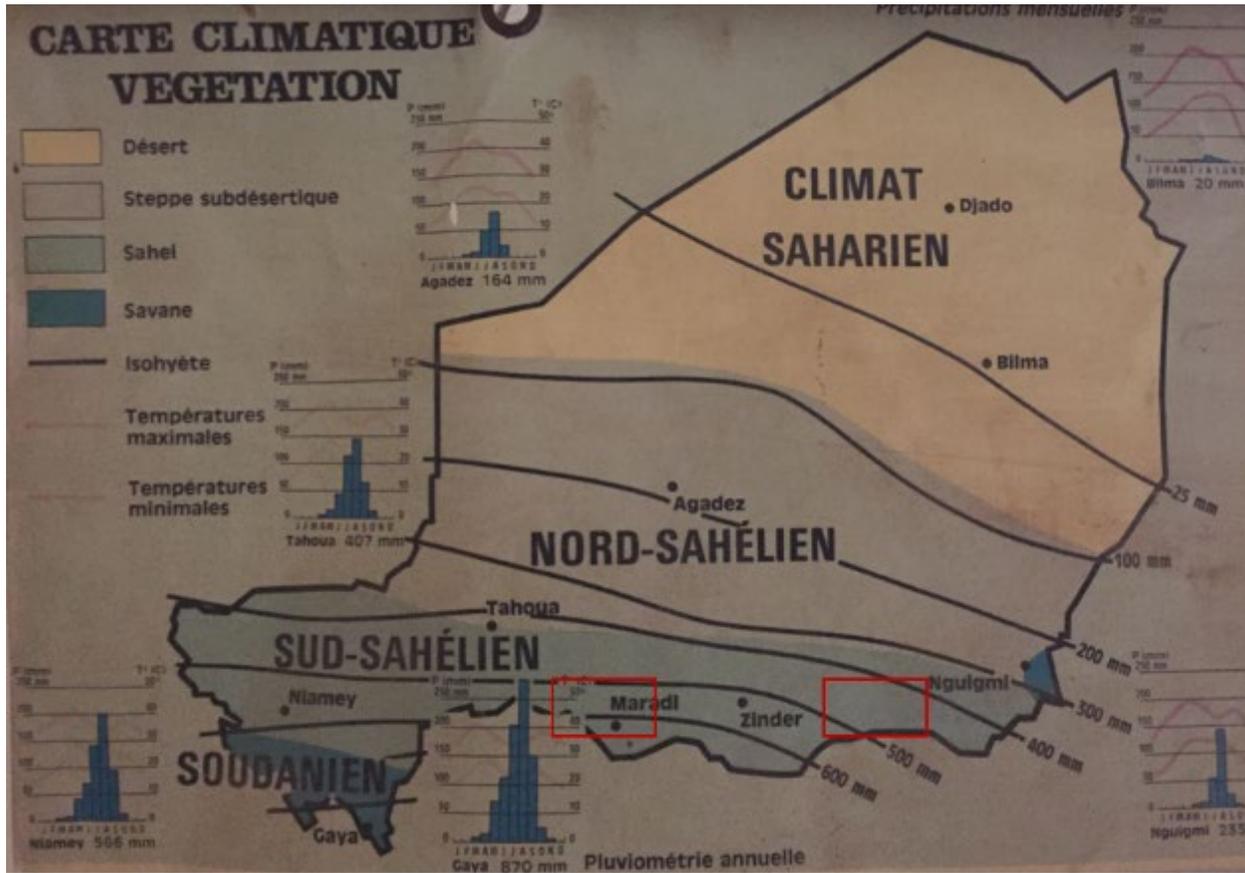
Annex 3 – Maps and tables

Figure A.1 : Map of the Republic of Niger – main administrative divisions and neighboring countries



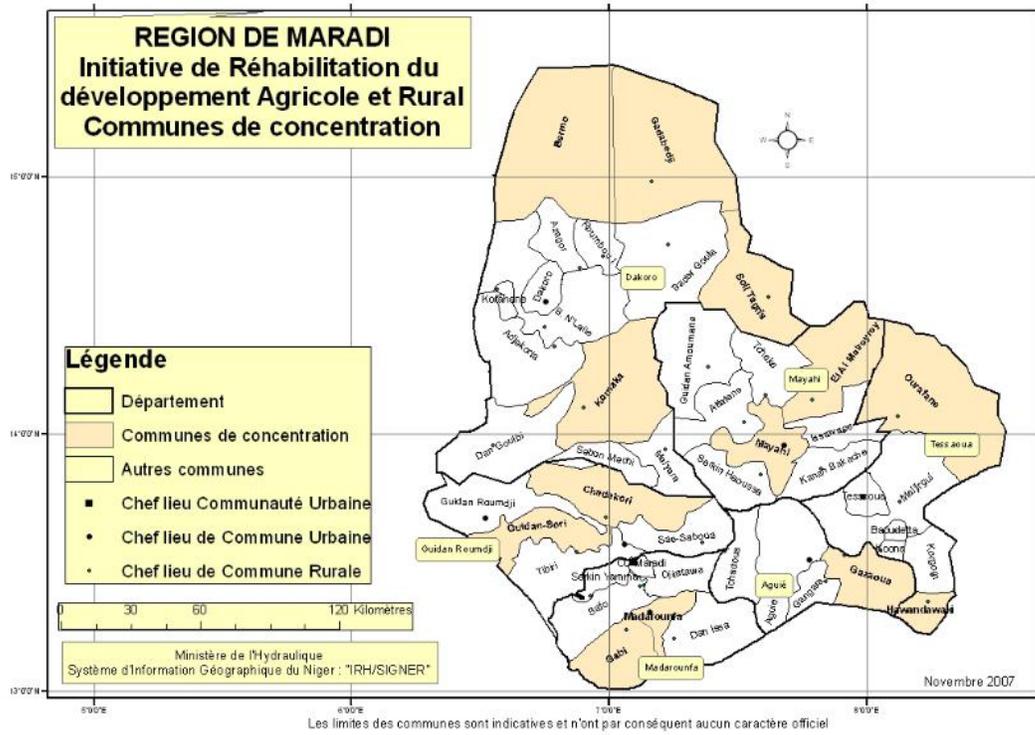
Source : <https://www.nationsonline.org/oneworld/map/niger-political-map.htm>

Figure A.2 (b) : Map of the Republic of Niger with isohyets (annual rainfall ranges) and PASADEM and PLECO project sites marked by red rectangles



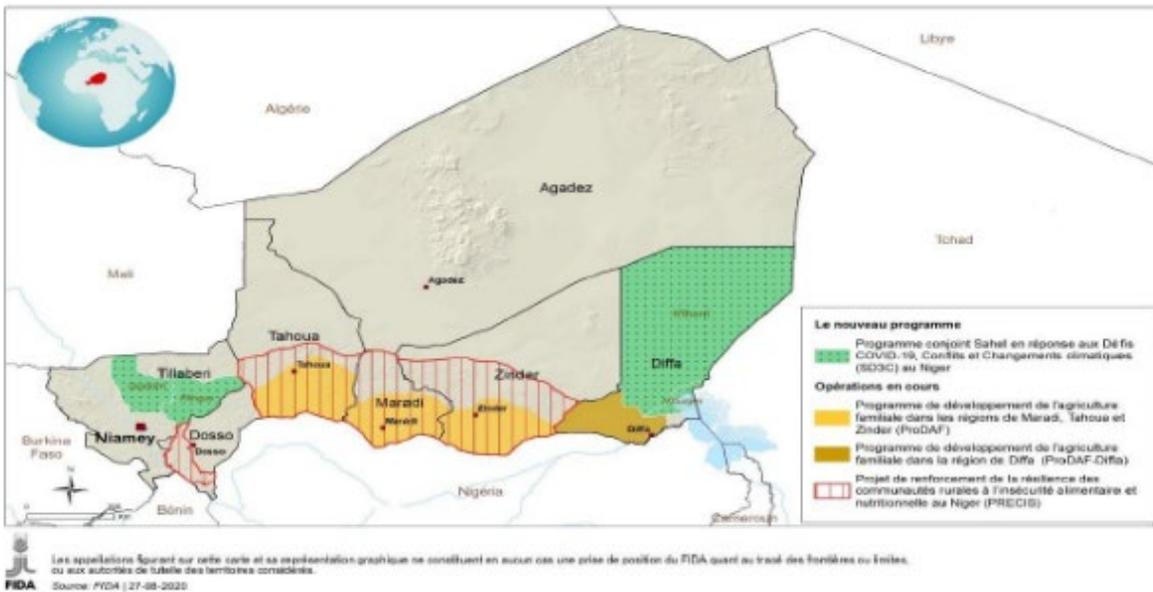
Source: Map in public building in Niamey

Figure A.2 : Map of PASADEM project area, Maradi region



Source : PASADEM Terminal Evaluation

Figure A.3 : Couverture géographique des interventions du PNF



Source : République du Niger. Ministère de l'Agriculture. (No date). **Programme Niger-FIDA (PNF)**. Cellule nationale de représentation et d'assistance technique (CENRAT).

Table A.2 : IFAD projects in Niger with promotion of Assisted Natural Regeneration (RNA)

Projets de FIDA	Périodes	Coût (Million USD)	Zones d'intervention	Statut
Projet de renforcement de la résilience des communautés rurales à l'insécurité alimentaire et nutritionnelle (PRECIS)	2020 - 2026	195,91	Dosso, Tahoua, Maradi et Zinder	Actif
Programme de développement de l'agriculture familiale dans la région de Diffa (PRODAF-Diffa)	2018 - 2025	25,48	Diffa	Actif
Programme de développement de l'agriculture familiale dans les régions de Maradi, Tahoua et Zinder (PRODAF- Maradi, Tahoua et Zinder)	2015 - 2023	206,85	Maradi, Tahoua et Zinder	Actif
Projet d'appui à la sécurité alimentaire et au développement dans la région de Maradi (PASADEM)	2011 - 2018	31,71	Maradi	Clôturé
Projet de Promotion de l'Initiative Locale pour le Développement à Aguié (PPILDA)	2002 - 2013	17,76	Maradi (Aguié)	Clôturé
Programme d'Appui aux Initiatives et Innovations Paysannes	1998-1999	ND	3 Villages Aguié	Clôturé
Projet de développement rural d'Aguié (PDRAA)	1991 - 2001	16,98	Maradi (Aguié)	Clôturé

Source: République du Niger. Ministère de l'Agriculture. Mars 2022.

Table A.3 - Socio-economic benefits and governance at design and achievements at completion

(Green font in table emphasizes environmental activities and benefits that lead to and are closely linked to socio-economic benefits)

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
3381 UNDP	SIP: Oasis Micro-Basin Sand Invasion Control in the Goure and Maine Regions (PLECO)	2010-2015	<p>Improved [agricultural] productivity is the main project objective:</p> <p>Development of ecosystem services and ecosystem-based livelihoods leading to a 20% increase in productivity of agro-pastoral areas</p>	<p>Most direct socio-economic benefits were short-term; cash-for-work; selling of tree seedlings etc.</p> <p>Agricultural productivity increases materialized only slowly with growing trees (fodder) and through vegetable gardens being established by successor project</p>	<p>Local land tenure and management institutions would be strengthened</p> <p>COFO land commissions to be established</p>	<p>Conflict resolution: COFO land commissions were established and were functional at project completion</p> <p>Effective representation of stakeholder groups during implementation</p> <p>(Particip. process. Particip. M&E etc.)</p>
3382 World Bank	SIP: Community Driven SLM for Environmental and Food Security (CAP-2)	2008-2013	<p>Socio-economic benefits would come from micro-projects implemented according to community development plans.</p> <p>These could be about:</p>	<p>Many social and economic microprojects were carried out by CAP-2 at the local level and supported environmental microprojects (all through World Bank co-finance). The very poorest also benefited through these microprojects</p>	<p>Improved institutional and legal framework for decentralized, participatory local development: Effective representation of stakeholder groups</p>	<p>Local capacity development and investing in socio-economic activities helped to successfully implement participatory commune development plans and carry out local social, economic and environmental microprojects.</p>

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
			Income generating activities, health, education, access to communal services, civil society engagement, gender equality and women's empowerment	<p>that improved their access to education, health services and potable water.</p> <p>CAP-2 also benefited the poorest through its cash-for-work programs implemented with GEF funds for 472 environmental microprojects. This action was especially important during the two years when natural disasters occurred.</p> <p>Slightly more than one-half of the beneficiaries of revenue-generating activities were women.</p>	<p>Improved capacity of communes to address priority needs of communities, manage micro-projects, mobilize adequate resources, implement and monitor local development activities.</p> <p>Property rights and security of tenure (setting up communal land tenure committees (COFOCOM))</p>	<p>Ministerial collaboration and successful establishment of decentralized government administrations helped in supporting the delivery of services to these local communities.</p> <p>GEF contributed to setting up land tenure commissions in 99 percent of the targeted 165 communities that started delivering land titles</p>
3383 IFAD	SIP: Agricultural and Rural Rehabilitation and Development Initiative (ARRDI / PASADEM)	2012-2016	Promoting conservation agriculture and environment-friendly alternative income sources	<p>SLM and conservation agriculture contributed to stronger socio-economic co-benefits, there is a positive nexus.</p> <p>Environmentally-friendly alternative income sources were difficult to implement and sustain.</p>	<p>Support for NRM village management committees</p> <p>Maradi SLM platform of regional authorities and implementation partners</p>	<p>Property rights and security of tenure were taken into account in project implementation</p> <p>Conflict resolution was implemented</p> <p>Effective representation of stakeholder groups</p>

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
					Project will focus on reduced conflicts due to expanded cropping lands	
5252 World Bank	Third Phase of the Community Action Program (CAP-3)	2013-2017	<p>Assisting Communes to make investments to improve sustainable land management, create and ensure maintenance of essential socioeconomic infrastructures and facilities, and diversify income generating activities.</p> <p>Activities will entail the implementation of investments in Commune Development Plans as well as those of Inter-Communal Development Initiatives.</p>	<p>Commune Development Plans micro-projects and various infrastructure investments were successfully implemented, often exceeding targets, and complemented GEF and World Bank funded environmental micro-projects and SLWM activities.</p>	<p>Supporting initiatives aimed at building the capacities of participating communes and improving local governance and institutions.</p> <p>Other activities will aim at building inter-communal collaboration and building the capacities of regional governments and national institutions.</p> <p>Participation and representation of marginalized groups,</p>	<p>Results achieved in governance activities in CAP-3 are similar to the ones reported by GEF ID 3182 (CAP-2) above</p>

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
			<i>(information from World Bank PAD, no GEF PIF available)</i>		particularly women and youth in decision-making <i>(information from World Bank PAD, no GEF PIF available)</i>	

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
5436 World Bank	Disaster Risk Management and Urban Development Project	2013- 2021	<p>Indirect socio-economic support through enhanced flood protection and water supply infrastructure:</p> <p>Population to benefit from improved drainage canals and drinking water supplies (no direct GEF involvement)</p> <p>Targeted flood protection and SLWM interventions to increase resilience (with GEF involvement in biological river bank protection and SLWM practices for recovery work)</p> <p><i>(information from World Bank PAD, no GEF PIF available)</i></p>	<p>The project successfully provided indirect socio-economic support to complement ecological recovery work financed by GEF.</p>	<p>The project made substantial investments into flood protection and disaster risk management, mostly urban (and through World Bank co-finance); No major investments into rural governance or NRM management as such were mentioned.</p> <p><i>(information from World Bank PAD, no GEF PIF available)</i></p>	n/a

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
9136 IFAD	Niger Food-IAP: Family Farming Development Programme (ProDAF)	2016-2023	<p>Generate sustainable family farms to allow rural producers, including women and youth, to diversify their production, increase their yields and their capacities to adapt to external shocks, notably climate.</p> <p>Improving food security and smallholder resilience to drought through the promotion of small-scale irrigation on 7,500 hectares</p> <p>Efficient marketing of agro-silvo-pastoral production surplus through half-bulk markets</p>	<p><i>See country case study report of visited sites</i></p>	<p>Integrating climate dimensions into communal development plans, based on participatory mapping</p> <p>Capacity-building of Water Users' Associations</p> <p>Conflict resolution mechanisms:</p> <p>ProDAF will work through COFOs to clarify/mediate land status and water use between agriculture and livestock producers; also regarding the location and use of small dams</p> <p>Strengthened national M&E and decision making on linking sustainable ecosystem management and improvements of food security</p>	<p><i>See country case study report of visited sites</i></p>

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
					and resilience, through a convention with HCl3N.	
9405 UNEP	Integrated Management of Oasis Ecosystems of Northern Niger (IMOEN-NN)	2020-2024	Indirect socio-economic support through uptake of SLM, SFM and BD measures delivering ecosystem and development benefits over	<i>Ongoing, early stage</i>	Enhanced enabling environment for oasis and arid valley forests ecosystem conservation in Niger through improved capacity of national	<i>Ongoing, early stage</i>

GEF ID Implem. Agency	Project Name	Phase/ period	Socio-economic benefits		Governance	
			At design	Achievements	At design	Achievements
			60,000 ha, including women's gardens The project would carry out a socio-economic assessment on the dynamics of the ecological and socioeconomic (agriculture, pastoral, etc.) oasis and arid valley forests ecosystems early on in the project to identify opportunities and inform an integrated M&E system		and local institutions on integrated NRM Strengthened capacities of local communities and institutions to manage oasis and arid valley forests ecosystems sustainably	
9825 UNEP regional	Large-scale Assessment of Land Degradation to guide future investment in SLM in the Great Green Wall countries	2019-2022	No direct socio-economic benefits	<i>Ongoing, early stage</i>	Scientifically based evidence of current and past LD interventions supporting decision making processes for long-term impacts in GGW countries	<i>Ongoing, early stage</i>

Source: GEF PIFs, World Bank PADs, ICRRs and SCCE IEO excerpts

CCXIX.

TECHNICAL DOCUMENT 11 -- UZBEKISTAN CASE STUDY REPORT

Strategic Country Cluster Evaluation (SCCE): GEF Support to Dryland Countries

Uzbekistan Case Study Report

Introduction

- ccxx. This Uzbekistan Case Study is part of the Strategic Country Cluster Evaluation (SCCE): Global Environment Facility (GEF) Support to Drylands Countries. Case studies are a main component of the SCCE to enable in-depth exploration of the factors driving performance and sustainability of drylands-related interventions. Case studies focus on the two overarching evaluation objectives:
- (i) assessing the relevance and coherence of GEF investments in dryland countries, and
 - (ii) assessing GEF results and sustainability in terms of environmental benefits and associated socioeconomic co-benefits in dryland countries.
- ccxxi. Uzbekistan was one of six case study countries chosen for this evaluation. The case studies were purposively selected by the GEF Independent Evaluation Office (IEO), with consideration of aridity typologies, dryland-related environmental challenges, GEF world regions, and presence of completed and ongoing projects in the country.

Methodology

- ccxxii. The Uzbekistan Case Study built on analyses conducted in-house by the GEF IEO, paired with an in-person mission in Uzbekistan from March 16 – 26, 2023. The study was conducted by an international consultant and a national consultant. It used a mixed methods approach, with desk review of project and country documents and interviews with representatives of the Government of Uzbekistan, implementing agencies and project staff, and external stakeholders. Data from geospatial analysis was reviewed during the mission, with the goal of facilitating discussion on factors that contributed to observed changes. Interviews were conducted with representatives from implementing agencies at the central level in Tashkent and remotely across the GEF portfolio, complemented by interviews with project beneficiaries and stakeholders at project sites and communities in Karakul and Zaamin Districts for the Reducing Pressures project (GEF ID 4600).
- ccxxiii. The team received substantial support from UNDP in facilitating the in-person mission to visit sites and stakeholders. However, there were limitations to primary data collection. For example, it was not possible to secure a response from the Ministry of Agriculture to understand the sustainability of some project outcomes despite targeted and repeated outreach. The evaluation team sought other perspectives to understand the sustainability of outcomes to the extent possible. Midway through the evaluation, the evaluation team identified additional GEF drylands projects in Uzbekistan that were

not part of the original list, and incorporated findings about these projects based on secondary data through ProDocs and terminal evaluations.

Scope

- ccxxiv. The case study covers 10 GEF-funded projects on drylands in Uzbekistan approved and/or implemented from the GEF-4 period onward, spanning a 15-year period between 2008 and 2023. Of these projects, four are closed, four are ongoing, and two are CEO endorsed and approved for project implementation (Table 1). These projects represent roughly a third of GEF's broader portfolio in the country, which dates back to 1996.
- ccxxv. This report provides fieldwork and post-completion sustainability analysis of the Reducing Pressures on Natural Resources from Competing Land Use in Non-Irrigated Arid Mountain, Semi-Desert, and Desert Landscapes project (hereafter referred to as the Reducing Pressures project, GEF ID 4600), whose issues and lessons are shared by other projects in the portfolio. The project sought to implement practical solutions to reduce competitive pressure between pasture use and forestry in Karakul (arid) and Zaamin (semi-arid) Districts, two ecologically and socioeconomically representative districts in the country. In each district's baseline situation, the majority of rangelands were degraded, and forest fund land indicated as without forest cover. The project paired a) field-level investments to transform rangeland and forest management with investments in the enabling environment to b) strengthen the policy, legal, and institutional framework for integrated and sustainable management of rangelands and forests and c) build institutional capacity to develop supporting policies, legislation, and field operations.
- ccxxvi. For the purposes of this evaluation, all projects analyzed included drylands and were considered as relevant for learning lessons on environmental, socioeconomic, and governance issues for drylands.

Table 1: Uzbekistan GEF projects approved 2013-2023

GEF ID	Agency	Project Name	Phase/ period	Geography	Focal Area	Land Types	Status	GEF Grant (US\$ million)	Co-finance (US\$ million)
3556	UNDP	Strengthening Sustainability of the National Protected Area System by Focusing on Strictly Protected Areas*	GEF4 (2008-2017)	Sherabad District, Surkhandarya Province	Biodiversity	Forestland, pastureland, grassland, other	Implemented	0.975	1.2
3950	UNDP	Mainstreaming Biodiversity into Uzbekistan's Oil-and-Gas Sector Policies and Operations*	GEF4 (2010-2016)	Ustyurt Plateau	Biodiversity	Grassland	Implemented	.95	7.4
4600 UNDP	UNDP	Reducing Pressures on Natural Resources from Competing Land Use in Non-irrigated Arid Mountain, Semi-desert and Desert Landscapes	GEF5 (2014-2019)	Karakul, Zaamin Districts / National	Land Degradation	Pastureland, forestland, cropland	Implemented	2.5	9.9
4642 WB	WB	Sustainable Agriculture and Climate Change Mitigation Project	GEF5 (2013-2018)	Ulugnor, Andijan Province; Yazyavan, Fergana; Buka, Tashkent; Bayaut, Syrdarya; Pastdargom, Samarkand; Mirishkor,	Multi Focal Area	Cropland	Closed	14.0	108.0

				Kashkadarya; Alat, Bukhara					
8031	UNDP	Sustainable Natural Resource Use and Forest Management in Key Mountain Areas Important for Globally Significant Biodiversity*	GEF6 (2017-2022)	Ugam-Chatkal National Park	Multi Focal Area	Pastureland, forestland	Implemented	6.2	25.3
9094 FAO	FAO	Integrated Natural Resources Management in Drought-prone and Salt-affected Agricultural Production Landscapes in Central Asia and Turkey (CACILM2)	GEF6 (2017-2022)	Bukhara, Romiton, Kamashi, Uzbekistan (part of regional multi-country project)	Multi Focal Area	Cropland	Under Implementation	11.9	64.9
9190 FAO	FAO	Sustainable Management of Forests in Mountain and Valley Areas	GEF6 (2018-2023)	Kitab, Pap, Dekhkanabad, and Syrdarya	Multi Focal Area	Forestland	Under Implementation	3.2	18.7
10356 UNDP	UNDP	Conservation and sustainable management of lakes, wetlands, and riparian corridors as pillars of a resilient and land degradation neutral Aral basin landscape supporting sustainable livelihoods	GEF7 (2022-2026)	Alat, Karakul, Amudarya, Moynaq Districts	Multi Focal Area	Cropland, pastureland, forests + broader lake, wetland, and riparian corridor	Under Implementation	3.6	59.3

10367 FAO	FAO	Sustainable Forest and Rangelands Management in the Dryland Ecosystems of Uzbekistan	GEF7	Jondor District, Bukhara Region; Nurata District, Navoi Region	Land Degradation	Forests, rangelands	CEO Endorsement Cleared	4.1	37.5
10601 FAO	FAO	Food System, Land Use and Restoration Impact Program in Uzbekistan	GEF7 (2022-2026)	Kashkadarya, Khoresm, and Karakalpakstan Regions	Multi Focal Area	Cropland	CEO Endorsement Cleared	6.0	72.8

* These projects were identified and added part of the way through after the initial sampling, with analysis primarily based on document review.

Findings

- ccxxvii. The findings are presented according to the key questions as follows: relevance; coherence; environmental results, socioeconomic benefits, and sustainability; and gender, resilience, and private sector.

Relevance

- ccxxviii. GEF drylands support is highly relevant in Uzbekistan, a country of drylands battling chronic and severe land degradation. About 68% of the country's land falls in arid and semi-arid areas, and 25% in extra-arid areas.²¹⁸ While dry and landlocked, Uzbekistan sits at the junction of several bio-geographical regions in Central Asia and carries great diversity of natural conditions and richness in its flora and fauna.²¹⁹ Yet degradation of drylands has accelerated in the past two decades across pastures and rangelands, croplands, forestlands, and other non-irrigated areas, disrupting natural ecosystems and biodiversity as well as food, water, and income security, posing serious risks to the country's economy. The World Resources Institute ranks Uzbekistan as the 25th most water-stressed country globally.²²⁰ Against this backdrop, the GEF has provided substantial dedicated support to drylands-specific issues of water scarcity, climate variability, land degradation, desertification, and drought—supporting government strategies and national priorities spanning economic development, food security, adaptation to climate change, and environmental stability.
- ccxxix. GEF projects have covered many of the hotspots of land degradation and areas in need of protection identified through national assessments. Figure 1 shows the locations of all GEF projects covered in the case study. The main hotspots identified in the country's Land Degradation Neutrality (LDN) target-setting report include the irrigated and non-irrigated zones of the Aral Sea area, spanning the Lower Amudarya River within the Republic of Karakalpakstan and Khorezm Region. Widespread degradation in these areas reflect catastrophic environmental change as a result of the Aral Sea drying out, with droughts becoming more frequent over the last decade.²²¹ Other hot spots include Romitan District in Bukhara Region, located in the desert arid zone. Uzbekistan's Fifth National Report on Conservation of Biodiversity (2015) noted Bukhara, Navoi, and Kashkadarya provinces, the lowlands of the basin of the River Amudarya, Ferghana Valley and the Golodnaya Steppe as areas especially affected by land degradation. The draft second National Action Plan to Combat Desertification (NAP-2) highlighted Bukhara, Navoi, Kashkadarya, and Surkhandarya as areas of the country with the highest

²¹⁸ Uzhydromet. Distribution of the territory of Uzbekistan by the aridity index. Cited in UNCCD Secretariat and Global Mechanism (2019). [Summary report on the LDN target setting programme in the Republic of Uzbekistan](#).

²¹⁹ UNDP (2015). Fifth National Report of the Republic of Uzbekistan on conservation of biodiversity. Available: <https://www.cbd.int/doc/world/uz/uz-nr-05-en.pdf>

²²⁰ <https://www.wri.org/applications/aqueduct/country-rankings/>

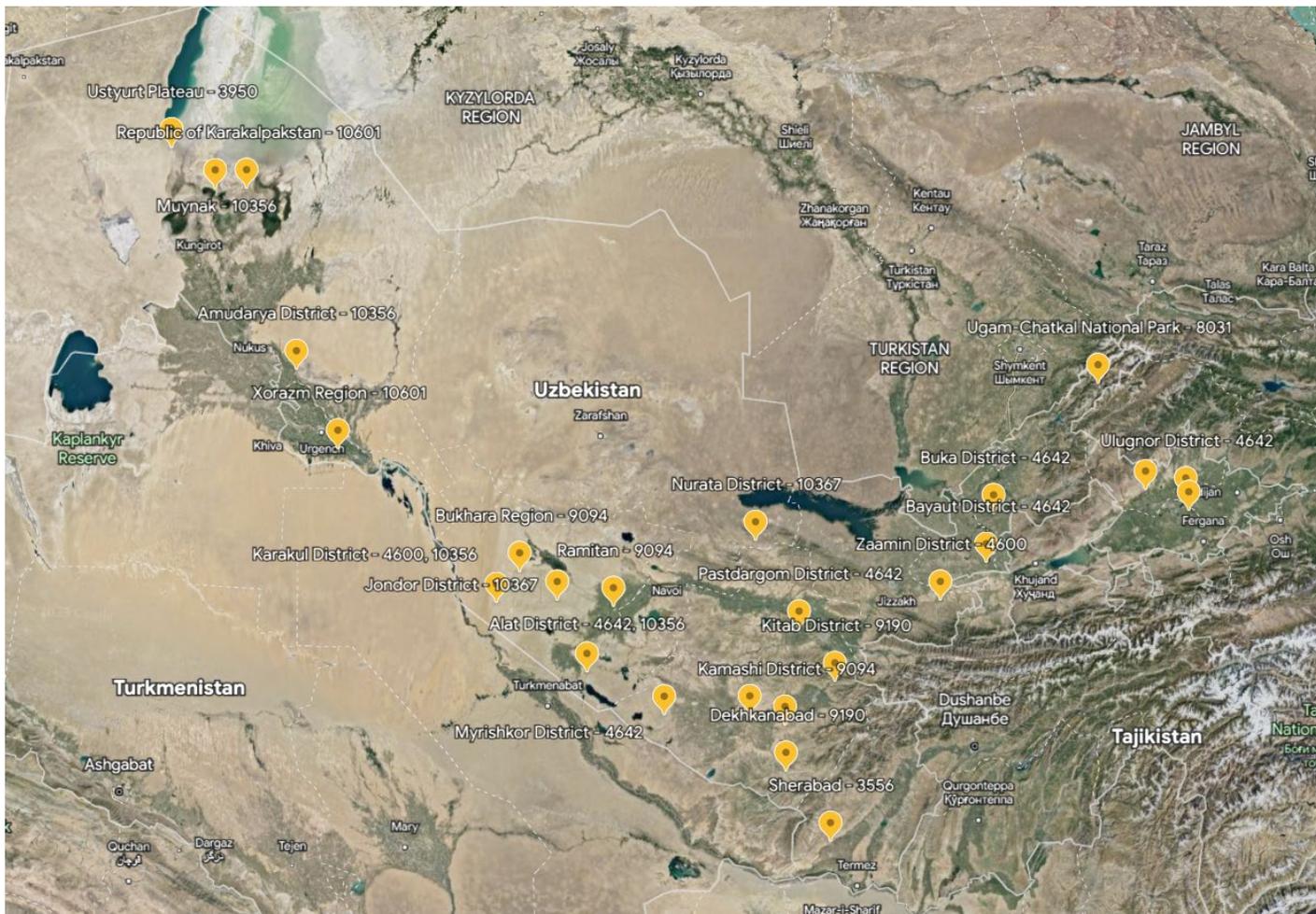
²²¹ Land Degradation Neutrality Target Setting Programme (2019). [Summary report on the LDN Target Setting Programme in the Republic of Uzbekistan](#). Secretariat and the Global Mechanism of the UNCCD. Global Water Partnership (2022). Uzbekistan Country Survey Report: Draft concept for revision the National Action Program to Combat Drought and Land Degradation in Republic of Uzbekistan.

number of days with atmospheric drought.²²² The locations of on-the-ground interventions for various projects (GEF IDs 4600, 9094, 10356, and 10601) cover several of these same hotspots. The Sustainable Forest and Rangeland Management project (GEF ID 10367) focuses its interventions in Bukhara-Navoi, where the confluence of forestry, grazing, irrigated and arable farming all compete for the same land in one of the driest parts of the country.²²³

²²² Global Water Partnership (2022). [Uzbekistan Country Survey Report: Draft Concept for Revision: the National Action Program to Combat Drought and Land Degradation in the Republic of Uzbekistan.](#)

²²³ 10367 Project Document

Figure 1: Locations of GEF-4–GEF-7 projects involving drylands in Uzbekistan²²⁴



²²⁴ For an interactive version of the map: https://earth.google.com/earth/d/19LRYdut7Lfmweuv3iEdI5NhBW_uwvf-p?usp=sharing

- ccxxx. The broader portfolio includes on-the-ground support in districts covering all 12 regions of the country, spanning semi-arid to extra-arid climates. GEF IDs 4600, 3556, 8031, and 9190 include areas in the central and eastern parts of the country with significant land degradation, and protected areas that serve as habitats for rare and endangered species including the Ugam-Chatkal National Park in the Tian Shan Mountains and the Ustyurt Plateau. The one project that follows a different logic for prioritization is the SACCMP project (GEF ID 4642), its focus on renewable energy and energy efficiency leading to a diversified, fragmented approach covering eight oblasts throughout the country.
- ccxxxi. GEF support has advanced interventions across multiple levels of governance to address environmental challenges varying by land type. Natural soil salinization and climate change have been common challenges across the landscapes in the portfolio. Human population growth and associated expansion and intensification of land use for production and extraction manifest as different drivers of degradation by land type.²²⁵ Degradation of rainfed pastures and rangelands—primarily located in the desert belt—is primarily due to overgrazing, compounded by lack of pasture watering infrastructure, clearing of vegetation for fuel, and drifting sands.²²⁶ Interviews during the May 2023 evaluation mission identified oil and gas drilling as an additional driver of pasture degradation, negatively affecting water sources. Oil-and-gas companies have also been *seeking new reserves in other landscapes, exploring and producing in increasingly fragile ecosystems. Degradation of the country’s small area of forests owes to the fact that they are primarily used as pastures—with cattle breeding the largest threat to reforestation within and around forests.²²⁷ Subsistence harvesting for firewood also contributes to forest degradation. Irrigated agricultural lands struggle with water insecurity, exacerbated by irrational water use on irrigated areas, driven by insufficient water pricing, technical knowledge, and financing for climate-smart technologies.
- ccxxxii. GEF interventions have sought to address legal, political, and institutional barriers while building technical and financial capacities to sustainably manage, conserve, and restore drylands. Such measures feature across the GEF-5 (GEF IDs 4642, 4600), GEF6 (9094, 9190), and GEF-7 (10356, 10367, 10601) projects in Uzbekistan through a mix of farm-, district-, protected area- and national-level policy/strategy interventions. The portfolio supports improved management, restoration, and reduced pressure on rangelands, forestlands, and croplands; other non-irrigated arid mountain, semi-desert, and desert landscapes; and lakes, wetlands, and riparian corridors.
- ccxxxiii. Project concepts have featured integrated land management, though those implemented to date have found it challenging to practice. At its essence, integrated ecosystem management is about maintaining ecosystems to meet both environmental

²²⁵ UNDP (2015). Fifth National Report of the Republic of Uzbekistan on conservation of biodiversity. Available: <https://www.cbd.int/doc/world/uz/uz-nr-05-en.pdf>

²²⁶ 10356 GEF/UNDP Project Document

²²⁷ 10367 GEF Project Document.

and human needs.²²⁸ Drivers of degradation often interact, requiring an integrated response across landscapes and users. Historically, for example, insufficient funding for the forest sector led the forestry sector to seek additional lands by leasing out pastures, which reinforced overgrazing problems. And while land degradation is the common denominator of the GEF projects analyzed in Uzbekistan, the vast majority of projects cover multiple focal areas, including biodiversity, renewable energy and energy efficiency. Several projects were designed to advance integrated natural resource and/or integrated land management, factoring in objectives across sectors and resources, as well as landscape and ecosystem connectivity. Examples include management of rangelands and forests at the landscape level (GEF ID 4600), drought-prone and salt-affected agricultural production landscapes across national boundaries (GEF 9094), land, lake, wetland, and riparian ecosystems through productive landscapes and protected areas (GEF ID 10356), biodiversity considerations for oil-and-gas operations (GEF ID 3950), multifunctional forest management (GEF ID 9190), and multifunctional wheat production landscapes (GEF ID 10601).

- ccxxxiv. The Reducing Pressures project (GEF ID 4600) was premised on integrated pastureland and forest management to reduce pressures on natural resources, and improve the socioeconomic stability of communities. As implementing agency, UNDP laid groundwork during project design²²⁹ to define practical mechanisms for inter-ministerial coordination of ILM by the National Inter-Ministerial Land Use Committee, and gauge interest from stakeholders for integrated land use planning. Yet when it came to implementation, there was little evidence of integrated land management taking place in target districts, a risk that could also affect other projects in the portfolio.
- ccxxxv. The Ustyurt Steppe project (GEF ID 3950) introduced the concept of a mitigation hierarchy within Uzbekistan in the oil-and-gas sector. This was a major step toward mainstreaming biodiversity considerations in the extractives sector. Nonetheless, there was a tendency to emphasize offsetting and the payment of compensation rather than the full spectrum of the mitigation hierarchy (avoid-minimize-mitigate), partly as a function of compensation for damage already having precedent in Uzbekistan's laws.
- ccxxxvi. Transnational approaches have been relevant for addressing issues such as drought, soil salinity, and habitat loss shared by countries in Central Asia and Turkey, adapting over time to strengthen country ownership and coordination. Incongruous national approaches to water management have accelerated transboundary water supply issues in the Syr Darya and Amu Darya river basins. Historically, upstream use of water for construction of large water dams and hydropower stations by Kyrgyzstan and Tajikistan have been major drivers of Aral Sea loss and desertification in Uzbekistan, for example.²³⁰

²²⁸ UNEP definition cited in Ibrakhimov, M. (2021). Integrated natural resources management worldwide and in Uzbekistan. Tashkent. FAO and Universität Greifswald. <https://doi.org/10.4060/cb0465en>

²²⁹ 4600 Project Preparation Grant

²³⁰ Khaydarov, Nizamiddin (2015). Agricultural development in Uzbekistan: agricultural reforms versus transboundary water issues. Available: <https://core.ac.uk/download/pdf/234682397.pdf>

- The GEF portfolio includes a regional project, CACILM-2, that coordinates efforts by six countries to scale up integrated natural resources management (INRM), targeting representative agro-ecosystems and landscapes where climate change impacts have led to greater droughts and soil salinity. The project is being implemented under the UNFCCC and UNCCD frameworks to which Uzbekistan is a signatory. The design of CACILM-2 improved upon its predecessor, the CACILM-1 partnership, in seeking to address bureaucratic governance, reliance on international funding, limited country buy-in, absence of strategy to scale INRM, weak integration of resilience into policy and decisionmaking, poor technical capacities of institutions and agricultural extension services, and inadequate knowledge-sharing.²³¹ CACILM-2 was designed as a lighter partnership with a focus on knowledge management, intended to secure more sustained support from participating countries, relying more on in-country co-financing through links with ongoing national programs, NGOs, and land and water user associations. The partnership still grappled with a complex and cumbersome chain of command, though helped by good interactions among project staff and FAO staff. While GEF-supported regional projects sometimes serve as clusters of largely nationally designed and implemented national subprojects, an interviewee noted that the CACILM-2 project featured more collaboration between countries to address transboundary issues.
- The Mountain Ecosystems Project (GEF ID 8031) worked to strengthen the capacity for transboundary planning and management of responsible government agencies in Uzbekistan, Tajikistan, Kyrgyzstan, and Kazakhstan in securing migration corridors for key wildlife species, combatting wildlife poaching, and reducing the illicit demand for illegal wildlife products.

ccxxxvii. Land degradation neutrality (LDN) has provided a guiding framework for target-setting in more recent GEF projects. The Government of Uzbekistan prepared the Land Degradation Neutrality (LDN) Target Setting Report in 2019, confirming the feasibility of using the three global indicators of land cover change, net primary productivity, and soil organic carbon for monitoring progress. Since then, Uzbekistan has worked to integrate the monitoring system for LDN indicators into existing national land-use monitoring systems spanning SLM, SFM, and landscape restoration.²³² Later projects such as the Sustainable Forest and Rangeland Management project (GEF ID 10367) and Aral Sea project (GEF ID 10356) are more explicit about advancing toward LDN through integrated management of land, lake, wetland, and riparian ecosystems, incorporating engagement of private sector and local communities.

²³¹ CACILM-1 convened Central Asian countries and development cooperation partners to implement the UNCCD through ILM and natural resource management. CACILM-1 was a complex partnership involving many layers of steering committees, multi-country and national secretariats and national coordination councils. Nurymgereyev, K. (2016). Preparation of Multi-Country Component 1, CACILM-2. PPG report prepared for FAO's Sub-Regional Office for Central Asia. 9094 MTR

²³² 10367 Project Document.

- ccxxxviii. Over time, GEF projects have featured greater emphasis on information and monitoring systems to address gaps in evidence-based management. Some foundations for drylands monitoring were laid through the multi-country Land Degradation Assessment in Drylands (LADA) project implemented by FAO (2006-2009) on developing a methodology for mapping land degradation and sustainable land management; in Uzbekistan, this yielded information for mapping salinity and other indicators of degradation.²³³ Yet earlier GEF projects (GEF IDs 4600, 4642) still struggled with a lack of strong M&E and underlying SMART indicators to assess progress against baseline conditions and support adaptive management over time. The SFM project (GEF ID 9190) has been building a national forest assessment and monitoring system, drawing on synergies with other FAO work on natural forest and tree resources assessment and monitoring,²³⁴ and a national monitoring, reporting, and verification (MRV) system for climate benefits from the forest sector. The Food Systems, Land Use and Restoration Impact Program project (GEF ID 10601) is developing a national system to monitor progress on LDN indicators, integrated into existing national land use-monitoring systems, and an LDN decision-support system for use at national and subnational levels. These developments in the GEF portfolio have been highly relevant in addressing weak the technical knowledge in the forestry sector and lack of data systems to support evidence-based planning.
- ccxxxix. Field-level activities in GEF projects have tended to struggle with mandate drift and lack of scale compared to activities focused on national strategy and legislative change. Field-level investments have often catered to the priorities of local stakeholders without sufficient linkage to the broader objectives of addressing drivers of land degradation or biodiversity loss. In the case of the Reducing Pressures project (GEF 4600), on-the-ground activities focused on strengthening the socioeconomic situation of dryland users, often without a link to relieving pressure on drylands, straying from the mandate of GEF as an environmental fund.²³⁵ Although GEF's land degradation focal area is unique in including a mandate to generate local socioeconomic benefits, its primary goal is to address land degradation. The project design also insufficiently linked demonstration projects with the upscaling needed for broad development impact. Field-level investment was small-scale²³⁶ and spread thin across diverse ecosystem types, livelihood forms, and regions, spanning tens of different micro-measures, lacking a focused approach to respond to environmental challenges. The Ustyurt Steppe project (GEF ID 3950) similarly experienced mandate drift. The project morphed into a protected areas project with significant attention to establishment and reorganization of the Saigachy Reserve. Less attention was given to the project's overarching goal of mainstreaming biodiversity into the oil-and-gas sector.

²³³ Ibrakhimov, M. (2021). Integrated natural resources management worldwide and in Uzbekistan. Tashkent. FAO and Universität Greifswald. <https://doi.org/10.4060/cb0465en>

²³⁴ 9190 PD

²³⁵ as observed in the terminal evaluation and this evaluation.

²³⁶ The project worked to improve vegetation cover of 6,000 hectares of rangeland and 1,000 ha of forestry fund territory, and to strengthen livelihoods for 50,000 people.

ccxl. GEF project activities focused on improving the policy and institutional enabling environment have been highly relevant in terms of addressing land degradation and other environmental challenges. The Reducing Pressures project (GEF ID 4600) sought to enhance the coherence of Uzbekistan’s policy and regulatory frameworks²³⁷ by developing a comprehensive regulatory framework to establish goals and norms for pasture management.²³⁸ The law established joint responsibility for rangelands between state-level committees on land, environment, and forestry,²³⁹ while giving local governments a strong role in implementation. The law also positioned citizens’ self-governing bodies, non-state non-profit organizations and citizens as key stakeholders for implementation, recognizing pastures as multi-sectoral and multi-stakeholder issues. The project involved a knowledge transfer study tour to Kyrgyzstan as the only country in Central Asia at the time with a Law on Pastures. The project also contributed to development of other strategies covering forestlands and non-irrigated drylands. The SACCMP project (GEF ID 4642) contributed to regulatory reform on renewable energy development.

Coherence

- ccxli. The GEF portfolio is well aligned with many strategic priorities of the Government of Uzbekistan, as articulated through a variety of environmental, development, and sector-specific strategies.²⁴⁰ Uzbekistan’s ambitions to achieve the Sustainable Development Goals (SDGs) by 2030 in particular provide a framework for cross-sectoral coordination and an integrated approach to achieving LDN.²⁴¹
- ccxlii. National government buy-in for sustainable land use practices remains mixed and the overall balance of government priorities favors productivity over environmental considerations. Uzbekistan has been independent for over 30 years but there are still aspects of the government structure and agricultural practices left from Soviet times. A GEF Agency representative noted that much is needed to update approaches in agri-technology management, crop management, and irrigation. Under the GEF projects, new technologies and crop varieties are being piloted and demonstrated to farmers. Yet

²³⁷ Pasture management in Uzbekistan is regulated under a variety of laws and by-laws including the Land Code, the Law “on farming entities,” the Law on Agricultural Cooperatives (shirkat), the Law on Dekhan Farms, and various decisions of the Cabinet of Ministers.

²³⁸ To cover rights and obligations of pasture users, norms and terms of pasture use, regulations on pasture rotation, fees for pasture use, protection and restoration of pastures, and geobotanical survey of pastures and pasture monitoring

²³⁹ The State Committee on Land Resources, Geodesy, Cartography and State Cadaster, and the State Committee on Ecology and Environmental Protection, and the State Committee on Forestry,

²⁴⁰ These strategies include the Welfare Improvement Strategy, Measures for Implementation of National Sustainable Development Goals and Targets Until 2030, Concept of Environmental Protection in Uzbekistan Until 2030, Roadmap for Combating Desertification and Drought (2019-2023), National Strategy for Biodiversity and Action Plan (2019-2028), Land Degradation Neutrality (LDN) target, Intended Nationally Determined Contribution (2017), Strategy for Development of Agriculture in Uzbekistan (2020-2030); the Concept of the Development of Forestry Until 2030; National Forestry Plan, and State Program for Development of Aral Sea Region, 2017-2021.

²⁴¹ 10367 Project Document.

the government has yet to fully welcome these modalities and mechanisms, creating space for misalignment on priorities. In response, GEF has tried to use a bottom-up approach in its projects to demonstrate technologies. When country ownership has been strong, it is often from the angle of development and increasing productivity. For example, country ownership and policy coherence for the Reducing Pressures project (GEF ID 4600) was very high, with the project raising the awareness of decisionmakers of the relevance of sustainable rangeland management—though more so on the potential to improve the productivity of rangeland rather than resolving environmental concerns. The head of the State Committee on Ecology and Environmental Protection noted that norms for the number of livestock per hectare or rotational grazing plans were primarily aimed at increasing the productivity of rangelands.²⁴²

- ccxliii. Through the GEF portfolio, UNDP and FAO have harmonized efforts with UNCCD, UNFCCC, and CBD focal points and used the Operational Partnerships Implementation Modality (OPIM) to enhance country ownership and capacity. National CCD, CBD, and FCCC focal points—the State Forestry Committee, Center of Hydrometeorological Services, and Nature Protection Committee respectively—have been involved in the design of GEF drylands projects. For example, FAO noted it has been closely collaborating with UNFCCC and UNCCD political and operational focal points on the design and implementation of all project initiatives in Uzbekistan, which helps incorporate national priorities into project design. Project designs have typically included the focal points in providing project oversight and/or technical advisory. Yet having an international organization such as FAO and the participation of UNCCD and GEF focal points from each country has often proven insufficient to engage a broader set of stakeholders and national partner organizations.²⁴³ Positioning government agencies as executing entities through the OPIM modality has also helped strengthen country ownership, applied across the GEF country portfolio. No government agencies have dominated in serving the role of executing agency, with a spread across seven agencies. And while each project featured a single agency as executing agency, it included various additional agencies in advisory or oversight roles. Significant GEF and other international support went to investing in the capacity of these agencies and providing technical support.
- ccxliv. Institutional ownership, policy coherence and sustainability of efforts incubated through GEF projects have been mixed due to siloes within and between agencies, and government restructuring and turnover. The State Committee on Land Resources, Geodesy, Cartography, and State Cadaster, for example, was the executing agency for the Reducing Pressures project (GEF ID 4600). The project would have benefited from stronger integration into the host agency to enable more institutional capacity building and continuation of activities after project closure. Yet in 2022, the Committee was split up amid a larger restructuring of government agencies, its functions redesignated between the Ministry of Agriculture (land resources and geodesy) and the Ministry of Economy and Finance (cadaster). The individuals formerly engaged with the project are

²⁴² 4600 TE.

²⁴³ 9094 MTR.

no longer there, either fired or passed away during the COVID-19 pandemic. Coordination of different institutions was subject to a series of reorganizations during project implementation, with new government units (e.g. committees) formed and allocated to other ministries. The Ministry of Agriculture and Water Resources, while positioned as the main policy partner during project design, served no major role during project implementation as responsibilities for land, pasture, and livestock management shifted to other organizations.

- ccxlv. The Department of Forestry, formerly housed under the Ministry of Agriculture and Water resources, had project ownership issues. As the executing agency of the Zapovednik project (GEF ID 3556), where the Project Implementing Unit operated as an independent rather than integrated unit within the Department.²⁴⁴ The department was later replaced by the State Forestry Committee reporting directly to the Cabinet of Ministers. The State Committee on Forestry was then repositioned as an agency under the new Ministry of Ecology, Environmental Protection and Climate Change (former Ministry of Natural Resources) as part of reforms in 2023 to streamline the number and responsibilities of government authorities. While these reforms have affected institutional memory, the rationalization of agencies should hopefully increase efficiency and coherence in future GEF projects.
- ccxlvii. Interagency coherence of approaches has varied based on the level of clarity or harmonization of government mandates, and integration across sectors. One representative noted that GEF projects involving pasturelands and rangelands remain a sensitive topic for the government in terms of which ministry is responsible—sometimes said to be under the jurisdiction of the Ministry of Agriculture, other times under the Ministry of Ecology. On the other hand, water issues have found their way into land and forestry legislation and other laws on groundwater resources and nature protection. In recent years, Uzbekistan has undertaken environmental reforms, prompting the need to harmonize water-related legislative and normative acts within the 2019 legislation on environmental protection,²⁴⁵ the most central document that addresses coordination issues and provides the background for several GEF projects.
- ccxlviii. Coherence among GEF projects has been mixed. Certain projects have synced with earlier or parallel projects, while others have duplicated efforts.
- On pasture management, the Sustainable Forest and Rangeland Management project (GEF ID 10367) builds on the Reducing Pressures project (GEF ID 4600) in aligning the Law on Pastures with LDN priorities to ensure policy coherence. While it did not intend so at design, the SFM project (GEF ID 9190) team also

²⁴⁴ 3556 TE.

²⁴⁵ Decree of the President of the Republic of Uzbekistan of October 30, 2019, No. UP-5863 "On approval of the Concept of environment protection of the Republic of Uzbekistan until 2030"

adapted and participated in all stages of the adoption of the Law on Pastures, including development of specific provisions.²⁴⁶

- On forests, both the Reducing Pressures project and SFM project contributed to the Concept for the Development of the Forestry Sector until 2030.
- The Reducing Pressures project repeated practices already tested in other projects, including other UNDP/GEF projects in Uzbekistan.²⁴⁷ In particular, the 17 NRM best practices²⁴⁸ applied in the project's target districts had all been tested before and demonstrated as useful in other GEF, GIZ, World Bank and other efforts.²⁴⁹ The project design noted that these practices would not be applied in isolation but as integrated packages of interventions. Overlap with the UNDP-GEF SLM project was substantial, as one of the project regions was identical, and the approach was very similar. During the evaluation mission, it was not possible to find evidence of these practices being applied outside of project sites. In short, there could have been more resources devoted to replication and upscaling rather than demonstration of the same practices. And while the project was part of the multi-donor CACILM initiative,²⁵⁰ the TE found that the project's ties with CACILM were modest.

ccxlvi. GEF project partnerships with influential co-financing agencies in Uzbekistan (e.g. World Bank, SDC, GIZ) and UN agencies (UNDP, FAO) have enabled good leverage while domestic co-financing has varied in delivery against original commitments. The CACILM-2 project achieved a national co-financing level more than five times higher than originally committed, a testament to the strong ownership and coordination by agencies including the Ministry of Agriculture, Ministry of Water Resources, State Forestry Agency, and Hydrometeorology Center. Other GEF projects have exceeded committed co-financing, but were either unreported or not well communicated. The Reducing Pressures project secured much less in co-financing than what was originally committed.

²⁴⁶ Article No. 5, Chapter 2. Regulation in the field of use and protection of pastures; Article 10, Chapter 2. Regulation in the field of use and protection of pastures; Article 13, Chapter 3. Pasture use; article number 29, Chapter 5. Final provisions.

²⁴⁷ 4600 TE.

²⁴⁸ Practices spanning pasture/livestock, forestry, rainfed-arable farming, and other practices

²⁴⁹ UNDP-GEF projects ("Achieving Ecosystem Stability in Aral Sea and Kyzylkum desert" (SLM Project), Biodiversity Tugai and Nuratau Biosphere Reserves), GIZ rangeland management project, and other projects supported by the World Bank, the EU, ICARDA, ZEF, and others.

²⁵⁰ CACILM is a strategic partnership and umbrella for various projects to restore, maintain, and enhance the productive functions of land in Central Asia, improving economic and social wellbeing of those depending on these resources while preserving ecological functions of the land. Bilateral and multilateral institutions participating in CACILM include the Asian Development Bank (ADB), Canadian International Development Agency (CIDA), German Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), the Global Mechanism of the UNCCD, the International Centre for Agricultural Research in the Dry Areas (ICARDA), the International Fund for Agricultural Development (IFAD), Swiss Agency for Development Cooperation (SDC), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), and the World Bank (WB).

Project co-financing included US\$220,000 from forestry enterprises and US\$320,000 from sheep breeding farms. In actuality, forest enterprises and sheep breeding farms mainly made in-kind contributions including labor, provision of tools, transportation, and meeting facilities, whose monetary value fell below the original commitment. Similarly, the Government of Uzbekistan’s contribution toward project costs was far below the original commitment of US\$6,700,000, estimated as under 5 percent of the commitment.²⁵¹ The actual co-finance expenditures at the TE stage of the project represented only 11 percent of the pledged amount, limiting the leverage of GEF’s investment. The TE noted a broader pattern in GEF projects where GEF pushes for funding recipients to identify and leverage co-financing sources, yet much is counted as co-financing despite not really qualifying as co-financing, and pledges are often inflated without consequence. National agencies carry out other programs related to or complementary to GEF projects and initiatives that may not be reported under GEF project co-financing.

Environmental Results, Socioeconomic Benefits, and Sustainability

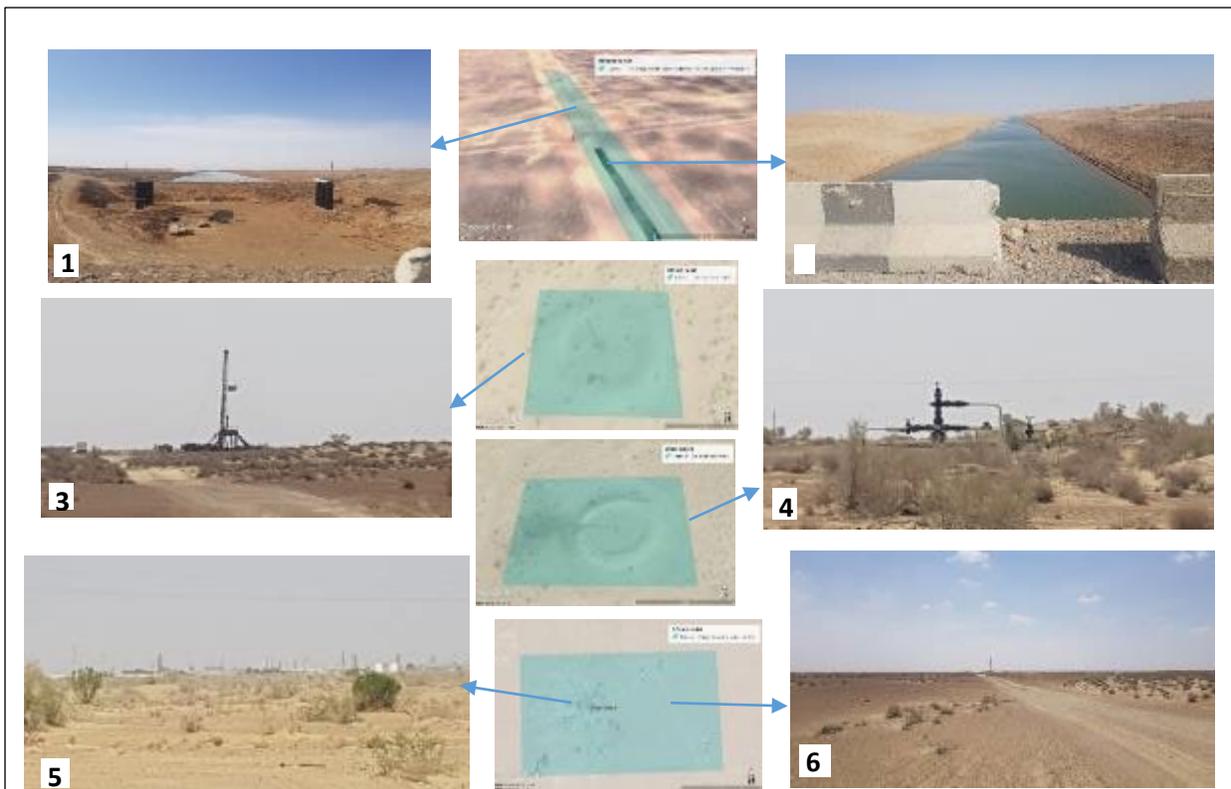
- ccxlix. Within the portfolio of GEF funded work in Uzbekistan analyzed here, four projects—Zapovednik (GEF ID 3556), Ustyurt Steppe (GEF ID 3950), SACCMP (GEF ID 4642), and Reducing Pressures (GEF ID 4600)—have closed.

Field-level investments

- ccl. The components of projects involving working lands—pastureland and cropland—in the Reducing Pressures, SACCMP, and Zapovednik projects largely produced weak environmental outcomes in terms of reducing land degradation. An ongoing project, CACILM-2, has achieved more promising environmental outcomes to date.
- ccli. In the Reducing Pressures project, environmental outcomes fell short of the objective of reducing pressure on natural resources. The TE noted that problems related to land degradation continued to persist and seemed exacerbated, with high population growth resulting in rapidly expanding cities and increased pressure on natural resources, despite reducing pressure having been the main intended impact of the project. The evaluation mission confirmed land degradation has continued, along with climate related drivers including drought, water scarcity, and desertification.
- cclii. On the face of it, project reporting noted that the Reducing Pressures project exceeded its targets on rangeland, rehabilitating 70% more rangeland than targeted—and stopping rangeland degradation or improving its vegetation cover over a larger area than originally planned. Yet during site visits and interviews during the mission for this evaluation, pasture users could not demonstrate sustainable practices in their daily operations, suggesting weak evidence of sustained behavioral change or reduced degradation on pasturelands. The project’s largest single investment was made in a Karakul sheep breeding facility, owned by the Karakul LLC enterprise with the main goal of maintaining the population of Karakul sheep. The associated Karakul LLC cooperative

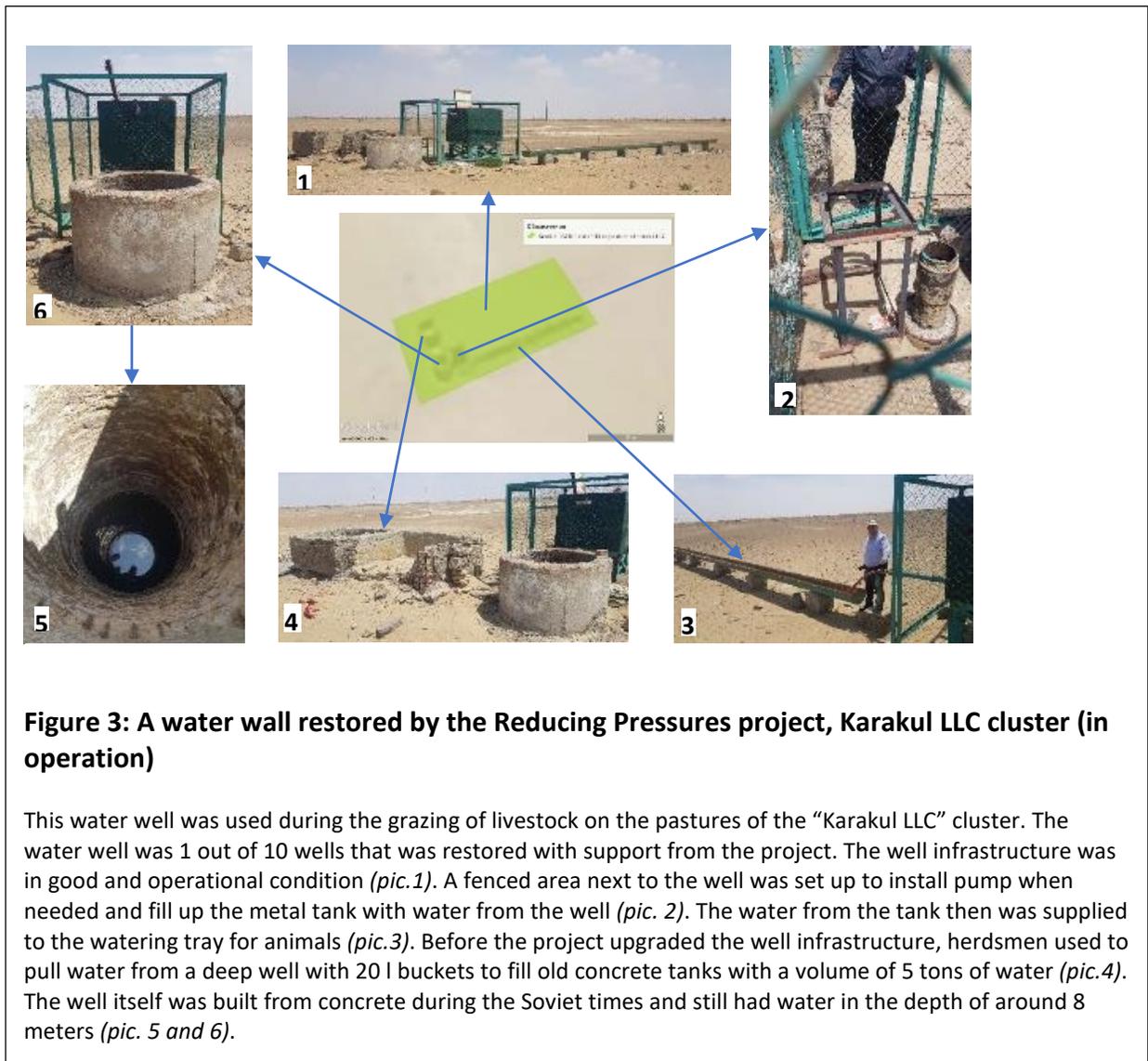
²⁵¹ 4600 TE.

or “cluster” has oversight over 320,000 ha of desert and semi-desert pastures, obligated to use pastures efficiently and prevent degradation. While the facilities of the complex were in good condition, evidence of sustainable pasture management was not provided nor observed. Both former project and Karakul LLC cluster staff members were unanimous in the opinion that the state of pastures has continued to deteriorate. Site visits revealed degradation from overgrazing and industrial activities (Figure 2).



- vi. Figure 2: Evidence of ongoing human impact on pastures
- vii. These photos show intensive use of rangeland territories in Karakul District observed during the mission—in particular capturing use by industrial companies for gas exploration, extraction, and processing activities. Creation and subsequent utilization of such large-scale production capacities requires construction of necessary auxiliary infrastructure, which comes with a high environmental cost. Evidence of large volume earthmoving works for the sake of construction of deep and long running industrial wastewater channels (*pic. 1 and 2*), gas wells drilling (*pic. 3*) and pipeline system (*pic.4*) that feeds extracted gas to processing plants (*pic. 5*) are evident. Almost the entire pasture area is covered with ruts from the wheels of heavy equipment (*pic. 6*), which, destroying the vegetation cover and tamping the soil, contributes to rangeland desertification.

ccliii. Another component of the investment with Karakul LLC involved rehabilitation and maintenance of livestock wells. Of the 10 wells restored through the project, the majority (7/10) were found to still be operational through the evaluation mission (**Figures 3 and 4**). Three are no longer operational due to declining groundwater levels resulting from increased use by industrial plants active in pasture areas for gas production. The lack of precipitation due to climate change continues to be serious driver of rangeland degradation, with 2023 being noted by rain-fed pasture users as one of the driest years in the past 20 years. Despite increased water levels in the rivers due to a cold winter and good snow cover the previous winter, the spring season in the desert and semi-desert regions of the country has come with a catastrophic lack of precipitation.



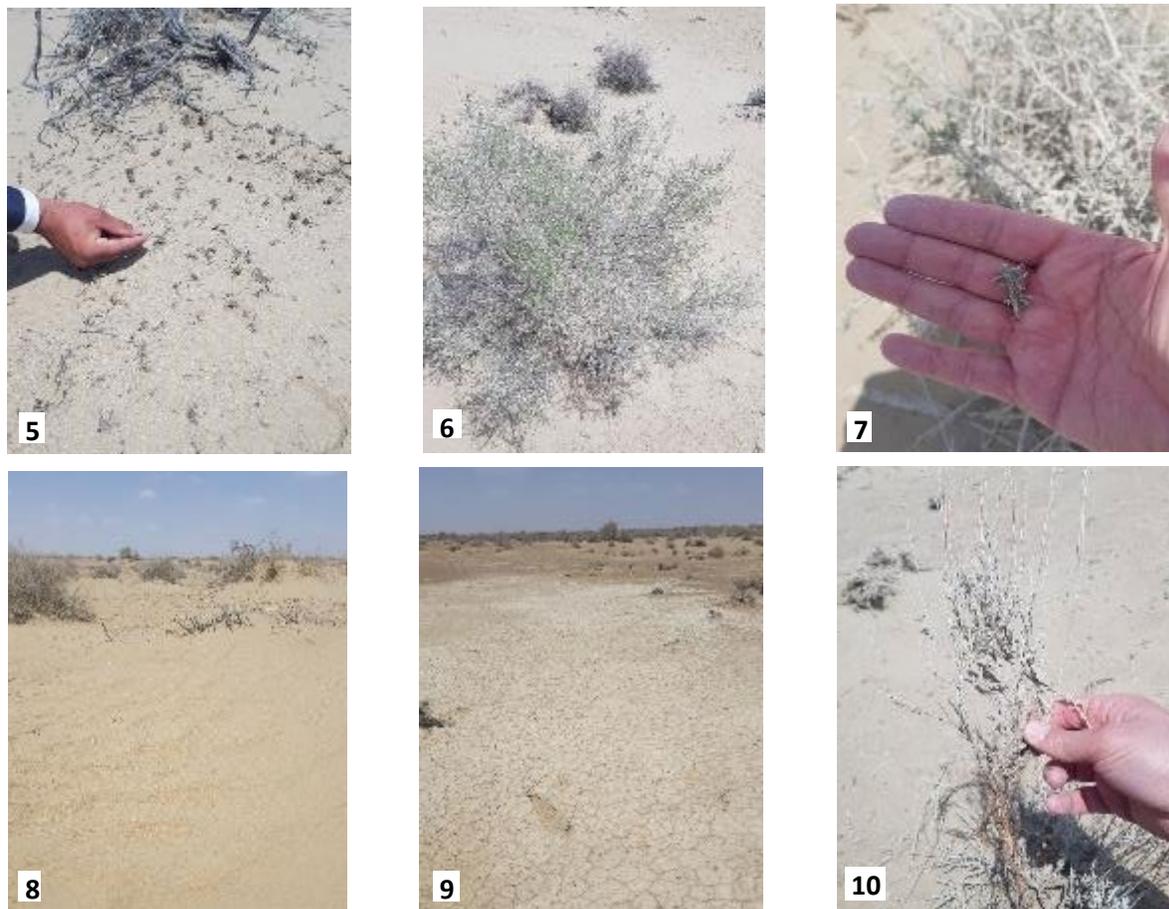


Figure 4: Pasture conditions next to the well and at a distance of up to 2 km from the well

The pastureland on about 300 m radius around the water well was completely degraded as a result of overgrazing and trampling (*pic. 1 and 2*). The areas of pasture on a longer distance from the well was also in an extremely poor condition with clear signs of ongoing severe degradation (*pic. 3 and 4*). The condition of the sparse vegetation cover of pastures indicates a significant decline in soil fertility, aggravated by a catastrophic lack of moisture. The most important ephemeral vegetation for pastures is almost on the verge of extinction (*pic. 5*). The limited number of perennial shrub species that still grow in these extreme conditions are also extremely vulnerable and show signs of degradation both on the top and on the root system (*pic. 6, 7 and 10*). The most obvious signs of pasture degradation are mobile sands and takyr (*pic. 8 and 9*).

- ccliv. Stronger environmental outcomes were observed in forests than found in earlier reporting and evaluative evidence. Reporting for the Reducing Pressures project had noted less success in meeting targets in forest management and rain-fed agriculture, which were seen as secondary to the project’s rangeland components. The TE observed that land degradation was not used as a criterion for locating plantations. Rather, most plantations were located near State Forestry facilities, strengthening the State Forestry and its economic returns, but without a visible direct link to competing land use practices and environmental benefits. Yet the mission for this evaluation revealed concrete progress on afforestation of lands that were degraded or at risk of degradation

since project closure. Forestry Units in Karakul and Zaamin Districts in particular made good progress on afforestation of degraded lands seeded under the project.

- In Karakul, afforestation of degraded rangelands prone to desertification with endemic plant species such as saxaul trees and cherkez shrubs yielded good results (**Figure 5**). The area afforested by the project demonstrated promising trends of natural regeneration, and controlled mobile sands around key road and railway infrastructure around the Lukoil Gas processing plant. The afforestation also has supported an increase in local biodiversity; small desert animals, insects, and birds were observed in abundance during the mission.
- The agroforestry practice of planting shelterbelts (**Figure 6**) around crop field was supported during project implementation in Karakul District. In Karakul District shelterbelts traditionally used to protect cultivated lands from wind erosion. The shelterbelt is not a new concept in Uzbekistan. However, due to the dissolution of Soviet Union, agroforestry institutions in Uzbekistan had been in serious decline and lacked sufficient public financing. The project helped reintroduce the shelterbelt practice in Karakul District and it has since been included into the annual workplans of the Forestry Units. As of today, Forestry Units obtain financing from central budget for this activity and have annual targets for creating new shelterbelts on cultivated lands of the districts.

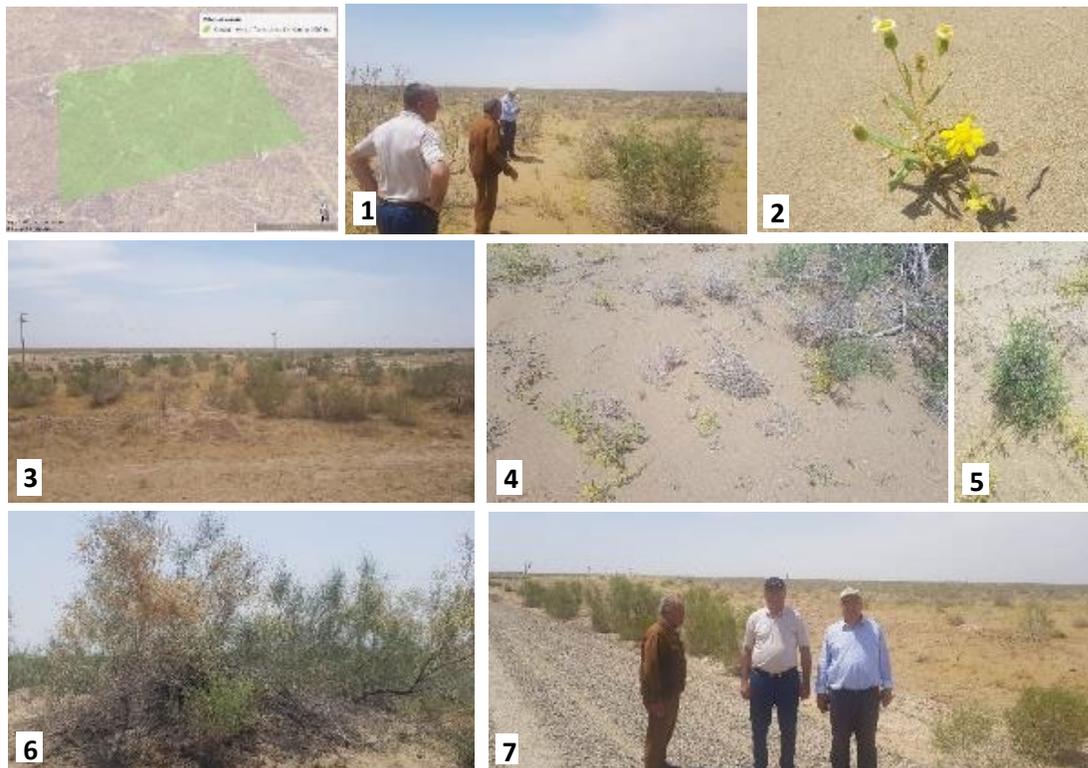
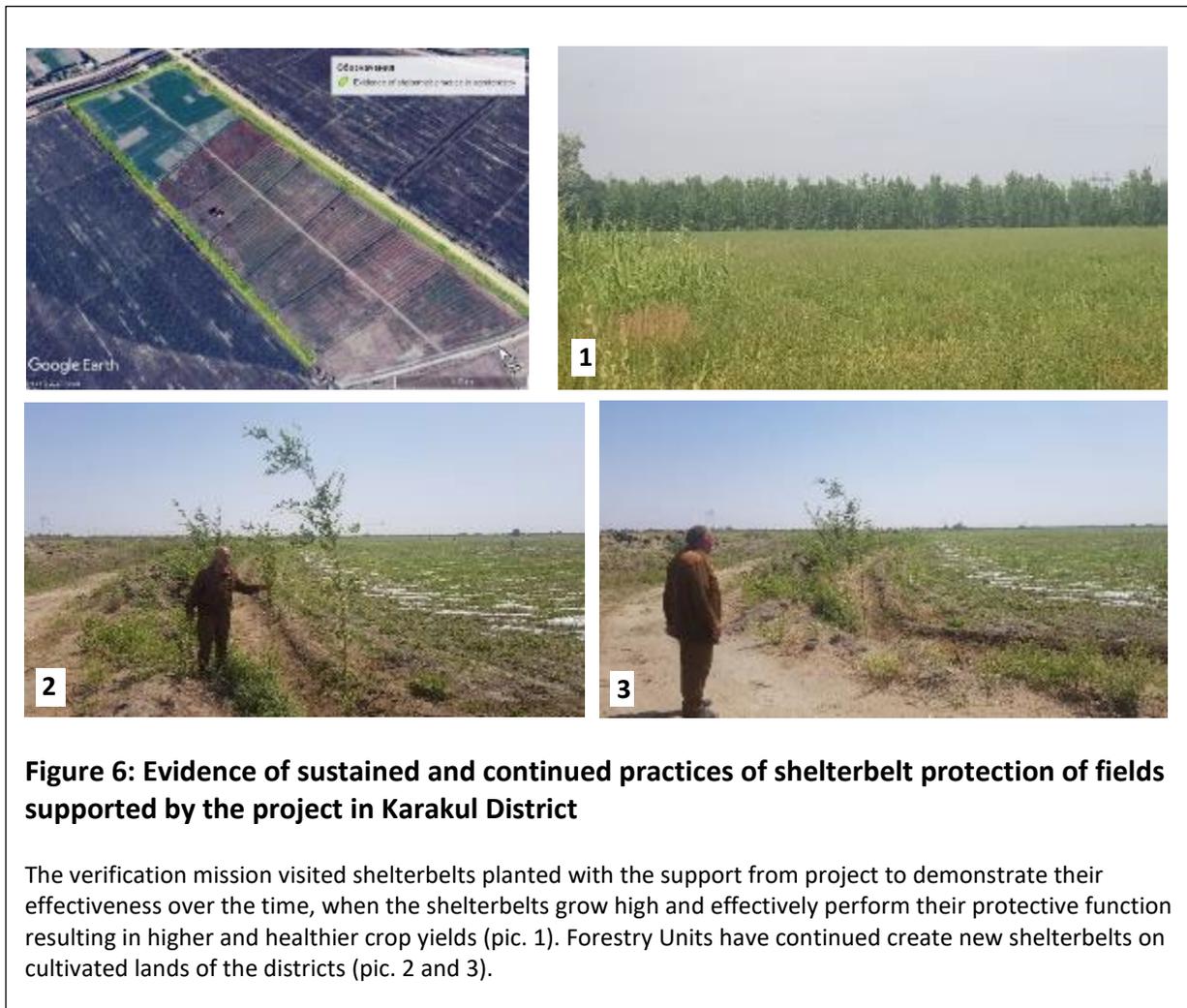


Figure 5: Area of forest planted in Kandym area of Karakul District (1,000 ha)

The verification mission visited a project site in Kandym area where the project performed afforestation of 1000 ha of desert land prone to degradation by planting seedlings of endemic saxaul trees. The afforestation aimed to stop desertification and control moving sands. The results seen showed the primary project targets were achieved and sustained. Planted saxaul tree seedlings have shown good growth rates (*pic. 1, 3 and 6*). Moreover, the process of natural regeneration of saxaul was evident all over the site (*pic. 5*). The density of vegetation on the project site, achieved because of the growth and reproduction of saxaul, apparently had a positive impact on the entire ecosystem of the site. Due to stronger soil moisture retention, expansion of ephemeral vegetation and of other perennial shrubs was observed (*pic. 2, 4 and 5*).

Similar situation has been observed on rangelands along the tens of kilometers to and from the mentioned project site (*pic. 7*), which according to Karakul Forestry officials was a result of replication of the practice on those lands since project closure. This supports the previous findings of the PIRs and TE. According to information provided by Karakul Forestry, the enterprise has continued working on afforestation of additional territories and covered more than 20,000 ha, including 11,000 ha in 2021, 5,500 in 2022 and 4,000 ha in 2023.



- cclv. In Zaamin, the mission included direct observation of 150 hectares of afforested area as evidence of the Forestry Unit’s program on planting endemic coniferous trees such as pine on hillsides subject to degradation from overgrazing. State Forestry officials noted afforestation has continued since project closure, following annual afforestation plans as part of nation-wide afforestation campaigns carried out in Uzbekistan starting in 2017. The project helped Zaamin Forestry build a tree nursery through setting up irrigation capacity on 80 ha of land, and provided seeds and seedlings. According to State Forestry management, this nursery is supplying all seedlings being planted in Zaamin as part of the campaign, and seedlings to other regions for the nation-wide afforestation campaign "Green Space" (Yashil Makon) launched in 2021, aimed at planting one billion trees by 2026. The nursery covered by the project hence sustained and provided knock-on effects of supporting additional afforestation campaigns. Improved vegetation cover was also observed on protected state forestry lands and fenced lands belonging to the Rustamnoma Farming Enterprise. Practices adopted on these forestlands included rotational grazing based on season and botanical composition. Site visits revealed fuller, healthier vegetation cover of perennial and

annual pasture plants on these forest lands compared to local community pasturelands outside the scope of the project.

- cclvi. Households also undertook some afforestation. Interviewees and sites visited during the mission revealed some attrition due to the COVID pandemic and household-level issues, and replication by neighboring farmers of fruit orchards established through the project.
- cclvii. The findings of geospatial analysis undertaken by GEF IEO indicated mixed trends in local environmental outcomes for the GEF intervention areas. In particular, the analysis confirmed recent positive trends in the normalized difference vegetation index (NDVI)²⁵² on a project site (138 ha under afforestation) in Zaamin district, potentially reflecting afforestation by the local state forestry unit as a knock-on effect of the Reducing Pressures project—if only reflecting one year of vegetation increase (**Figure 7**). There were no clear Google Earth images that clearly showed an increase in afforestation during the project period for sites visited during the mission. On the other hand, the analysis observed a negative trend on a project site (1,000 ha under afforestation) managed by the local forestry unit in Karakul district (**Figure 8**), with very little vegetation shown on what appears to be mostly desert. This contradicts the findings of the field mission and the progress claimed in the project reports—requiring further information to validate (see Annex 2).

Figure 7: 103 hectares afforested in Zaamin District, as a knock-on of the Reducing Pressures project

June 2022

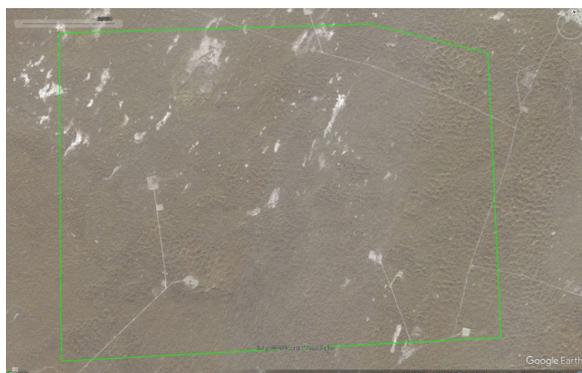
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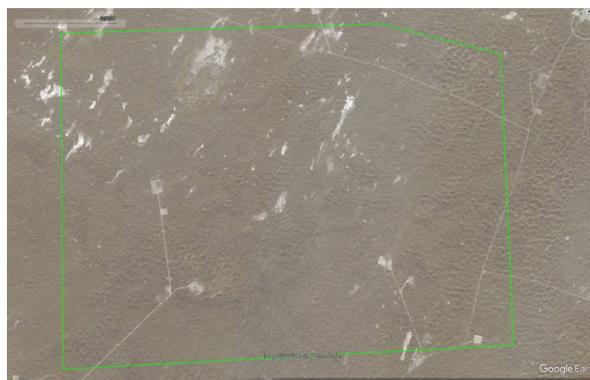
Figure 8: 1,000 ha afforested in Karakul District as part of the Reducing Pressures project

²⁵² The NDVI analysis was conducted using two sensors: MODIS and Sentinel-2. Weather patterns could have some influence on the data and would require further validation to draw conclusions on vegetation change over time.

October 2014



October 2022



- cclviii. Overall, the lack of follow-up data collection and monitoring of project sites makes it difficult to gauge the environmental sustainability of project outcomes. For the Reducing Pressures project, it was not possible to secure data to confirm what share of the broader areas of pastures (44,600 ha), forestlands (3,574 ha), or rain-fed lands (1,399 ha) were still under improved management as claimed at project closure. Indeed, there was no definition of the project indicator of “improved management” nor how to measure it—whether it only included lands that have demonstrated adoption of certain sustainable practices, and/or signs of ecological improvement or enhanced productivity.²⁵³ The Report on Monitoring of Pastures in Karakul District, released in 2018 in response to the project’s request, remains the most recent monitoring of pastures conducted in the target districts. It was not possible to confirm survival rates or the share of afforested land maintained over time. More information is needed to understand trends in vegetation health and productivity; pasture and forestry users/managers were not able to provide any documented evidence. This data gap reflects the broader lack of a unified, real time data collection and monitoring system to inform landscape planning at local, subnational, and national scales.²⁵⁴
- cclix. The project also included some other activities not linked to land degradation, for example, renewable energy activities. The TE noted 10 small local businesses involved in production or application of appropriate technologies. The sustainability of use of these technologies since then has been mixed. For example, a private household in Zaamin showed during the evaluation mission that only some of the equipment that it had introduced through the project was still operational, namely solar panels. The windmill was found to lack two of three propeller blades, and the atmospheric water generator was out of order.
- cclx. The SACCMP project (GEF ID 4642) was successful according to the ICR in promoting renewable energy and energy efficiency technologies to agribusinesses and farms, while delivering weaker results through its farm-level land and water conservation

²⁵³ The project’s midterm review flagged the lack of a proper roadmap and SMART indicators to achieve the project objective, yet the project did not end up preparing or refining either.

²⁵⁴ 10356 ProDoc.

demonstrations and farmer field schools. The project reported 26,351 hectares of irrigated land where degradation had been reversed. While this area may seem significant, it was a shared result largely due to activities implemented in parallel by the Swiss Development Corporation (SDC), making it difficult to discern contributions from the GEF project.²⁵⁵ The project team noted that project's main contribution to reducing degradation of irrigated land and water supply was providing training and capacity building to irrigation specialists. The project also partially achieved objectives related to building capacity of farmers through training and introduction of modern irrigation and land preparation techniques on 93 hectares. However, this component struggled with challenges and delays in implementation, and shared contribution to results by various funders. There were no indicators to assess workshop outcomes, measure rate of adoption of demonstrated technologies, nor gauge trainee satisfaction. The ICR concluded outcomes as modest. It is not possible to establish meaningful correlation between the project activities and any outcomes or impacts on dryland conditions.

- cclxi. Some social capital cultivated with GEF support has sustained over time. For example, the Reducing Pressures project had promoted formation of pasture user groups (PUG), with the target of 300 hectares of pastures to be jointly managed by two pasture user groups. At least one of two pasture user groups established by the project as limited liability companies for integrated pasture management planning is still operational. Through the project, 15 herdsmen formed a pasture user group in the form of Shurrobot Yaylovlari LLC, which the local khokim (mayor) approved to manage 1,850 ha of pastures for 49 years. These herdsmen graze 850 units of livestock from all households of the mahalla (local community). As of early 2023, 200 ha of provided pastures are being preserved from grazing to check if the productivity improves. The Karakul Breeding Scientific Research Institute studied the condition of the pastures and provided recommendations on grazing rotation based on the number of livestock. Rotation plans will be developed based on these recommendations, though the chairman of the PUG made no mention of reducing stocking rates when interviewed. Karakul LLC management also noted that agreements with local dekhkans (households) and farmers are in place, regulating the sheep breed and the maximum number of livestock per hectare. Although an integrated pasture management plan had been reported as being developed for the Zaamin District, as of 2023, neither of the key stakeholders queried could provide evidence of introducing or applying such a pasture management plan during the evaluation mission.

²⁵⁵ 4642 ICR Review.

cclxii. Ultimately, the Reducing Pressures project prioritized delivering socioeconomic benefits for beneficiaries over biodiversity or other environmental concerns.²⁵⁶ Several



Figure 9: Evidence of sustained sewing business supported by Reducing Pressures project

The project helped one household establish a home-based sewing workshop business (Figure 7). The owner of the sewing workshop Ms. Dilora Ravshanova started her business with a minimal set of necessary equipment provided by the project, including three sewing machines, an iron and scissors (pic. 1, 2 and 3). In the beginning she employed 5 women from her neighborhood and started producing school uniforms and clothes for newborns. As of early 2023, the sewing workshop is still running. According to the owner, during the years after the completion of the project tens of local women went through training and work at her workshop and most of them are now providing home-based sewing services. Currently, she has diversified the products and makes good profit by tailoring curtains on custom design (pic. 4 and 5), which are in high demand.

Although this project activity was found having no direct connection with reducing pressure on land use during the TE, in the long run the model may have could potentially have certain positive impact as the number of women learning from this experience may grow and generate additional income to their families, reducing need for labor-intensive and complicated livestock breeding (or at least reduce the number of livestock in households). More evidence would be needed to **confirm a decrease in the number of livestock**.

Rural women entrepreneurship support programs that provide access to concessional and fast credits and loans have been launched by the GoU in recent years. Provided that these programs work in the field, they could facilitate the replication of this experience of the project.

socioeconomic measures supported by the project were not designed to visibly or measurably reduce pressure on natural resources, and it is not clear how they considered potential impacts on dryland ecosystems. The TE deemed the project very

²⁵⁶ 4600 TE

successful in implementing socioeconomic small-scale and micro-measures in dryland areas, concluding that almost all recipients of small-scale and micromeasures were economically better at the time of the TE compared to the start of the project. The verification mission included visits to a sewing business supported through the project, still operational (**Figure 9**), and a broiler farm whose operations had been discontinued due to low chicken prices and high operating costs. More data would be needed to confirm what share of recipients still enjoy the same improvements in economic status as of 2023.

- cclxiii. There were few synergies between the project's small-scale and micro-measures, which reached a limited number of people beyond direct project beneficiaries. The project distributed goods and services to nearly 70 SMEs and households in improving their livelihoods, spanning State Committee, District Governments, university and research institutes, state and private enterprises, and private households. Additional individuals and institutions received training or attended events. The high number of beneficiaries was unusual and more characteristic of small-grant programs and micro-credit programs. The project's logic trusted that people would replicate good practices once demonstrated well, yet did not proactively remove barriers to scale up adoption beyond awareness building (e.g. lack of funding, technical knowledge, and coverage in existing governmental and nongovernmental programs), and hence had limited development impact.

While closed projects had mixed environmental outcomes, the ongoing CACILM-2 project has reported more promising environmental achievements and outcomes so far, including:²⁵⁷

- Improvements in soil fertility and vegetation cover from establishment of three pilot sites for sustainable land management practices
- Restoration of degraded ecosystems, including rehabilitation of degraded pastures in total area of 84,000 ha, and use of soil conservation technologies, which contributed to protection of local biodiversity.
- More than 6,300 ha of sites in Kashkadarya and Bukhara provinces planted with drought-resistant and salinity tolerant crop varieties
- Income generation from vegetable production in ~150 greenhouses delivered by the project to smallholder farmers
- Application of conservation agriculture practices on more than 7420 ha using a no-till planter in 2020-22 and 1400 ha of double cropped crops in Kashkadarya province.
- Increased water-use efficiency and reduced water losses in the irrigation sector due to introduction of water-saving technologies and approaches. A district-level crop-water use efficiency map was developed and submitted to the Ministry of Water Resources as the basis for providing a 50% cost subsidy to farmers who apply water saving technologies. This cost-effective intervention reduced irrigation water consumption at least by 50-70%, compared to the methods that farmers applied traditionally in previous years.

²⁵⁷ FAO (2023). Evaluation Note: CACILM-2.

- Demonstration of various drought mitigation technologies. For example, applying hydrogel in plants' root system to retain moisture, combination with mulching and zero-tillage practices, using greenhouses, drip irrigation technologies, sprinklers and micro-climate systems, 'AquaCrop' software to identify crop-water requirements and to optimize crop production.
- Development of sustainable land-use plans for selected production landscapes in Bukhara and Qamashi districts, including a pasture rotation plan covering 84,000 hectares in Guzor district of Kashkadarya to increase animal productivity and to optimize seasonal herd migration

In terms of socioeconomic benefits, the CACILM-2 project has reported increased agricultural productivity, income generation, and improved livelihoods – and contributed to the creation of new jobs, particularly in the realm of sustainable agriculture. These jobs were especially critical during the pandemic when there was a dearth of rural job opportunities. More observation would be needed to see how well these outcomes have further developed and sustained beyond project closure.

- cclxiv. GEF projects in Uzbekistan have sometimes struggled to solve the tradeoff between socioeconomic goals and environmental goals. Some of the measures supported could have an actual or potential unintended negative impact on natural resources. As the TE for the Reducing Pressures project noted, there were no explicit arrangements with local beneficiaries nor safeguards that additional income generated by the project could not be used to increase the number of livestock. No project beneficiaries interviewed during the TE mentioned that they would reduce the number of livestock due to project support. Measures such as rehabilitation for wells, and improved vet services, infrastructure, and vegetation cover were expected to lead to more livestock. Similarly, the TE for the Zapovednik project (3556) noted no measured impact from diversifying livelihoods among local communities away from livestock production to include fruit trees.²⁵⁸ The TE cautioned against assuming that providing alternative livelihood strategies reduces dependence and pressure on natural resources—that too often, what are framed as alternatives simply become additional strategies with people continuing to apply pressure on land and natural resources.²⁵⁹ While implementation of socioeconomic measures is key to incentivize local people to contribute to environmental protection, they need to be better negotiated. Environmental outcomes depend on the choice of the right partners who share the overall project goal and whose participation can help reduce land degradation, ideally secured through an agreement. No evidence was found during the evaluation mission that indicated a decrease in livestock or corresponding pressure on pasture ecosystems. Livestock remains a major asset and investment for rural communities.
- cclxv. Biodiversity-focused projects had stronger localized environmental outcomes. The Ustyurt Steppe project (GEF ID 3950) successfully contributed to the establishment of the Saigachy Reserve, supporting capacity-building efforts and provision of equipment and infrastructure, and creating maps of a zone prohibiting oil-and-gas exploration and production. The project led to some replication of restoration on 626 hectares, beyond

²⁵⁸ The project provided local communities with fruit tree seedlings that were planted within the buffer zone of the Surkhan zapovednik protected area.

²⁵⁹ 3556 TE

the 50 hectares of pilot restoration of damaged land by Uzkorgaz Chemical. The project did struggle somewhat in terms of aligning its field-based activities with its overall objective of addressing drivers of degradation through the oil-and-gas industry. While the reserve was included as a no-go zone, there was no active threat or link with an oil-and-gas company through the project.²⁶⁰

- cclxvi. Biodiversity did not factor well into working land approaches. In the Reducing Pressures project, no bioassays were conducted on the use of seeds of exotic fodder plant species. No biodiversity assessments were carried out prior to ploughing steppes for enrichment plantings or prior to converting natural steppe ecosystems to fodder plots. Plantations in rural areas are primarily monocultures of saxaul and mulberry, while urban areas have featured a more diverse range of ornamental trees including chestnut, pine, tulip, spruce, and maple. In the SFM project (GEF ID 9190), a FAO representative noted observing real results three years after establishment of the nurseries and tree plantations, with an emphasis on the socioeconomic benefits—citing work for the forestry branches as the sole source of income for people in very remote areas. Plantations established under the project have primarily been monocultures of almond trees and pistachio trees, reflecting people’s interest in planting these trees rather than from the standpoint of environmental rehabilitation or biodiversity considerations.

National policy and strategy

- cclxvii. At the national level, the wide reforms implemented by the GoU since 2016 have often focused on socio-economic development while environmental issues remained secondary. Most of the reform strategies in natural resources governance sector were designed to increase agricultural and industrial productivity while elaborating less on achieving sustainable use of those resources. New policy and legislation frameworks do not sufficiently analyze complex interactions of different stakeholders in land use and tenure and consequently aggravates competitive use of natural resources resulting in their continued depletion and degradation. Some efforts to integrate sustainable natural resources management principles, mainly advocated by international partners, have not resulted in effective implementation and enforcement. The pressing issue of pasture and rangeland degradation has been long debated within the top levels of government, with no fundamental or consistent solution to the issue. In this context, GEF support has had the potential to deliver strong environmental impact over time through its ambitious contributions to drafting laws and strategies.
- cclxviii. Efforts on pasturelands under the Reducing Pressures project (GEF ID 4600) were deemed very successful in elevating sustainable rangeland management on the national agenda, promoting the Law on Pastures—though it still has yet to operationalize. The law was adopted by Parliament and signed by the President. The law could strengthen backing for sustainable rangeland use, though financial and technical resources would still be needed to transform local business to ecologically friendly enterprises and households. The law also allows creation of associations of pasture users to regulate the

²⁶⁰ 3950 TE.

issuance of tickets to graze on State Forest Fund land.²⁶¹ The TE noted significant work needed to develop the law into an effective instrument for sustainable development, including setting more explicit limits on the number of livestock per hectare, requiring pasture rotation for all pastures, and noting how geobotanical surveys would inform improved pasture management. These would need by-laws and other supporting regulations. In January 2023 the President proposed to develop a new edition of the Law on Pastures, and the procedure for providing pastureland for rent. In February 2023, a Presidential Decree on “On additional measures to protect and ensure the rational use of pastures” was adopted.²⁶² Following this Decree, a corresponding interagency working group was created and started working on the law.²⁶³ Follow-up measures to operationalize the law and assist dryland users in overcoming high upfront investments are key to shepherding the shift toward more sustainable practices.

- cclxix. Some of the other strategic documents advanced by the Reducing Pressures project have led to sustained traction over time. The project had a lead role in developing a strategy for the long-term use of non-irrigated drylands and on sustainable management of forest and rain-fed lands, and policy paper on regulations and procedures to guide afforestation / reforestation activities. Some of the documents were approved by the government. For example, as of October 2020, a Presidential Decree №ПП-4850 was passed approving the Concept for the Development of the Forestry System of the Republic of Uzbekistan until 2030 and associated roadmap, which calls for development of state forest policy and improvement of forest legislation and a variety of other measures to strengthen the enabling environment for sustainable forest management spanning tenure, financing, capacity-building, and expansion of land for productive use and protection. The Forestry Agency noted that as a result of the Concept, large-scale work has been carried out to plant protection forests on the dried bottom of the Aral Sea, with over 1.7 million hectares planted from 2019-2023 and more ongoing work. They noted that the Concept has been used to forecast additional areas for forest increase through 2030.
- cclxx. The SFM project (GEF ID 9190), still under implementation, contributed to the review and revision of the National Forest Program, as reflected in the Concept for the Development of the Forestry Sector until 2030.²⁶⁴ Since the program has been approved

²⁶¹ 9190 MTR.

²⁶² Among other things, the Decree provides for: creation of forage production plants with annual capacity of 10,000 tons on 800 ha with use of water-saving technologies; improvement of genetic research of livestock; digital ID for 500 thousand units of livestock; use of solar powered pumps and introduction of drip irrigation on 500 ha of pasturelands as a pilot project; Program on protection and effective use of pastures (Annex 1); Inventory and electronic account of pastures in use, the procedure for leasing, reclamation, conservation, and rational use of pastures; and developing a draft law "On pastures" in a new edition until September 1, 2023.

²⁶³ The legislative system in Uzbekistan inherited from the Soviet period requires laws to be complemented by by-laws, which have been known to change the substance of the original legal act. This in turn can lead to conflicting processes, and lack of financial and human resources to operationalize the original law. This is being reformed, though the process will take years.

²⁶⁴ [PP-4850-son 06.10.2020. On approval of the Concept for the development of the forestry system of the Republic of Uzbekistan until 2030 \(lex.uz\)](#)

by Presidential Decree, it is anticipated to advance sustainability of SFM beyond the project's life and enable more private sector investment. The SFM project also supported the Government of Uzbekistan in preparing the Presidential Decree that enables people to rent or lease forest fund lands not covered by forest for up to 49 years,²⁶⁵ up from 10 years to encourage greater state and private investment in sustainable forest management. According to a FAO representative, this longer period is more compatible with trees that have longer rotations or horizons for harvesting that require more than 10 years to make economic sense (e.g. almond trees).

- cclxxi. Projects were often too short to incubate national-level policy and strategies to see them through to approval and operationalization. While projects are designed on GEF funding cycles of four years, that proved often too short to achieve envisioned strategic, policy, and legislative changes. The MTR for the Zapovednik project (GEF ID 3556) cited a key lesson learned across a variety of UNDP-GEF projects that a project involving legislative or policy change should not be shorter than five years, to allow for development of the full necessary capacity to make the change sustainable. The Ustyurt Steppe project (GEF ID 3950) drafted and submitted 12 pieces of legislation for consideration. As a result of the project's efforts, amendments were successfully made to laws on <<Protection and Use of Flora>> and <<Protection and Use of Fauna>>, providing improved measures on using flora and fauna.²⁶⁶ However, the SCNP did not display significant ownership over the project or take responsibility for pushing through the proposed amendments to the 12 pieces of legislation. Approval of legislative amendments is a lengthy procedure, requiring a number of hearings in Parliament—a major risk given that the legislation was the principal mechanism used by the project to achieve its objective of mainstreaming biodiversity in the oil-and-gas sector. The TE advised that projects avoid attempting legislative change without the political backing to be approved during the project's lifetime. This is not a new lesson. Indeed, the TE noted that the project's plan to amend legislation flew in the face of lessons learned from previous UNDP-GEF projects.²⁶⁷ While a couple of its amendments successfully made it into laws, none of the legislation was approved during the project lifetime.
- cclxxii. Improvements in monitoring systems are in progress. While still under implementation, the SFM project (GEF ID 9190) has established a GIS laboratory and trained technicians to establish an operational Forestry Inventory and Monitoring System to support SFM.

²⁶⁵ The Resolution of the Cabinet of Ministers №993 dated 13.12.2019 was adopted and endorsed the regulation on lease of forest fund lands not covered by forest for up to 49 years. Before, such rental arrangements were only possible in accordance with the Land Code for agricultural and industrial lands. Available: https://static.norma.uz/official_texts/2019/993.pdf

²⁶⁶ UNDP (2015). Fifth National Report of the Republic of Uzbekistan on conservation of biodiversity. Available: <https://www.cbd.int/doc/world/uz/uz-nr-05-en.pdf>

²⁶⁷ The TE for 3950 cited TEs of the UNDP-GEF projects “Establishment of the Nuratau-Kyzylkum Biosphere Reserve Project as a Model for Biodiversity Conservation in Uzbekistan”, “Conservation of Tugai Forest and Strengthening Protected Areas System in the Amu Darya Delta of Karakalpakstan”, and “Strengthening Sustainability of the National Protected Area System by Focusing on Strictly Protected Areas”

Natural Resource Governance

- cclxxiii. All GEF projects covered by the case study made efforts to address natural resource governance and policy considerations at different administrative levels. A common project design was dedicating one component to developing, testing, or replicating sustainable land management and local governance, and another component to mainstreaming project results into the broader legal and institutional framework and government policy or strategy.
- cclxxiv. Despite this logical design, projects struggled to deliver change sustainably and at scale, however, and some of the same policy and governance barriers remain. Administrative reforms in Uzbekistan do not often consider the existing challenges in natural resources governance. Central and local budget allocations are sparse and not enough to ensure a systemic work on sustainable use, monitoring, and restoration of natural resources, including vast areas of rangelands and pasturelands. Institutional mechanisms created by the government are often unable to effectively address the existing problems of sustainable management of natural resources due to the predominance of socio-economic objectives in their agenda. Key government agencies lack a joint operational framework or instruments for spatial and administrative planning, and tools for agro-ecological zoning. Pasture planning is therefore not practiced at the local, subnational, and national scales. Several institutional restructurings and optimizations have not helped to resolve the dilemma of competitive use of rangeland ecosystems.
- cclxxv. Trade-offs between socio-economic development and environmental considerations continue to drive land degradation. For example, the State Committee on Development of Sericulture and Wool Industry under the Ministry of Agriculture has 17.5 million hectares of pasturelands under management, including those degraded or under risk of degradation. At the same time the Committee tasked to increase the number of livestock from 6.26 million in 2021 to 9.5 million in 2025. If implemented, this plan will put even more pressure on pastures and contribute to further degradation unless alternative breeding practices (e.g. stall breeding, fodder cultivation) that avoid grazing are introduced. The vague and regularly changing institutional framework of pasture user organizations has hindered integration of sustainable practices into their daily operations, thereby resulting in poor pasture management. On the other hand, the well-organized and better-financed Forestry Units that have not undergone large administrative changes have had stronger technical and intellectual capacities to learn and adopt sustainable practices.
- cclxxvi. Some of the inertia stems from lack of political and institutional will. Select projects have tried to address this. For example, the project design for the Reducing Pressures project noted weak political or institutional will to make necessary changes as a risk for enhanced natural resource governance, and undertook targeted awareness and capacity building as part of the project—managing to get attention from the government and assisting it in developing the Law on Pastures.
- cclxxvii. Tenure issues have proven a major factor in hindering sustainability. An interviewee noted how international NGOs have been pushing for the privatization of agricultural lands in Uzbekistan, with the belief that sustainable land and soil management is not

possible until land becomes private. Post-Soviet reforms to tenure have resulted in increase in individual or private ownership of pasturelands such that 90% of animals are privately owned, yet access and rent of pastures remain unclear at various levels from decisionmakers to farmers. Rangeland use is not legally sanctioned for Dekhan farmers even though they cover the majority of national livestock production. Farm enterprises' activities in contrast are strictly regulated but constitute a fraction of national production.²⁶⁸ Water rights also tend to be de-linked from land rights, hindering integrated land and water management; water resource planning and use models often do not correspond to land condition and productivity. The function of monitoring the land condition falls within the same ministry responsible for agricultural production, the Ministry of Agriculture, creating misalignment in terms of promoting state agricultural production policies, sometimes aligned with but other times opposed to land rehabilitation.²⁶⁹

- cclxxviii. The lack of enforcement and penalties against unsustainable use has proven to be another area of weak governance. The Reducing Pressures project worked to advance norms and regulations on resource use, considering needs of different stakeholders in the target landscapes, but more work is needed to update and operationalize the Law on Pastures to become an effective instrument for sustainable livestock and pasture management. And as mentioned before, the Ustyurt Steppe project (GEF ID 3950) introduced to the oil-and-gas sector the concept of a mitigation hierarchy within Uzbekistan and to international standards such as the IFC Performance Standard 6 (PS6: Biodiversity) and the Equator Principles. This led to some traction with offsetting and the payment of compensation, partly as a function of compensation for damage already having precedent in Uzbekistan's laws.
- cclxxix. Select GEF projects factored in conflict sensitivity into project design. For example, the Reducing Pressures project considered conflict between user groups and main beneficiaries of current resource use system as a project risk. As a mitigant, the project proposed clear policy direction and institutional/legal reforms to strengthen enabling conditions, capacity building efforts to change existing mindsets, and on-the-ground practical testing of mechanisms for dispute resolution. The TE noted that no major conflicts were reported, and that the project pursued a policy of including as many recipients of project goods and services as possible, a double-edged sword in lending to the scattered nature of the project's field-based investments (breadth over depth).
- cclxxx. Complexities in the institutional framework have sometimes hindered achievement and sustainability of project outcomes, requiring adaptive management and project extension. In the Zapovednik project (3556), it was beyond the scope of the project to effectively navigate the complexities of four agencies with the mandate to manage protected areas. Some of the plans formulated through the project (e.g. the monitoring system) had no institutional plan, leading to the TE to conclude institutional sustainability in the short-term to be moderately unlikely without additional

²⁶⁸ 10367 ProDoc.

²⁶⁹ Strikeleva, E., Abdullaev, I., Reznikova, T. (2018). Influence of land and water rights on land degradation in Central Asia. Available: <https://www.mdpi.com/2073-4441/10/9/1242>

interventions. It recommended an extension of the project timeline to 2013 if not 2014. The project was extended through 2017.

- cclxxxi. Relevant for the Aral Sea project (GEF ID 10356), disputes over water have been one of the biggest stumbling blocks for regional cooperation in the Aral Sea Basin. While there are several regional organizations for water resource management, most founding documents of IFAS are political declarations and statements expressing the intent to cooperate. The few legally binding agreements ratified by parliaments that constitute the legal basis of IFAS do not provide for real collective decisionmaking power. IFAS has provided a forum for consultations and information exchange, but the reality is that regional water management platforms have yet to become effective collective decisionmaking bodies. Most decisions are still made on a bilateral basis and highly depend on the unique position of upstream and downstream companies.

Gender, Private Sector, and Resilience

Gender

- cclxxxii. In 2019, Uzbekistan adopted the country's first law on gender equality, with the aim of supporting equal access between men and women to economic resources. While the law grants men and women equal rights to own property, the majority of land and property owners, contractors, and grazing permit holders are men.²⁷⁰ Rural women in the country have limited employment opportunities outside of agriculture. Livestock and rangeland management and forestry have historically been and remain male domains.
- cclxxxiii. Earlier projects included discrete activities targeting women, which were helpful in providing socioeconomic benefits but without mainstreaming gender across the project:
- For example, the Reducing Pressures project did not attempt to increase women's participation in livestock and rangeland management. Rather, the project sought to reduce gender inequality by supporting women in Zaamin and Karakul Districts to establish sewing workshops, creating jobs and selling their own products. Women and girls were not chosen to participate based on their relationship with land use issues; there was no discernable causal link other than the possibility that these jobs could provide an alternative to destructive land use activities. Women's participation therefore did not factor into advancing the project's overarching objective. The project also supported other vulnerable or underresourced groups, such as research and education institutions whose budget is far from being sufficient for fulfilling their tasks, and Small- and Medium-sized Enterprises (SMEs) with limited capacities and in bad need of support. Again, the support measures for these entities were commonly not linked to environmental degradation.

²⁷⁰ FAO (2020). The role of women in sustainable forest management in Uzbekistan. Available: [The role of women in sustainable forest management in Uzbekistan | FAO Stories | Food and Agriculture Organization of the United Nations](#)

- In SAACMP project (GEF ID 4642), women participants in training workshops for farmers on modern irrigation and land preparations were only at 10%, possibly because project investments did not occur at the household level as was initially planned by the project.²⁷¹
- In the Ustyurt Steppe project (GEF ID 3950), the UNDP CO held a workshop on the role of women in the oil-and-gas sector, but it was apparent from the TE that there was little understanding on how to actually address gender issues and a need for greater commitment to gender mainstreaming among UNDP teams and project implementers.
- In the CACILM-2 project (GEF ID 9094), gender considerations were taken into account in project design and implementation and aligned with FAO and GEF Gender Equality Strategies, though the MTR recommended more integration with UNFCCC and UNCCD gender equality action plans. There has been limited progress on socioeconomic analysis and providing gender-disaggregated updates on how many people have been impacted by the project in terms of improved income and food security.

cclxxxiv. GEF projects evolved over time to include more ambitious gender action plans. The more recent SFM project included a Gender Action Plan developed by a gender consultant featuring concrete targets and indicators to measure progress against the goals and tasks set in the project’s Gender Strategy, and more effort to generate alternatives to forest products. A socioeconomic survey undertaken as part of the project assessed gender sensitivity and gender-specific needs, informing project design and implementation. Project staff were trained on gender aspects at project onset, with a goal of having women constitute at least 30 percent of participants in project activities and training courses. In 2020, the project trained rural women in Dekhkanabad and Kitab districts of Kashkadarya region and forestry territories of Syrdarya region on non-wood handicraft making and marketing to generate alternatives to forest products, including traditional blankets, skullcaps, and wool products.²⁷² Experts recommended more active use of “environmentally friendly sheep wool” available in most households but typically not used, often discarded or burned after a haircut. More information would be needed to confirm if the nonwood handicraft making is reducing pressure on forestland and/or pastureland by extension. The 2022 MTR noted that women were making significant contributions to the project’s sustainable forestry program, but that there was still a need to increase women’s participation in project activities, decisionmaking, and leadership building—and that the Gender Action Plan should be considered more iteratively as part of annual workplanning project implementation. More broadly, gender mainstreaming is not yet a part of the forestry normative framework at the policy level, hindering efforts to mainstream at the project level.

²⁷¹ 4642 ICR, p. 19, para 52

²⁷² UZReport (2020). FAO office held a training seminar on increasing the incomes of rural women. Available: [FAO office conducts training seminar on increasing incomes of rural women | UzReport.news](#)

Resilience

- cclxxxv. Anthropogenic influence remains the second most impacting factor after natural processes related to climate change and drought; resilience is therefore critical to ensuring that drylands support can lead to effective and sustained improvements in the environment. More is needed to integrate climate change risk into drylands support. Uzbekistan has developed systems to address many of the symptoms of climate change. In particular, the CACILM-2 project has been focusing on mapping drought-prone territories and creating early warning systems. The project has made progress on baseline analyses and intersectoral meetings to support integration of resilience principles into investment plans, legislation, and programs.²⁷³ Yet Uzbekistan's current climate risk management system is still nascent. The newly established Ministry of Ecology, Environmental Protection, and Climate Change will provide more dedicated oversight to climate change issues.
- cclxxxvi. Select GEF interventions also prioritized resilience building in vulnerable areas facing land degradation. The Reducing Pressures project aimed to mitigate weather and associated natural disaster risks faced by the local population, e.g. by creating jobs beyond livestock management, and rehabilitating wells in the desert to allow survival in dry years. CACILM-2 has been very intentional about use of drought-mitigation technologies, scaling production of drought- and salt-tolerant crop seeds and introducing water-saving approaches to increase water-use efficiency and reduce water losses in the irrigation sector. The Aral Sea project (GEF ID 10356) seeks to enhance the resilience of ecosystems and livelihoods in the Lower Amudarya and Aral Sea Basin (LADAB) through LDN-compatible integrated land-water management in productive landscapes around protected areas. Karakalpakstan, the autonomous republic and focus of the Aral Sea project, lags behind the national average in terms of real income per capita by almost 1.4 times. Karakalpakstan has the highest level of poverty (27%) and labor migration in the country.

Private sector

- cclxxxvii. Uzbekistan's road to development since independence has differed from its neighbors in relying on state-led development and taking a more gradual approach to market reforms.²⁷⁴ GEF projects involving working land approaches on croplands and pasturelands have engaged dekhans (smallholder) farms and pastoral collectives (e.g. Karakul LLC) with income-generating or other alternative livelihoods activities (e.g. sewing workshop). The TE for the Reducing Pressures project noted that demand-driven development of professional skills could have been strengthened through stronger partnership with the private sector, for example by screening what job opportunities are available in a given area to ensure people are developing relevant skillsets. Forestry has been governed by the Government of Uzbekistan, such that GEF projects involving forestlands have primarily engaged state forestry institutions.

²⁷³ CACILM-2 9094 MTR.

²⁷⁴ 10356 Prodoc.

cclxxxviii. Despite some incremental efforts to engage the private sector through the above projects, much more private (and public) investment is needed to scale integrated pastureland and forest management across Uzbekistan.²⁷⁵ Farmers and investors are often unfamiliar with the full range of ecosystem services provided by sustainable land management measures and their return on investments, perceiving delayed economic returns.²⁷⁶ The recently approved Aral Sea project (GEF ID 10356) seeks to address this gap by supporting private sector actors, rural entrepreneurs, and the Council of Farmers to raise awareness of the benefits of LDN and SLM measures and catalyze investments into efficient irrigation measures, sustainable pasture and forest management measures, and land restoration measures.²⁷⁷ Investments in the SLM measures will be financed by the State Fund through local banks extending soft loans to farmers, where GEF funding will be incremental to the farmer’s own contribution and the soft loan—in other words, still reliant on a concessionary approach.

- cclxxxix. GEF projects have also included some private sector engagement through the energy sector.
- The SAACMP project (GEF ID 4642) helped scale up and expand introduction of renewable energy technologies in SME agribusinesses and small, medium, and large farms through a US\$8.2 million Matching Grant Program, with grants distributed to 39 subprojects supporting renewable energy and energy efficiency investments among six commercial banks: Halq Bank, Hamkorbank, Ipak Yuli Bank, Quishloq Qurilish Bank, Turon Bank, and Uzpromstrojbank. Private investments contributed amounted to US\$4.3 million.
 - The Ustyurt Steppe project (GEF ID 3950) worked with Ozkorgaz Chemical, an oil-and-gas company located near the proposed Saigachy Reserve, to develop a Biodiversity Action Plan and restore 50 ha of degraded land near the company’s facility using seeds from indigenous species. The company replicated and scaled up the restoration to cover another 626 ha. However, there were questions about the degree to which the BAP was implemented and whether it would be renewed following its expiry date, as well as the quality and sustainability of the area restored.

Summary of Findings and Emerging Lessons

EQ 1: To what extent has GEF support been relevant to the specific environmental challenges in dryland countries, and are there any gaps?

GEF support has been highly relevant to the environmental challenges facing drylands in Uzbekistan including land degradation, climate variability, and biodiversity loss. Projects have

²⁷⁵ 10356 Prodoc.

²⁷⁶ 10356 Prodoc.

²⁷⁷ 10356 Prodoc.

focused on multiple levels of governance and land types, recognizing different drivers of degradation across priority working and natural landscapes. Integrated land management has been a recurring theme, aiming to address the interconnected challenges of environmental degradation and human needs. The GEF portfolio has also emphasized transnational approaches to tackle shared issues with other Central Asian countries. The concept of Land Degradation Neutrality (LDN) has guided recent projects. Yet the design and implementation of field-level activities has sometimes strayed from overarching objectives of reducing pressure on natural resources.

EQ 2: How have GEF interventions interacted thus far with similar government- and/or donor-funded activities in terms of either contributing to or hindering policy coherence in dryland countries?

GEF interventions have been moderately coherent with government and donor-funded activities, responding to government priorities and demonstrating some level of continuity across projects implemented by different development agencies, albeit with some duplication. National government buy-in for sustainable practices has been mixed, with a stronger emphasis on development and increasing productivity rather than addressing environmental concerns. The GEF portfolio has fostered collaboration with Uzbek government agencies to enhance country ownership and capacity. However, engaging a broader set of stakeholders and national partner organizations has proven challenging, and institutional ownership and continuity of GEF efforts have been mixed due to government restructuring and turnover.

EQ3: To what extent have GEF interventions in dryland countries produced their targeted environmental outcomes and associated socioeconomic co-benefits?

The evaluation of four closed GEF-funded projects in Uzbekistan showed mixed environmental outcomes. Projects targeting working lands had weak results in reducing land degradation, despite some success in afforesting degraded areas. Socioeconomic measures improved livelihoods but could lead to additional rather than alternative activities that reduce pressure on natural resources. Biodiversity-focused projects had localized successes, but integrating biodiversity into working land approaches proved challenging.

At the national level, GEF projects contributed to strategic documents and laws, including the adoption of a Law on Pastures. Short project durations and gaps in data collection hindered achievement of some legislative changes and operationalization, limiting environmental impact.

EQ4: Have natural resource governance and other socio-economic factors been considered in the design and implementation of GEF drylands interventions, and if yes, with what results and sustainability?

GEF interventions thoughtfully addressed natural resource governance and socioeconomic factors at different administrative levels, though struggling to advance environmental solutions given the predominance of socioeconomic objectives driving rural development agendas. Insufficient central and local budget allocations, tenure issues, poor enforcement, and siloes between land and water management also hinder sustainable land and water management. Operationalization of key strategies and legislation incubated through GEF interventions is key

to ensuring more widespread and sustained adoption of sustainable practices. Follow-up measures were recommended to support the Law of Pastures in particular. Replicating and upscaling existing best practices faced obstacles, including short project durations and weak collaboration..

EQ5: To what extent have the cross-cutting issues of gender, resilience and the private sector been taken into consideration in GEF programming and implementation in dryland countries?

GEF interventions reflect an overall trend toward more gender-responsive programming in Uzbekistan which still faces major gender disparities between men and women. Earlier projects had a weak focus on gender equality, while newer projects incorporate more concrete gender action plans with mainstreaming of gender-based considerations beyond limited treatment through discrete project activities. GEF projects sought to improve resilience of ecosystems and communities but are still in the midst of setting up effective systems for monitoring changes in resilience. Climate change risk management is insufficient.

Considering the history of state-led development, private sector engagement has been relatively small-scale and concessionary in nature and with insufficient investment to scale sustainable land management practices. Awareness about the benefits of sustainable land management measures is lacking among farmers and investors, hindering their adoption. The recently approved Aral Sea project aims to involve the private sector, rural entrepreneurs, and farmers to invest in sustainable land management.

ANNEX 1. LIST OF INTERVIEWEES AND SITES VISITED

Interviews conducted remotely:

Name	Role	Organization
Mr. Viorel Gutu	FAO Representative in Turkey, Sub-regional representatives for Central Asia	FAO Turkiye
Mr. Sherzod Umarov	FAO Representatives in Uzbekistan	FAO Uzbekistan
Mr. Makhmud Shaumarov	Regional Specialist	FAO Kazakhstan
Mr. Muhammajon Kasimov	Project Manager	FAO Uzbekistan
Mr. Dilshod Khidirov	Project Task Team Leader	World Bank Country Office in Uzbekistan
Mr. Hurshid Rustamov	Former Environment and Climate Action Cluster Leader at UNDP Country Office in Uzbekistan	UN RC Office Azerbaijan
Dr. Tulkin Farmanov	Former Project Manager of 4600	Professor, Agrarian University of Uzbekistan

Interviews and site visits conducted in-person:

<i>Date</i>	<i>Time</i>	<i>Local interviewees and sites visited</i>	<i>Venue</i>
<i>Karakul district, Bukhara province</i>			
<i>May 17, 2023</i>	<i>11:00-16:00</i>	<ol style="list-style-type: none"> 1. Mr. Otabek Ostonov, Deputy Chairman of the Bukhara Karakul Breeding Association, which is a member of the Pasture Development Association (former State Karakul Breeding Association) 2. Mr. Djamshid Nurmukhamedov, Managing Director of the “Karakul LLC” (cluster), which is a member of the Bukhara Karakul Association. 3. Mr. Rahim Shukurov, Chief Zootechnician of the Karakul LLC (cluster) 4. Mr. Mamur Muminov, Veterinarian of the Karakul LLC (cluster) 5. Mr. Buriboy Elboyev, Chief of Security of the Karakul LLC (cluster) 	Karakul Sheep Breeding Complex in Gazli area
<i>May 18, 2023</i>	<i>08:00-12:00</i>	<ol style="list-style-type: none"> 1. Mr. Elyor Toshev, Head of Karakul District branch of State Forestry Agency 2. Mr. Shokir Aminov, Chief Forestry Specialist 3. Mr. Mukhitdin Fatullaev, former Deputy Khokim on Agriculture (during the project) 4. Mr. Sadulla Khamdamov, Specialist of the Karakul Chamber of Cadaster 5. Mr. Makhmud Rajabov, Farmer (former project assistant) 	<i>Karakul district branch of State Forestry</i>
	<i>13:00-17:00</i>	<ol style="list-style-type: none"> 1. Ms. Dilora Ravshanova, a household owner with a Sewing workshop 2. Mr. Ilkhom Turaev, a household owner with a Broiler Farm 3. Ms. Zamira Gaybullaeva, a household owner with a Greenhouse 4. Mr. Jumakul Jumaev, a chairman of PUG 	<i>Project sites in Karakul district</i>
<i>Zaamin district, Jizzakh province</i>			
<i>May 23, 2023</i>	<i>09:00 – 12:00</i>	<ol style="list-style-type: none"> 1. Mr. Abdukadir Sarimsokov, Head of Zaamin district branch of the State Forestry 2. Mr. Rustam Abdusattorov, owner of the “Rustamnoma” farm 	<i>Zaamin State Forestry, forestry and pastures</i>

			<i>related project sites</i>
	13:00 18:00	– 1. Mr. Nizomiddin Akhmatov , owner of the “Hulkar Pistasi” farm 2. Ms. Marhabo Khalikova , a household owner with Energy and Water Source Technology Demonstration 3. Mr. Alijon Omonov , deputy director of the College with greenhouse	<i>Other project sites</i>

ANNEX 2. DIRECT OBSERVATION AND GEOSPATIAL ANALYSIS OF THE SITES VISITED

<i>Region/location</i>	<i>Project site</i>	<i>Type of intervention</i>	<i>Direct observations during the field visit *</i>	<i>Findings of the GEF desk geospatial analysis</i>
Karakul district, Bukhara province	Karakul Sheep Breeding Complex in Gazli area	Construction	N/A	
	Water well and surrounding pasturelands in Gazli area	Rehabilitation of water well	<p>The pastureland on about 300 m radius around the water well was completely degraded as a result of overgrazing and trampling (see pic. 1 and 2). The areas of pasture on a longer distance from the well was also in an extremely poor condition with clear signs of ongoing severe degradation (pic. 3 and 4). The condition of the sparse vegetation cover of pastures indicates a significant decline in soil fertility, aggravated by a catastrophic lack of moisture. The most important ephemeral vegetation for pastures is almost on the verge of extinction (pic. 5). The limited number of perennial shrub species that still grow in these extreme conditions are also extremely vulnerable and show signs of degradation both on the top and on the root system (pic. 6, 7 and 10). The most obvious signs of pasture degradation are mobile sands and takyrs (pic. 8 and 9).</p> <p>While climate change related factor such as increasing frequency and duration of droughts remains a major driver of the land degradation in the region, the anthropogenic influence comes as a second most impacting factor (Figure 4). Verification mission was able to observe intensive use of rangeland territories in Karakul District by industrial companies for gas exploration, extraction, and processing activities. Creation and subsequent utilization of such large-scale production capacities requires a construction of necessary auxiliary infrastructure, which, no doubt, comes with a high environmental cost. Evidence of large volume earthmoving works for the sake of construction of deep and long running industrial wastewater channels (pic. 1 and 2), gas wells drilling (pic.3) and pipeline system (pic.4) that feeds extracted gas to processing plants (pic. 5) are evident and</p>	

<i>Region/location</i>	<i>Project site</i>	<i>Type of intervention</i>	<i>Direct observations during the field visit *</i>	<i>Findings of the GEF desk geospatial analysis</i>
			<p>hard to be unnoticed. Almost the entire pasture area is covered with ruts from the wheels of heavy equipment (pic. 6), which, destroying the vegetation cover and tamping the soil, contributes to desertification of the rangelands.</p>	
	<p>Forestry land in Kandym area (1000 ha)</p>	<p>Afforestation</p>	<p>The verification mission has visited the project site in Kandym area where the project performed afforestation of 1000 ha of desert land prone to degradation by planting seedlings of endemic saxaul trees. The purpose of the afforestation works was to stop process of desertification and reduce the mobility of sands. The results seen at the site proved the primary project targets were achieved and sustained over the time. Planted saxaul tree seedlings has been showing a good growth rates (pic. 1, 3 and 6). Moreover, the process of natural replication of saxaul was evident all over the site (pic. 5). The density of vegetation on the project site, achieved because of the growth and reproduction of saxaul, apparently had a positive impact on the entire ecosystem of the site. Due to the achieved retention of more moisture in the soil, a positive trend in the expansion of ephemeral vegetation and of other perennial shrubs was observed (pic. 2, 4 and 5).</p> <p>Similar situation has been observed on rangelands along the tens of kilometers to and from the mentioned project site (pic. 7), which according to Karakul Forestry officials was a result of replication of the practice on those lands since the completion of the project. This supports the finding of the previous evaluations, including PIRs and TE. According to information provided by the Karakul Forestry after the completion of the project the enterprise had been continuously working on afforestation of additional territories and covered more</p>	<p>NDVI analysis is shown on worksheet 'UZB_Karakul_for'. The GEE images show increasing infrastructure on the landscape here (roads and buildings) with no clear greening. NDVI shows decreasing trend from 2019 onwards and the values are very low showing that this appears to be desert with very little vegetation throughout the period.</p>

<i>Region/location</i>	<i>Project site</i>	<i>Type of intervention</i>	<i>Direct observations during the field visit *</i>	<i>Findings of the GEF desk geospatial analysis</i>
			than 20,000 ha, including 11,000 ha in 2021, 5,500 in 2022 and 4,000 ha in 2023.	
	Agricultural lands in Karakul city	Shelterbelt practice in agroforestry	The verification mission has visited shelterbelts planted with the support from project to demonstrate their effectiveness over the time, when the shelterbelts grow high and effectively perform their protective function resulting in higher and healthier crop yields (pic. 1).	No analysis was done in this area as the area is very thin—a line of trees.
Zaamin district, Jizzakh province	Tree nursery	New pump and piping	The nursery is located on the territory of 80 ha managed by the Zaamin Forestry. Initially it was created on the 50 ha and was later expanded to additional 30 ha. At the time of the visit the nursery was in good condition, with tree seedlings of different varieties and sizes growing on it. The nursery specialized on such endemic tree varieties as mulberry (widely used in local sericulture industry), sycamore, local pines, as well as some non-endemics such locally adapted varieties of poplar, oak and catalpa.	NDVI analysis is shown on worksheet 'UZB_Zaamin_irrigation'. The GEE images show patchwork agriculture throughout the time series—there are what looks like some trees growing in the northeast quadrant in 2015 and 2019 but they are gone in 2022. NDVI is similar to previous area—MODIS shows steady peaks over last five years (but those are higher than peaks from earlier years) but Sentinel shows lowering trend.
	100 ha under pistachio	Afforestation	The mission was able to visually verify the availability of the fence and pistachio seedlings planted in special deepend pits. The plantation was supposed to grow naturally relying on natural precipitation and without any additional cultivation. Due to increased droughts and lack of adequate rainfall the survival rate of seedlings is 30%, which is considered as acceptable rate.	NDVI analysis is shown on worksheet 'UZB_Zaamin_pistachio'. The GEE images fairly sparsely vegetated area with evidence of patterned planting in 2022, but not much greenness. The MODIS NDVI shows steady peaks throughout the time series but the Sentinel shows rising peaks from 2020 onwards—hard to tell if that is just weather, signal noise or what because it doesn't seem to match the MODIS and we don't see a lot of evidence of greening in the images.
	16 ha of primary seed production of desert	Afforestation, fencing	At the time of the visit the mission was able to visually verify 16 ha of fenced area (pic. 1 and 2) with numerous shrubs of perennial shrubs (pic. 3, 4 and 5), identified as grown desert fodder plants.	NDVI analysis is shown on worksheet 'UZB_Zaamin_dforage'. The GEE images do not show any significant change over the time series in a very arid location. NDVI is not showing any clear trends either—MODIS seems to be fairly

<i>Region/location</i>	<i>Project site</i>	<i>Type of intervention</i>	<i>Direct observations during the field visit *</i>	<i>Findings of the GEF desk geospatial analysis</i>
	forage plants			steady with perhaps slight decrease from 2019 onwards but nothing outside the norm for the rest of the period. Sentinel shows a dip after 2019 too but then 2023 is higher again, so we're probably just seeing the background climate rather than any changes from the project.
	2.8 ha model plum orchard with pump and drip irrigation - discontinued	Afforestation	<p>At the moment of the visit the orchard was discontinued. The reasons explained by the owner of the farm included problems during Covid-19 pandemic and some family reasons. The farmer has also noted plans to restore the orchard.</p> <p>Nevertheless, the practice initially demonstrated by the project was picked up and replicated by the neighboring farmers by setting up a grape orchard on the left (pic. 5) and multifruit orchard on the right from the project</p>	NDVI analysis is shown on worksheet 'UZB_Zaamin_plum'. The GEE images show an agriculture field with little change throughout the time series. NDVI is similar—there is variation year to year but no clear trend in either direction, except for potentially an increasing trend from 2021 onwards.
	138 ha afforested due to project support (7, 28 and 103 ha)	Afforestation	The verification mission has seen initial signs of developing landslides on some of the distant hills where large flocks of sheep were still grazing (pic. 1 and 2). At least 135 ha of hills around the Zaamin town have been afforested (pic. 3, 4 and 5) by the Zaamin Forestry to stop the degradation and mitigate risks to the residents of the town. The trees seen by the mission were mainly pine trees which are endemic for Zaamin District. According to the management of the Zaamin Forestry, annual afforestation plans are available and targets have been fulfilled. The emphasis has been made on lands primarily in residential areas to improve the quality of living spaces and on distant lands under Zaamin Forestry management.	<p>NDVI analysis is shown on worksheet 'UZB_Zaamin_aff7'. The GEE images show grid patterns on the agricultural landscape in 2023. That image is particularly green in the eastern half of the area, but this could be due to the timing of the image in March where the other two are in Aug/Sep. Sentinel NDVI shows upward trend from 2020 onwards which could show improving conditions from afforestation but MODIS does not have that same trend. This is a fairly small area, so it could be that the MODIS isn't capturing the dynamics within the boundaries given its large cell size.</p> <p>NDVI analysis is shown on worksheet 'UZB_Zaamin_aff28'. The GEE images show grid patterns on the agricultural landscape in 2022 which is missing from previous images. There is a bit of growth from June to September 2022. NDVI shows a potential increasing trend from</p>

<i>Region/location</i>	<i>Project site</i>	<i>Type of intervention</i>	<i>Direct observations during the field visit *</i>	<i>Findings of the GEF desk geospatial analysis</i>
				<p>2021 onwards. It is a short period for a definitive trend, but could be a sign of the afforestation.</p> <p>NDVI analysis is shown on worksheet 'UZB_Zaamin_aff103'. The GEE images show grid patterns on the agricultural landscape in 2022 which is missing from previous images and is still present in 2023. Similar to other afforestation sites above, there is a potential increasing trend from 2021 onwards which could be due to afforestation.</p>