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LAND DEGRADATION FOCAL AREA STUDY

(Prepared by the GEF Independent Evaluation Office)

ABBREVIATIONS

ADB	Asian Development Bank
AfDB	African Development Bank
CI	Conservation International
CO2-eq	Carbon Dioxide Equivalent
CSO	Civil Society Organization
ECA	Europe and Central Asia
FAO	Food and Agriculture Organization
GBI	GEF Benefits Index
GDPI	Gross Domestic Product Index
GEB	Global Environmental Benefit
GEF	Global Environment Facility
GEF-1	GEF's first replenishment phase
GEF-2	GEF's second replenishment phase
GEF-3	GEF's third replenishment phase
GEF-4	GEF's fourth replenishment phase
GEF-5	GEF's fifth replenishment phase
GEF-6	GEF's sixth replenishment phase
GPI	GEF Performance Index
ha	Hectare
IAP	Integrated Approach Pilot
IEO	Independent Evaluation Office
IFAD	International Fund for Agricultural Development
INRM	Integrated Natural Resource Management
IW	International Waters
KII	Key Informant Interview
LAC	Latin America and the Caribbean
LD	Land Degradation
LDFA	Land Degradation Focal Area
LDN	Land Degradation Neutrality
M&E	Monitoring and Evaluation
MDB	Multilateral Development Bank
MDG	Millennium Development Goal
MFA	Multi-Focal Area
NPVI	Normalized Difference Vegetation Index
PIF	Project Implementation Form
PMAT	Portfolio Monitoring and Assessment Tool
PMIS	Project Management Information System
QAE	Quality At Entry
SDG	Sustainable Development Goal
SFM	Sustainable Forest Management

SGP	Small Grants Programme
SLEM	Sustainable Land and Ecosystem Management
SLM	Sustainable Land Management
STAR	System for a Transparent Allocation of Resources
tC	Tons of Carbon
TE	Terminal Evaluation
TER	Terminal Evaluation Review
TER Dataset	Terminal Evaluation and Annual Performance Report Dataset
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VFM	Value For Money
WWF	World Wild Life Fund

EXECUTIVE SUMMARY

1. The Land Degradation Focal Area (LDFA), established during GEF-3 (2002-2006) as a separate focal area, currently combines the principles of landscape approach and integrated ecosystem management to maximize the global environmental benefits of combating land degradation. The purpose of this study, as part of OPS 6, is to inform the GEF-7 replenishment process based on the evidence from an analysis of 618 LDFA projects or Multi-Focal Area (MFA) projects with an LD component, terminal evaluations, review of the results frameworks of completed projects, twenty key informant interviews (KII), and a case study. This focal area study, is the first stand-alone study undertaken by the GEF's Independent Evaluation Office (IEO) to assess the relevance and effectiveness of the GEF LDFA. It presents the following key themes: (i) the relevance of LDFA strategies (ii) the LDFA portfolio and (iii) the performance, including monitoring and evaluation (M&E) of completed projects. The study concludes with recommendations for consideration.

Findings

Strategic Focus

2. The GEF Land Degradation focal area has evolved through the GEF-3, GEF-4, GEF-5 and GEF-6 phases to remain relevant, closely reflecting convention guidance, and more recently, expanding to include the new ambition towards achieving Land Degradation Neutrality (LDN). Land Degradation viewed as a 'linkage activity' in the first decade of the GEF, emerged as single focal area during GEF-3 and has been gradually moving towards integrated approaches aiming to deliver Global Environmental Benefits (GEBs) in multiple focal areas while generating local environmental and development benefits.

3. The GEF-LDFA strategies have responded well to United Nations Convention to Combat Desertification (UNCCD) global priorities including its focus on combatting desertification in Africa and the emphasis on drylands. In addition, GEF's support to tackle land degradation, since its early replenishment phases[1] have also strived to achieve both geographical balance, and to include non-dryland areas. During COP12, the land degradation neutrality (LDN) framework expanded its scope from drylands to include global lands[2]. GEF's mandate to address unsustainable land management practices and degradation issues have been much broader in scope, and driven by country priorities and needs.

Portfolio

4. *Move towards MFAs*. Since the launch of the LDFA in GEF-3, there have been 618 land degradation projects[3] or multi-focal area projects with an LD component amounting to a total of $3.364 billion in financing ($3.046 billion in project costs and $318.6 million in Agency fees).[4]

[1] Progressing Towards Environment Results: Third Overall Performance of the GEF

[2] Safriel U. (2017). Land Degradation Neutrality (LDN) in drylands and beyond – where has it come from and where does it go. Silva Fennica vol. 51 no. 1B article id 1650. 19 p. https://doi.org/10.14214/sf.1650

3 At the time of analysis April 2017

[4] Project financing in this document is PPG + Project Grant + Agency Fees. From this point forward, when referring to project cost, Agency Fees are excluded.

Of these, 42 percent are classified solely as LD projects and 58 percent are classified as MFA projects with an LD component.[5] Of the 618 projects, 98 have been completed (16%), 135 (22%) are currently under implementation, and the rest are at the various stages approval process. A total of $689 million has been approved for LDFA-only projects and another $2.35 billion has been approved for MFA projects.[6]

5. *Regional Focus.* Africa has the highest share of LDFA projects in the portfolio with $1.12 billion or 37 percent of financing, followed by Latin American and the Caribbean with $674 million or 24 percent of financing, and then Asia with $528 million or 17 percent of financing. In fact, the Africa region receives fewer GEF resources than Asia or regional projects, but by far the most LDFA resources.

6. *Co-financing*. On average, for every GEF dollar spent on LD projects, another $6.7 in co-financing is acquired. The overall co-financing for LD stand-alone projects is lower, at $6 to $1. The GEF average co-financing has improved from $5.50 to $1 during GEF-4 to $7.50 to $1 during GEF-6.

7. *Shift towards Integrated Landscapes. LDFA* projects most frequently focus on forest and agricultural lands. Rangelands are also a common focus of LD stand-alone projects. Agricultural lands, rangelands, degraded productive lands, and desert lands are the most frequent land type focus areas for LD stand-alone projects. Urban lands are the least frequent land focus of LDFA projects. Between GEF-3 and GEF-5, the focus on forest lands, agricultural lands, and water bodies have declined as a focus of LDFA projects. Although forest lands saw a 35 percent decline, the focus shifted to more holistic integrated landscapes with an almost 30 percent increase over that timeframe.

8. While new projects in the GEF-6 pipeline have increased their focus on responding to LDN targets through both sustainable land management (SLM) and restoration activities, about three quarters of LDFA projects do not include a restoration component. When land restoration does occur, it is twice as likely to be for forested lands or other natural ecosystems. One in ten LDFA projects include a component to restore productive lands that are degraded.

9. *Tracking.* The new and improved version of the tracking tool only began in GEF-5 and as such has not tracked results for any completed projects from GEF-3 and GEF-4, and has only tracked one project that has reached a mid-term review. The tracking tool has been simplified from its original cumbersome version to a more practical form. But, tracking can still be difficult for MFA projects, which require project managers to complete separate tracking tools for each focal area. The Integrated Approach Pilots, the Amazon Sustainable Landscapes Program, The Restoration Initiative and the Illegal Wildlife Trade program have their own tracking tool.

Relevance

10. Overall the LDFA has helped the GEF achieve its mandate of creating global environmental benefits. LDFA investments have led to positive impacts on UNCCD targets,

[5] 34 projects were identified as MFA but it was not clear in the PMIS database if these projects included a land degradation component

[6] These are project grants excluding agency fees

specifically increasing vegetation productivity and carbon sequestration, and reducing forest loss and forest fragmentation, besides generating additional benefits for the biodiversity and climate change focal areas.

11. The LDFA is responding to the UNCCD framework towards land degradation neutrality (LDN). The UNCCD, in line with the SDGs, has made a major shift in focus towards achieving LDN by maintaining and improving the productivity of land resources through SLM practices, and restoring productive lands that have been degraded. Even though the LDFA has maintained a relevant focus on SLM activities critical for maintaining and improving land productivity, this study found that 10 percent of LDFA projects work on restoring degraded productive lands.

12. The LDFA is highly relevant to country needs in all regions, particularly in Africa. The LDFA has the largest number of projects and funding in Africa. An analysis of the UN's Small Grants Programme, which allocates small donations to CSOs, shows that LDFA projects are in much higher demand than actual GEF funding would suggest. Currently, the LDFA receives the fewest resources of all five GEF focal areas, but is the second highest demanded focal area among CSOs in the Small Grants Programme.

Performance

13. *Effectiveness.* The LDFA is effective in producing global environmental benefits, though results varied across regions. A Geospatial Impact analysis and Value for Money (VFM) analysis show there have been important reductions in fragmentation and forest loss and an increase in vegetation productivity and carbon sequestration. The VFM analysis reveals three pertinent findings on project effectiveness:

(a) A lag time of 4.5–5.5 years was an important inflection point at which impacts were observed to be larger in magnitude.

(b) Projects with access to electricity tend to have some of the largest relative positive impacts. This may be due to better infrastructure, and access to energy sources for irrigation.

(c) The initial state of the environment is a key driver in GEF impacts, with GEF projects tending to have a larger impact in areas with poorer initial conditions.

14. Analysis of LDFA projects in the APR 2016 database showed that the LDFA portfolio was rated satisfactorily on outcomes, sustainability, M&E Design and Implementation, Implementation Quality, and Execution Quality. LDFA projects have slightly higher M&E design ratings than the GEF average where 63 percent of LDFA projects were rated "satisfactory" compared to 61 percent of non-LDFA projects.

15. *Multi-stakeholder partnerships and local participation*. SLEM case study analysis show that effective multi-stakeholder partnerships between government agencies, civil society, private sector, and grassroots organizations, and prioritizing the participation of local stakeholders play a critical role in addressing policy issues such as land tenure rights, and environmental issues such soil erosion, and loss of land productivity at the local level and in generating environmental and socio-economic benefits that are sustainable.

16. *Income generation and livelihood security*. Income generation and livelihood security through LDFA initiatives offered the greatest motivation for people to adopt sustainable land management practices with subsequent influence on their decision to migrate. Case study analysis and beneficiary survey show that project activities that focus on improving income and market access, and the productive capabilities of project beneficiaries, improve both environmental and socio-economic outcomes and influence peoples' decision not to migrate to urban areas.

Climate Risks. Addressing climate risks is imperative to realize the full potential of achieving GEBs. Case study analysis in India demonstrates that variability in weather, and extreme events such as droughts were not given due consideration in designing some of the agriculture based livelihood activities. While the projects did generate environmental and socio-economic benefits through SLM practices, beneficiaries raised concerns regarding their knowledge, adaptive capacity, and the suitability of the ongoing practices to cope with climate related shocks. These gaps at the local level could potentially limit the realization of the GEBs through LDFA initiatives if unaddressed.

Recommendations

(a) **Implementing LDN with an appropriate mix of interventions.** While being cognizant of cost-effectiveness, context, and country priorities, LDFA should also consider restoration activities along with SLM. SLM practices are intended to help avoid and reduce land degradation while ecosystem restoration will help reverse the process. Newer projects in GEF-6 increasingly focus on achieving LDN targets and therefore would benefit from distinguishing between the two complementary pathways—SLM, and ecosystem restoration, to be able to measure progress toward the LDN targets.

(b) **Give due consideration to complex contextual factors within an integrated approach framework.** While LDFA's strategic focus has appropriately moved toward integrated approaches, complex contextual factors including drought, food insecurity and migration should be given due consideration during project design. The LDFA is highly relevant to areas with land degradation, including Africa, particularly with its distressed emigration hotspots. While neither land degradation nor drought are the primary drivers, they increase food insecurity and vulnerability and therefore may exacerbate the risk of conflict or migration

(c) **Assess climate risks to LDFA initiatives and design adaptive management responses to such risks.** Unsustainable land management practices which the GEF LDFA strategies aim to ameliorate, have a direct and clear linkage to climate change. The effects of climate change are likely to affect many land-based activities including ecosystem functions and services. Broader application of the RAPTA framework is encouraged.

(d) **Strengthen M&E tools, and methods of knowledge dissemination.** The development and continued improvement of the tracking tool is a step in the right direction but will be inadequate to assess project impacts in the long run. The tracking tools should include additional biophysical indicators, increasingly available through geospatial data, to set baselines and measure progress of land productivity to track both GEB's and LDN targets. Precise geospatial information on project locations is imperative for carrying out accurate M&E of LD projects. The LDFA should consider integrating the indicators proposed by the UNCCD's Land Degradation Neutrality (LDN) framework. The benefits and impacts of sustained SLM practices and restoration measures are not fully accounted for in the current M&E system. Recognition therefore should be given to the fact that it might be necessary to set a sufficiently longer time frame in monitoring projects striving to achieve LDN.

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I. INTRODUCTION

Objectives, Methodology and Context

17. The Land Degradation Focal Area (LDFA) strategy of the GEF currently combines the principles of Sustainable Land Management (SLM)[7] and integrated natural resource management[8] to maximize the global environmental benefits of combating land degradation. During GEF-1 and GEF-2, land degradation was viewed as a "linkage activity" that cut across the focal areas on climate change, biodiversity, and international waters. However, in GEF-3, the GEF mandate was expanded to include Land Degradation as a new focal area on the basis of the Millennium Ecosystem Assessment's recommendation for investment in the prevention and control of land degradation in production landscapes. In 2010, the GEF began serving as the financial mechanism of the United Nations Convention to Combat Desertification (UNCCD).

18. Previous studies on the GEF Land Degradation investments include progress towards impact studies, country portfolio evaluation reports (ACPERs), Focal Area Strategies Evaluation, GEF Small Grants Programme evaluations, and annual monitoring reports. Findings from these studies point to GEF's responsiveness to UNCCD guidance both at the strategic and portfolio levels,[9] to the high demand for GEF support in combatting land degradation, and insufficient funding,[10] and consideration to the timeframe in measuring the impact of LD projects.[11]

19. Stand-alone evaluations of GEF support to LDFA have not been previously conducted by the GEF's Independent Evaluation Office (IEO) or any other agencies. This study is the first comprehensive study of the Land Degradation focal area carried out by the IEO assessing GEF's support to activities focused on addressing land degradation.

20. The purpose of this study is to inform the GEF-7 replenishment process by evaluating the GEF's Land Degradation Focal Area (LDFA) based on the evidence gathered through the review of available documentation, portfolio analysis, case study and analysis of the relevance and effectiveness of the LDFA since GEF-3. The study has the following objectives:

(a) assess the LD focal area strategy,

(b) analyze the LDFA portfolio and present trends,

(c) assess the performance of completed LDFA projects, and

(d) present recommendations for GEF-7.

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[7] According to the World Bank, "Sustainable land management is a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management (including input and output externalities) to meet rising food and fiber demands while sustaining ecosystem services and livelihoods". (http://siteresources.worldbank.org/EXTARD/Resources/336681-1215724937571/eBook.pdf)

[8] As defined by J.A. Sayer and B. Campbell: "Integrated Natural Resource Management is a conscious process of incorporating the multiple aspects of resource use into a system of sustainable management to meet the goals of resource users, managers and other stakeholders (e.g. production, food security, profitability, risk aversion and sustainability goals)." The Science of Sustainable Development: Local Livelihoods and the Global Environment. Cambridge University Press, 2004.

[9] OPS-5, http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-1st-report-eng.pdf

[10] ACPER 2008; OPS-5, http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-1st-report-eng.pdf

[11] OPS-4, http://www.gefieo.org/sites/default/files/ieo/evaluations/ops4_0.pdf, pg. 15, 74

21. This study draws on document reviews, twenty key informant interviews (KII), a portfolio analysis of 618 LDFA projects based on GEF's Project Management Information System (PMIS), review completed projects to assess performance, and a case study to assess progress towards impact. The case study comprises of two completed MFA projects with LD components and was complemented by field visits and interviews at the project sites. A mobile phone application based on Open Data Kit (ODK) was piloted to collect perspectives from 80 percent of the project beneficiaries at one site.

22. The study also includes a Value for Money (VFM) analysis carried out by GEF IEO to understand the effectiveness of GEF investments in land degradation projects. In addition, the study also includes the preliminary results of the Portfolio Monitoring and Assessment Tool (PMAT) that was carried out by GEFSEC, commonly known as the tracking tool used for LDFA projects since GEF-5.

Evolution of the LD Focal Area Strategy

GEF-1 and GEF-2 (1991-2002)

23. Since GEF's inception in 1991 until the third GEF replenishment in 2002 (GEF-3), land degradation was viewed as a "linkage activity" that cut across the climate change, biodiversity, and international waters focal areas. A 2001 analysis (Berry and Olson, 2001) showed that almost seventy percent of the projects with a strong LD component fell within the Biodiversity Focal Area. The other thirty percent of these projects belonged to the Climate Change mitigation and International Waters focal areas, fifteen percent for each.

24. The 2001 analysis showed that LD was not as strong a component as previously thought and that "the number of land degradation projects and financial allocation to land degradation has not increased in recent years." Also most of the LD components focused on, or near, protected conservation areas. The study concluded, "In general, the large majority of current projects identified as land degradation linkage projects have been designed to address the (other) focal areas as a first priority and only in some cases has land degradation mitigation been a priority."

GEF-3 (2002-2006)

25. During GEF-3, Land Degradation was established as a separate Focal Area. This was important, first, because it meant there was an immediate allocation of resources to directly combat land degradation challenges. According to the SLM primer for GEF-6 (GEF 2015a), this led to the formulation of 158 projects with LD components, totaling $644 million. Second, it approved a separate $250 million for projects under the new LD Focal Area. Together, this led to the development of 180 LD-related projects, more than twice as many than had existed until then. At the close of GEF-3, SLM investment was nearly $400 million and generated $1.08 billion in co-financing.

GEF-4 (2006-2010)

26. Starting in 2006, during GEF's fourth replenishment phase (GEF-4), the LDFA was expanded in two ways. First, there was a shift from designing LD projects solely at the national-level to more regional or multi-country projects. Second, rather than focusing on single tranche, stand-alone LD projects, the LDFA expanded into programmatic approaches. Specifically, 61 percent of the $340 million GEF-4 allocation to LD was invested in three large-scale programmatic approaches to SLM. The total GEF-4 allocation saw a doubling in co-financing from GEF-3 to $2.3 billion.

GEF-5 (2010-2014)

27. GEF-5 saw similar allocations as GEF-4, but with some structural changes. Overall, the GEF-5 LDFA allocation was $385 million with $2 billion in co-financing. However, this was the first time that the LDFA functioned as one of the financing mechanisms for the United Nations Convention to Combat Desertification (UNCCD), along with the UNCCD's Global Mechanism. The LDFA is directly linked to the UNCCD's 10-year strategy, which concludes in 2018. The UNCCD aims to reverse and prevent desertification and land degradation and support poverty reduction and environmental sustainability.

28. During GEF-5 a new system of resource allocation was applied to the LDFA. For the first time, most LDFA resources were allocated using the System for a Transparent Allocation of Resources (STAR). The STAR is based on a set of indices. These include: the GEF performance index (GPI), the Gross domestic product index (GDPI), and the GEF benefits index (GBI). The GBI for the LDFA has three indicators. These include: the area affected by LD, the total dryland area, and the vulnerable population impacted. Basing resource allocation on measurable indices improve transparency and flexibility and ensures synergies with Focal Area objectives, a smaller portion of LDFA resources are allocated as "set-aside" funds. These funds are used to support the LDFA through: (i) UNCCD enabling activities; (ii) incentive mechanisms for SFM programs and the IAP on "fostering sustainability and resilience of product systems in sub-Saharan Africa;" and (iii) global initiatives to foster regional integration and knowledge sharing and transfer to advance SLM globally.

GEF-6 (2014-2018)

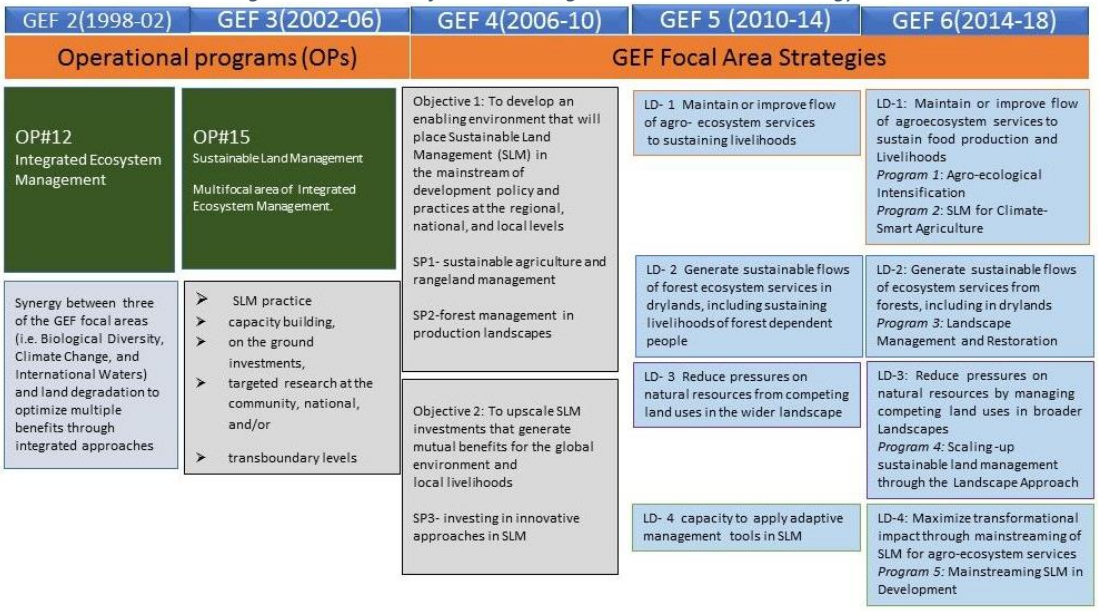
29. GEF-6 has trended towards using a multi-focal area (MFA) approach project design. In practice, a multi-focal area approach implements projects that are designed to achieve objectives in two or more of the focal areas. LDFA resources have steadily moved towards a MFA approach. To further highlight this trend, GEF-6 introduced three Integrated Approach Pilots (IAPs) of which one is focused on land degradation in Africa and entitled, "Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa." Generally, these integrated pilots aim to generate global environmental benefits by promoting local development benefits. More specifically, an integrated approach pilot (IAP) is intended to target the entire supply chain to improve productive systems. This goes beyond reducing land degradation acreage but extends into areas such as improved market access, policy reforms, private sector engagement, and knowledge generation to promote sustainability and resilience in food value chains.

30. The GEF-6 LDFA strategy is responding to the framework of land degradation neutrality (LDN). The UNCCD's Intergovernmental Working Group defines LDN as "a state whereby the amount of healthy and productive land resources, necessary to support ecosystem services, remains stable or increases within specified temporal and spatial scales." The benefit to LDN is that it allows nations to manage their own trade-offs between biological and economic productivity. In 2012, LDN was designated as a priority at the UN Conference on Sustainable Development (Rio +20). The UNCCD also made LDN a priority by including LDN targets in the new SDGs (target 15.3). In fact, LDN has become the UNCCD's chief mandate.

31. The LDFA has responded to this development and the guidance to the convention. LDN was a component prior to GEF-6, and since 2016 LDFA project PIFs submitted by countries with voluntary LDN targets require establishing linkages between project activities and how those activities bolster LDN targets. As part of GEF-6, more projects are increasingly recognizing LDN as a major component of their project design. For example, a full-sized project for combatting land degradation in the mountain landscapes of Lebanon seeks to achieve land degradation neutrality through integrated landscape management.

32. The LDFA has steadily expanded the number of agencies it partners with on LD or LD-related projects. The number of lead agencies on LDFA projects or MFA projects with a land degradation component has doubled since GEF-3.This allows for a broader spectrum of institutions with a broader set of mandates to combat land degradation in ways specific to those institutions.

Figure 1: Evolution of GEF Land Degradation Focal Area Strategy.



II. FINDINGS

Analysis of the GEF LDFA Portfolio

33. At the time of analysis[12], there are 618 land degradation projects or multi-focal area projects with an LD component (Figure 2) since GEF-3. Of these, 42 percent (259 projects) are classified solely as LD projects and 58 percent (359 projects) are classified as MFA projects with an LD element. Of the 618 projects, 98 (16%) have been completed[13], 135 (22%) are currently under implementation, and 196 (32%) have completed their GEF approval process and are ready to start implementation,[14] while the remaining 187 projects (30%) are at the various stages of the design and approval process.[15] A total of $689 million has been approved for LDFA-stand-alone projects. Another $2.35 billion has been approved for LD MFA projects, but not all of these funds come from LDFA replenishments[16] (Figure 3).

34. The LDFA portfolio has 428 (69%) full-sized LDFA projects accounting for $2.923 billion (96% of total funding), 144 projects (23%) accounting for $113.6 million (4% of total funding) are medium-sized projects, and 46 (7%) are enabling activity projects, with financing of less than $150,000 each. A slight majority of LD stand-alone projects are medium-sized (111

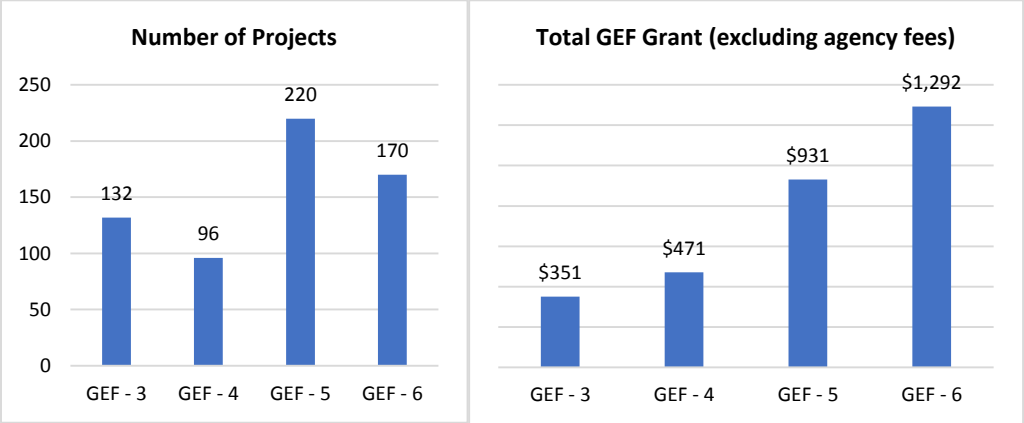
[12] April, 2017
[13] All completed projects have been initiated during GEF-3 and GEF-4 with the exception of one GEF-5 project.
[14] Projects which are CEO Approved or CEO Endorsed are considered to have completed their GEF Approval process and are ready to start implementation.
[15] Projects that have either been approved by Council (but still need CEO Approval), or still in the pipeline (at PPG or awaiting work program inclusion).
[16] Unclear from the PMIS how many of these MFA funds come from LDFA replenishments; Also note that financing excludes agency fees to account only for money gone to actual projects.

medium-sized projects to 102 full-sized) while the majority of MFA projects with an LD component are full-sized (326 full-sized projects and 33 medium-sized).

LDFA Portfolio by Replenishment Cycle

35. Most LD-related projects were approved during GEF-5 (Figure 2)[17] but GEF-6 already has the highest amount for approved grants of any other replenishment phase. This is largely because of the increased focus on MFA projects, which utilize resources from multiple focal areas, not just the LDFA. Eleven percent of GEF-5 projects are under implementation; 69% are approved/endorsed and ready to start implementation; 20% are at the various stages of the approval process. At the time of this evaluation, GEF-6 included 170 projects (28% of the total portfolio and 42% of the funding), 42 of which (account for $277 million) are approved and ready to start implementation, while the remaining are still in the pipeline.

Figure 2: Total number of LD-related projects (left) and the total grant amount for LD-related projects (right).



36. Figure 3 shows the number of LD stand-alone projects and the number of MFA projects with LD components and the latter far exceed the number of stand-alone projects. Funding is also greatly skewed towards MFA projects that include funds from several focal areas, where approximately 24% of the funding is for coming from the LDFA allocation for LD components (Figure 4).

Figure 3: Number of LD stand-alone projects (left) number of MFA projects with LD components (right)

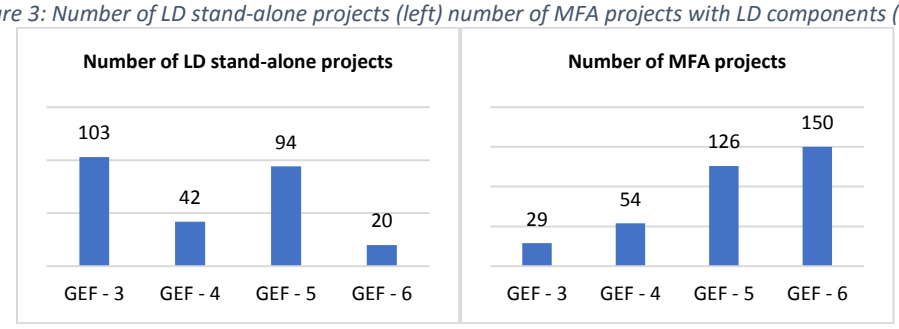
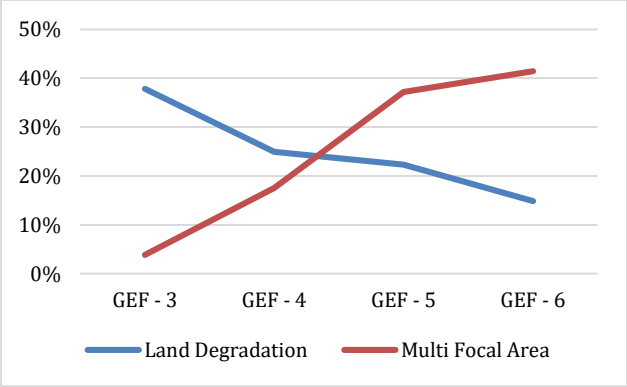


Figure 4: Percent of funding from FA allocation for LD only vs MFA projects

[17] Note that there are still two more years remaining for the GEF-6 replenishment, so the figures below do not represent the final GEF-6 tallies.



LDFA Portfolio by Funding Modality

37. The GEF provides funding through four basic modalities: full-size project (FSP), medium-size project (MSP), enabling activity (EA), and programmatic approaches. There are 428 (69%) full-sized LDFA projects accounting for $2.923 billion (96% of total funding), 144 projects (23%) amounting to $113.6 million (4% of total funding) are medium-sized projects, and 46 (7%) are enabling activity projects, usually worth less than $150,000 for each participating country.

38. A slight majority of LD stand-alone projects are medium-sized (111 medium-sized projects to 102 full-sized) while the majority of MFA projects with an LD component are large-sized (326 large-sized projects to 33 medium-sized). Full-sized MFA projects exceed the full-sized LD stand-alone projects in terms of number and financing. On average, an MFA project with an LD component has an investment of $6.56 million (average LD contribution to MFA project is $1.5 million), while a LD stand-alone project has an investment of $2.66 million. This would explain the discrepancy between the total approved grant amounts for MFA with LD projects and LD stand-alone projects (Figure 6). It also demonstrates the clear trend of the LDFA towards a multi-focal area approach.

39. All enabling activities are LD stand-alone projects. Forty-five of the 46 enabling projects are worth $150,000 or less each and are generally used to help countries comply with UNCCD targets. At the time of this analysis the only enabling activity approved in GEF-6 is being used to support the UNCCD in setting global land degradation neutrality targets and is worth $2.8 million.

Figure 5: Number of LD stand-alone projects (top) and MFA projects with an LD component (bottom) by GEF phase and funding modalities

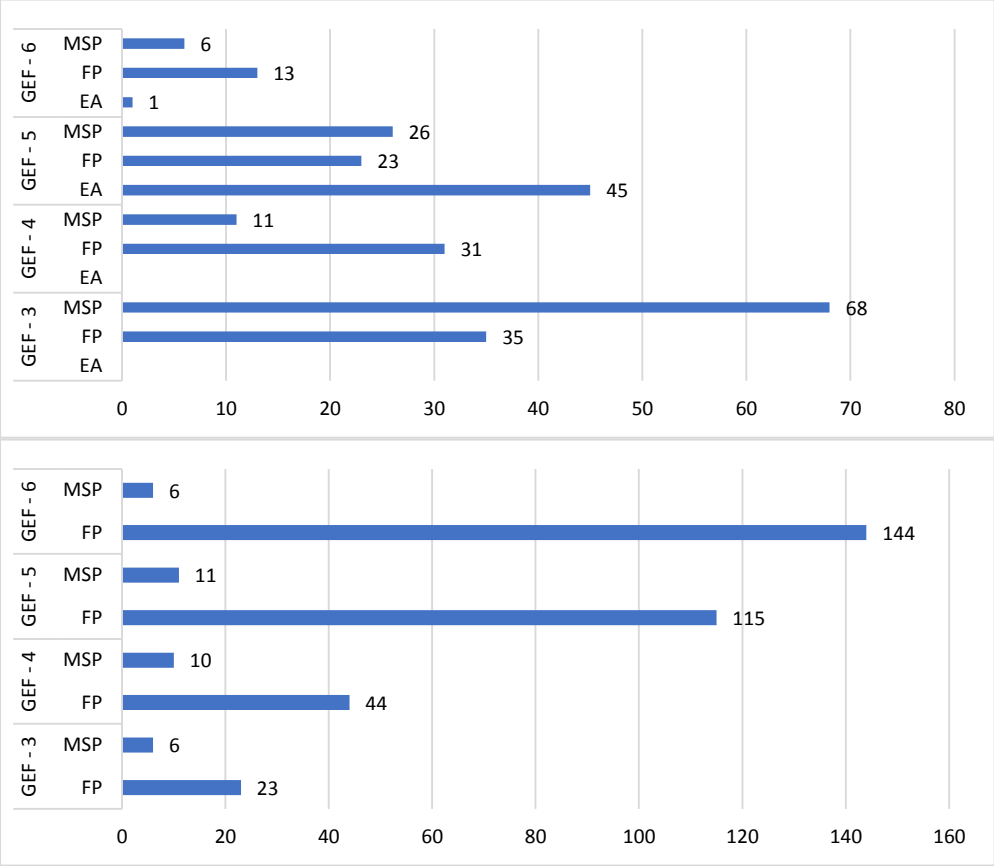
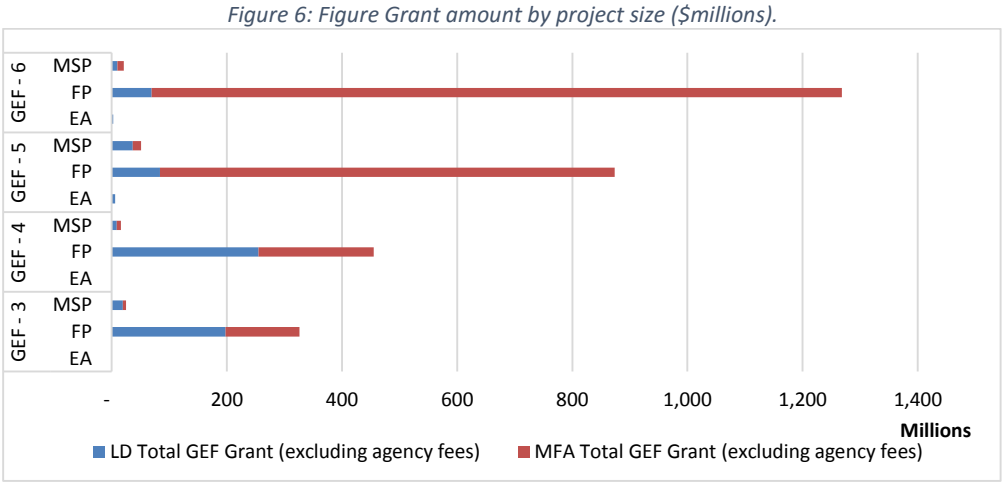


Figure 6: Figure Grant amount by project size ($millions).



LDFA Portfolio by Geographical Coverage

40. The LDFA operates in all developing regions of the world (Figure 7), but the majority of projects and funding go to Africa. Africa has the highest share of LDFA projects in the portfolio with $1.12 billion or 37% of financing (220 projects [36%]), followed by Latin American and the

Caribbean with $674 million or 24 percent of financing (121 projects [20%]) and Asia with $528 million or 17 % of financing (142 projects [23%]). In fact, the Africa region receives fewer GEF resources than projects in Asia, but by far the most LDFA resources (Figure 8). There are 40 percent more LDFA projects in Africa than in Latin American and the Caribbean, which has the second highest number.

Figure 7: Location of LDFA projects.

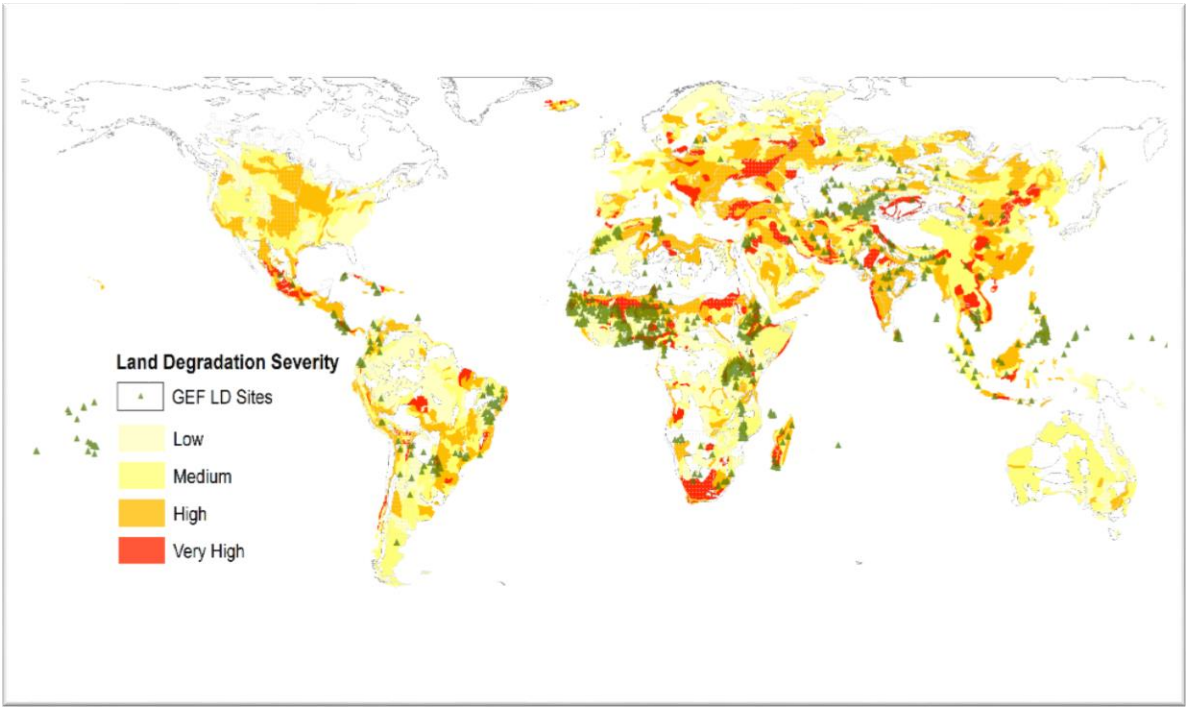
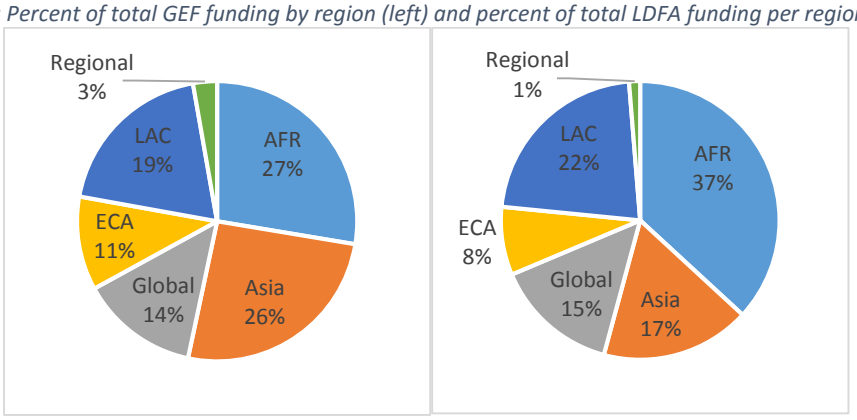


Figure 8: Percent of total GEF funding by region (left) and percent of total LDFA funding per region (right).

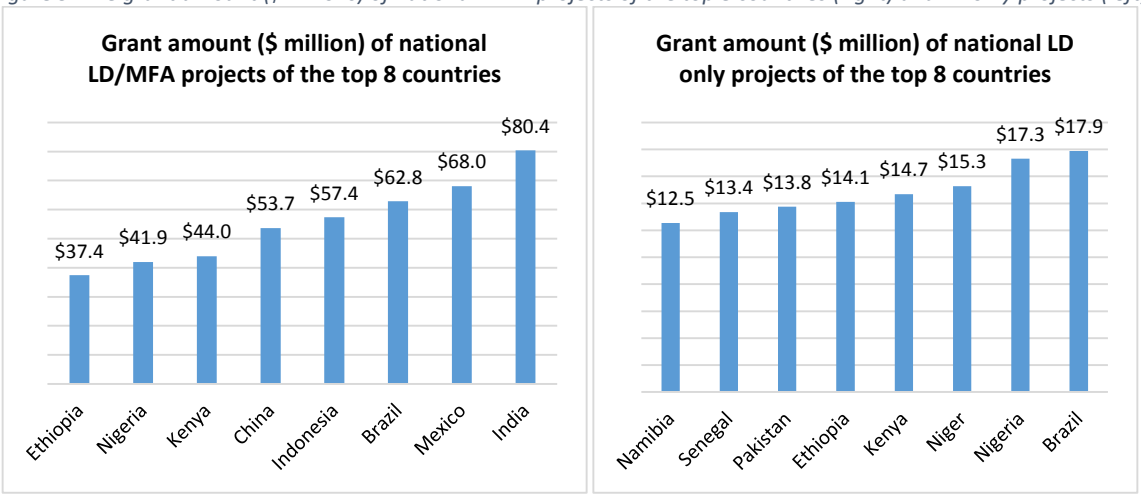


41. National projects make up a majority of LDFA projects in the portfolio. Eighty-four percent of all projects, accounting for 67 percent of LDFA project financing, are national projects, while 16 percent of projects, accounting for 33 percent of project financing, are

regional/global projects. India, Mexico, Brazil, Indonesia, and China received the majority of LD financing (excluding regional and global projects) (Figure 9).

42. India has the largest amount of funding as it includes the large programmatic grant, "Sustainable Land and Ecosystem Management Country Partnership Program (SLEM - CCP)". However, when looking at the countries with the most LD stand-alone projects six of the top eight are in Africa as are the projects with the most amounts of funding (Figure 9).

Figure 9: The grant amount ($millions) of national LDFA projects of the top 8 countries (right) and LD only projects (left)

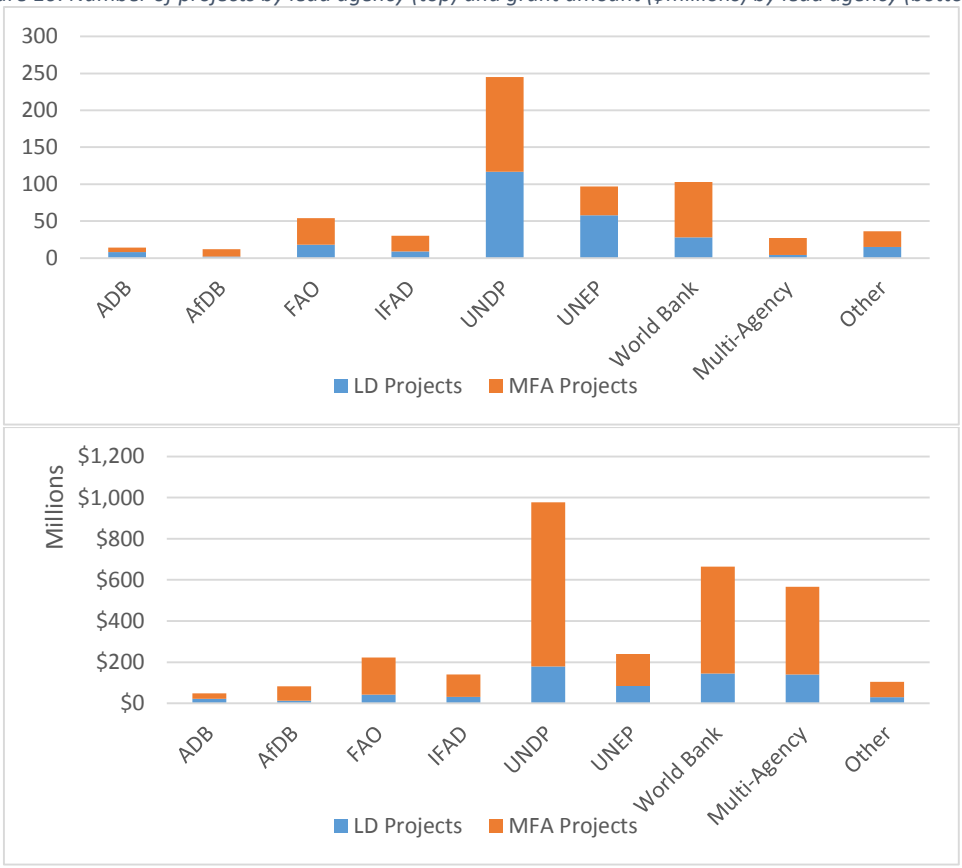


LDFA Portfolio by Agencies

43. UNDP is implementing the most LD-related projects (245 projects – 40% and $977 million financing – 32%), followed by the World Bank with 17 percent of projects (103 projects) and 22 percent ($664 million) of financing (Figure 10). The World Bank and UNDP have the longest experience working with the GEF on SLM projects. UNEP has 97 projects compared to 103 World Bank projects, but UNEP grant amounts are much lower ($239 million – 8%).

44. Newly accredited GEF project agencies have a total of 19 projects (3%) and $59 million (2%).

Figure 10: Number of projects by lead agency (top) and grant amount ($millions) by lead agency (bottom).



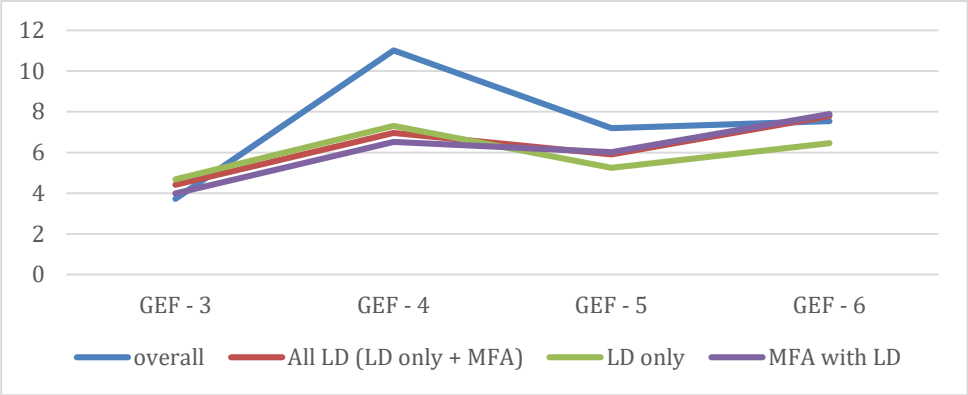
LDFA Portfolio by Programmatic Approaches

45. A program is a series of interconnected projects with a shared goal. Thirty-six LDFA projects are part of six programs. On average, LD-relevant programs have investments of about $46 million each. The six programs include: (1) the Sustainable Land and Ecosystem Management Partnership Country Partnership Program (SLEM - CCP) in India, (2) the Integrated Nature Resources Management program (MENARID) in the Middle East and North Africa Region, (3) the Partnership on Land Degradation in Dryland Ecosystems Program in China, (4) the Congo Basin Strategic Program (CBSP), (5) the Sahel and West Africa Program in Support of the Great Green Wall Initiative (GGW), and (6) the Desert Ecosystems and Livelihoods Program (DELP) in the Middle East and North Africa.

LDFA Portfolio Co-financing

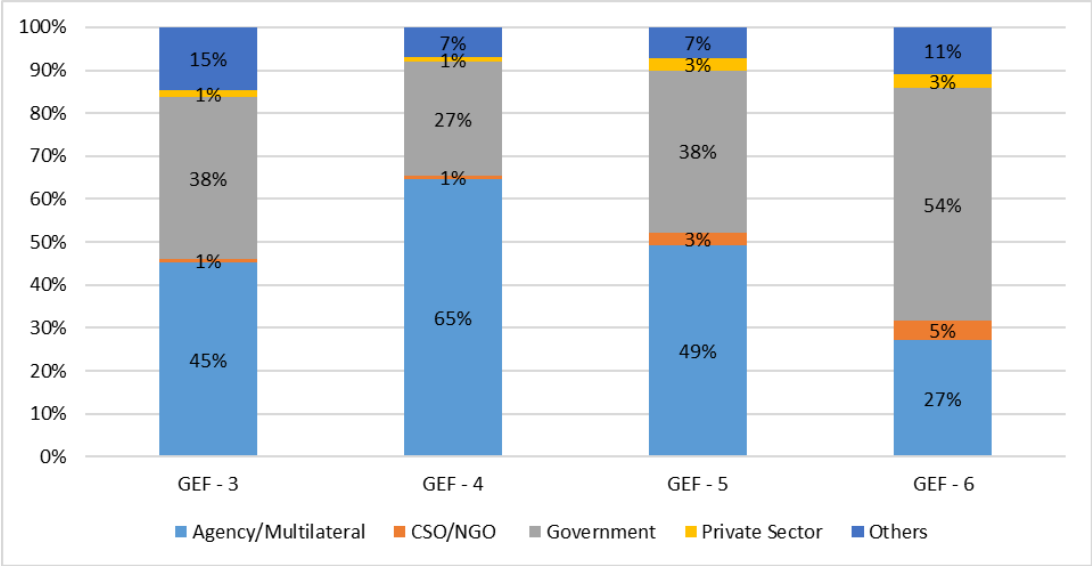
46. On average, for every dollar the GEF spends on LD projects, another $6.7 in co-financing is acquired. The overall co-financing for LD stand-alone projects is lower, at $6 to $1. The GEF average co-financing has improved from $5.50 to $1 during GEF-4 to $7.50 to $1 during GEF-6. Co-financing for LDFA projects has increased since GEF-3 (Figure 11). Every $1 of GEF funds in programs is leveraged by $11.50 in co-financing.

Figure 11: Dollars in co-financing for every $1 from GEF.



47. The GEF co-financing by Government has increased from 38% during GEF-3 to 54% during GEF-6. While co-financing by the private sector remains low with 1% in GEF-3 and 3% in GEF-6, co-financing by multilateral agencies has decreased over time (Figure 12).

Figure 12: Co-financing by Agencies



LDFA Portfolio by Land Type

48. LDFA projects most frequently focus on forest and agricultural lands. Rangelands are also a common focus of LD stand-alone projects. Agricultural lands, rangelands, degraded productive lands, and desert lands are the most frequent land type focuses for LD stand-alone projects. The focus on water bodies is more relevant to the international waters focal area, though several of the IW MFA projects include LD components. Predictably, urban lands are the least frequent land focus of LDFA projects. This shows the diversity of land cover types that LDFA projects cover within the production landscapes.

49. Forest lands, agricultural lands, and water bodies have declined as a focus in LDFA projects. In particular, forest lands saw a 35 percent decline in project focus from GEF-3 to GEF-

5. By contrast, the focus on integrated landscapes has increased by almost 30 percent. This reflects the GEF's strategic decision to pursue more integrated approaches to SLM.

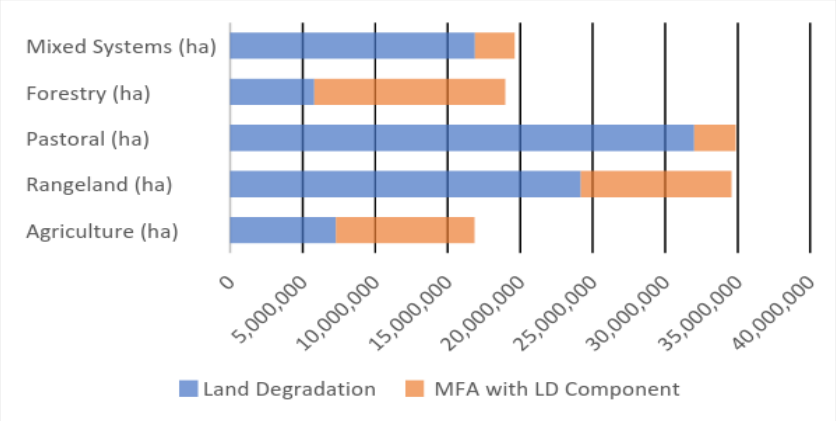
Expected Results from the Monitoring System

50. To monitor the Global Environmental Benefits (GEBs) of LDFA projects, implementing agencies are required to complete the Portfolio Monitoring and Assessment Tool (PMAT), commonly known as the tracking tool. The tool helps report outcomes to the UNCCD and enhance the accountability of the LDFA. The tracking tool only began for LDFA projects in GEF-5. This includes tracking of 109 full- and medium-sized LDFA-only projects (37 projects) and Multi Focal Area projects with LD components (72 projects). Only one of these has reached the mid-term reporting stage, and none have been completed.

51. The system reports the expected results from the portfolio. The land area covered by the 98 projects included in the tracking tool amount to 620,000 square kilometers. Seventy-nine projects have 212.3 million potential beneficiaries including over 100 million poor people. Ninety percent of potential LDFA project beneficiaries live in rural areas, the remaining ten percent live in urban or peri-urban locations. This implies that the average LDFA project covers nearly 6,300 square kilometers (about half the size of Jamaica) and potentially benefits about 2.7 million individuals. It should be noted, however that this number reflects only potential beneficiaries, or people living in project areas, and does not capture the actual number of beneficiaries.

52. Lead implementing agencies are also asked to calculate targeted system areas of projects. Figure 13 shows the number of hectares of each landscape system targeted by the 94 reporting projects. Pastoral and rangeland systems are the largest targeted areas of LDFA projects. Projects target less forest and agricultural system area. This may be because individual rangelands and pastoral systems tend to be larger land areas in general than forest or agricultural land, and is probably not a reflection of priorities. Rangelands and pastoral systems are often used for livestock grazing and simply require a larger area to be productive.

Figure 13: Area of systems target by LDFA projects.



53. The GEF tracking tool monitors the direct and indirect benefits expected over a project's lifetime as shown in Table 1. Based on the analysis of available tracking tool data, on average, an LDFA project or an MFA project with LD components is expected to: (i) produce 13,078

square kilometers of vegetation cover, (ii) avoid 4.3 million tons of carbon emissions, (iii) sequester about 3 million tons of carbon, and (iv) protect 4,807 square kilometers of biodiversity habitat in productive systems. However, LDFA-only projects are expected to generate fewer benefits than MFA projects in these areas. For example, on average an LDFA stand-alone project is expected to produce 40 percent less vegetation cover than a comparable MFA project with an LD component. Similarly, LDFA stand-alone projects are expected to avoid 57 percent fewer tons of carbon emissions, and to sequester 95 percent fewer tons of carbon than comparable MFA projects with an LD component. The reason is that MFA projects include other focal areas such as climate change and biodiversity, which are focused more on improving these GEB indicators. The LDFA however is also expected to produce more socio-economic benefits – such as improved incomes, livelihoods, land productivity, and other local benefits[18] – which the tracking tool does not capture. At the same time, LDFA-only projects on average, protect 61 percent more biodiversity habitat in productive systems than MFA projects with an LD component. Also the fact that the allocation for a LD project is around 2.6 million on average and a MFA with LD component is allocated an average of 1.5 million out of LDFA, the MFA-LD is not only expected to generate more ecological benefits but also provide greater returns for the investments.

Table 1: Expected direct and indirect benefits tracked from eligible LDFA projects.

Project type	Vegetative cover (ha)	Projects	Total Carbon Benefits – Avoided Emissions(Tons CO_2-eq)	Projects	Total Carbon Benefits –Carbon Sequestered(Tons CO_2-eq)	Projects	Habitat protected (ha)	Projects
Land Degradation	20,777,838	23	12,431,575	6	463,249	3	12,793,792	15
MFA with LD component	78,621,048	53	131,041,983	27	105,806,746	32	12,686,844	38
Grand Total	*99,398,886*	*76*	*143,473,558*	*33*	*106,269,995*	*35*	*25,480,636*	*53*

54. The GEF has simplified the tracking tool. The number of required indicators for LD projects was reduced by 75 percent (from 239 to 61) for GEF-6. For MFA projects, the GEF still requires the tracking tool be completed separately for each focal area component of the project.

[18] (1) Foley, et al. (2005) Global Consequences of Land Use, *Science* 309, 570; (2) Land Degradation as a Global Environmental Issue (2006), STAP, GEF/C.30/Inf.8, Page 6, Paragraph 18, Available at: https://www.thegef.org/sites/default/files/council-meeting-documents/C.30.Inf_.8_STAP_Land_Degradation_as_a_Global_Environmental_Issue_4.pdf

Table 2: Number of tracking tool indicators per replenishment phase for LD projects.

Sections	GEF-5 Indicators	GEF-6 Indicators
Project Identification	6	6
Context	140	33
GEBs and Development	16	8
Agriculture and Rangelands	12	3
Forest Management	18	4
Integrated Land Management	10	3
Knowledge Management	37	4
Total	239	61

Relevance

55. The LDFA is highly relevant to global LD challenges, strategic partners, the 2030 development agenda, and the objectives of the GEF and LDFA. The LDFA acts as the main financial mechanism for the UNCCD. Both the UNCCD and the LDFA began as being highly focused on combating desertification, especially in Africa. But, over time, both have evolved and are addressing a wider array of land degradation challenges in all regions.

56. Four strategic objectives were defined in GEF-6 for the LDFA focused on sustaining food production and livelihoods, ecosystem services from forests, reducing pressure of natural resources from land use, and mainstreaming SLM for agro-ecosystem services. These objectives related to improving degraded ecosystems, improving the living conditions of people on degraded land, and producing global environmental benefits are highly aligned with the following three of the UNCCD's four strategic objectives: (i) Improved living conditions of affected populations, (ii) Improved condition of affected ecosystems, and (iii) Generation of global benefits. However, the GEF does not use partnerships to mobilize resources for the UNCCD, the UNCCD's fourth objective (Annex 8). This is a role for the UNCCD's Global Mechanism.

57. Recently approved projects and projects in pipeline in GEF-6 have begun to focus on addressing LDN. Figure 14 shows that about three quarters of LDFA projects do not include a restoration component. When land restoration does occur, it is twice as likely to be for forested lands or other natural ecosystems. One in ten LDFA projects include a component to restore productive lands that are degraded. Figure 15 also shows there has been a slight increase in this type of restoration since GEF-3.

Figure 14: The type of restoration included in LDFA projects

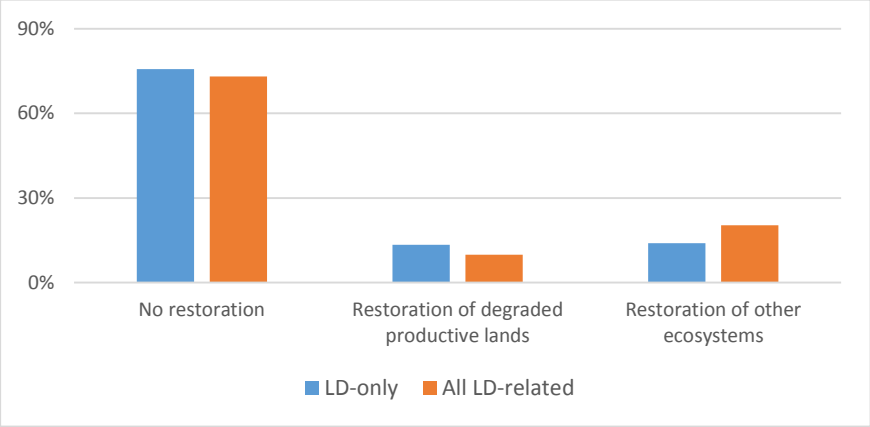
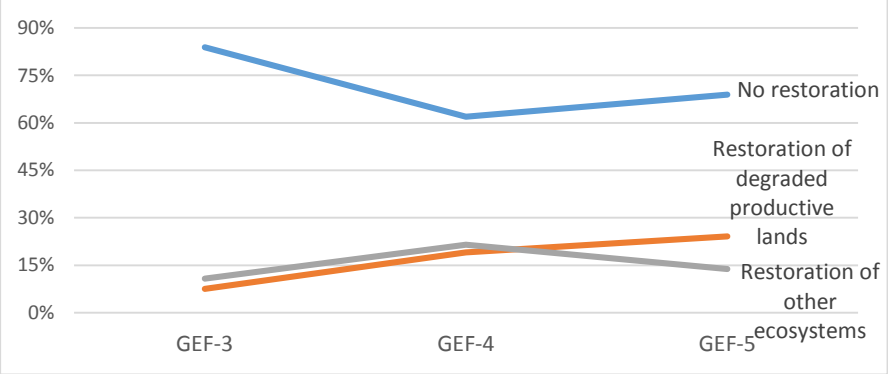
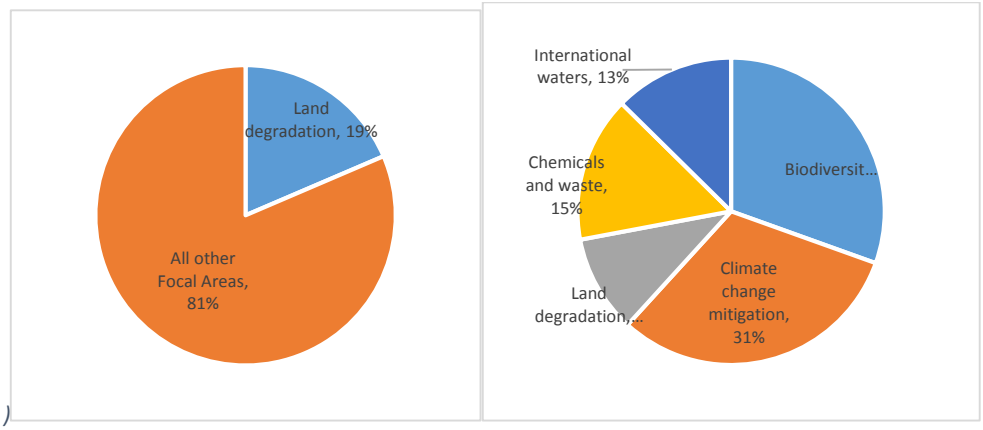


Figure 15: The evolution of restoration activities from GEF-3



58. The LDFA is highly relevant to country needs, especially in the Africa region. To measure "country needs," the evaluation compares GEF funding for LD to the United Nation's Small Grants Program's (SGP) funding as a proxy. The SGP provides small grants (up to $50,000) to local grassroots groups and Civil Society Organizations (CSOs) to improve local ecosystems. To receive this funding, local CSOs must apply for grant money in a focal area. Since nearly all countries utilize SGP funds, the CSO applications represent a reasonable measurement of country demand. Figure 15 shows, this is only ten percent of the GEF focal area allocations. By contrast, the LDFA has been the second highest funded SGP, receiving nearly 20 percent of grant funds (per data provided by the SGP). This suggests that, at least in pure monetary terms, countries and CSOs place a relatively higher priority on LDFA projects than the GEF does.

Figure 16: Target allocation by focal area (right) and total amount in small grants since GEF-3(left



59. In Africa, the demand for LDFA projects is especially high. Africa receives the most LDFA funding than any other region as shown in the portfolio section above. At the AfDB, approximately 50 percent of all GEF funding goes to LD or climate change adaptation projects. The other 50 percent goes to fewer but relatively more expensive climate change mitigation projects.[19] However, a closer look at the climate change adaptation projects (typically funded by the Least Developed Country Fund,) show that these projects essentially address issues related to combating land degradation. Even though climate change adaptation is not funded through the LDFA allocation, it is largely being used to combat land degradation.

60. To examine the LDFA's relevance to address global LD drivers an in-depth review of 25 LD-related project documents was carried out. These projects were chosen to reflect the diversity of projects within the LDFA portfolio, but not necessarily as a representation of the portfolio. Projects were also selected to represent a diversity of regions, lead agencies, project sizes, and implementation stages. Of the 25 projects, 18 were classified as LDFA-only projects, while seven were MFA projects with an LD component. Using the framework established by Mirzabaev and others (2016),[20] project documents were examined to see if different LD-drivers were discussed and considered.

61. Figure 17 charts how frequently LD drivers were prioritized and targeted in the projects' results frameworks. Figure 18 shows the different LD drivers discussed in the project documents.

62. Assessment shows that the LDFA is highly relevant to the proximate and natural causes of land degradation. The LDFA is relevant to most of the natural causes of land degradation

[19] Figures provided by the AfDB's GEF coordinator.

[20] Mirzabaev and others (2016), reviewed the relevant scientific literature to compile a comprehensive list of the proximate and underlying drivers of land degradation, - (a) included a strategy or framework for managing Mirzabaev's drivers of land degradation and (b) considered the different LD drivers in contextual discussions. For the first (a), inclusion of each LD driver in the project's proposed activities was checked. For the second (b), each document was reviewed in detail to see if the different LD-drivers were discussed and considered.

including climate change, land use change, and soil erodibility. The LDFA is also relevant to reducing some drivers such as poverty, weak LD policies, and unsustainable land management. But, the LDFA is largely absent from tackling other drivers of land degradation such as weak land tenure policy, population changes, low market access, and urbanization and infrastructure development.

Figure 17: Number of times LD-drivers or solutions to LD drivers are listed as major objectives in review of 25 project documents.

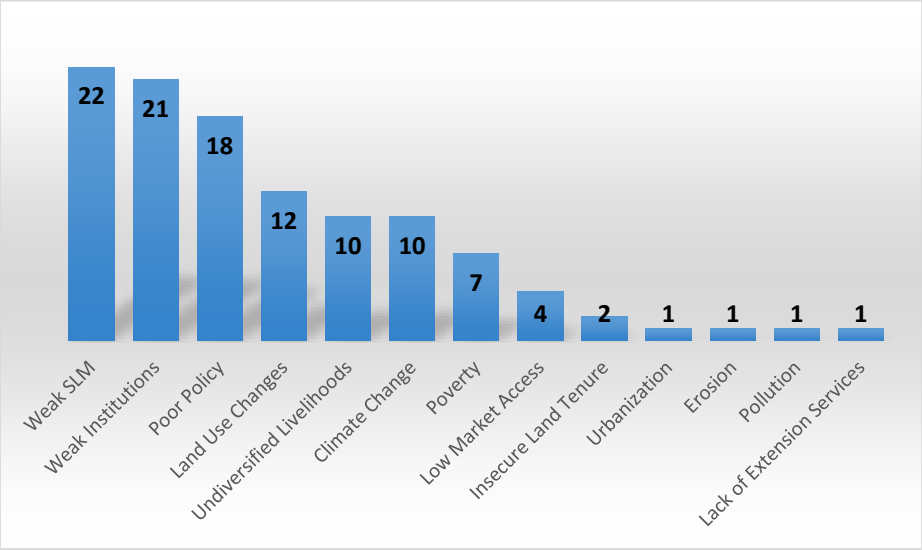
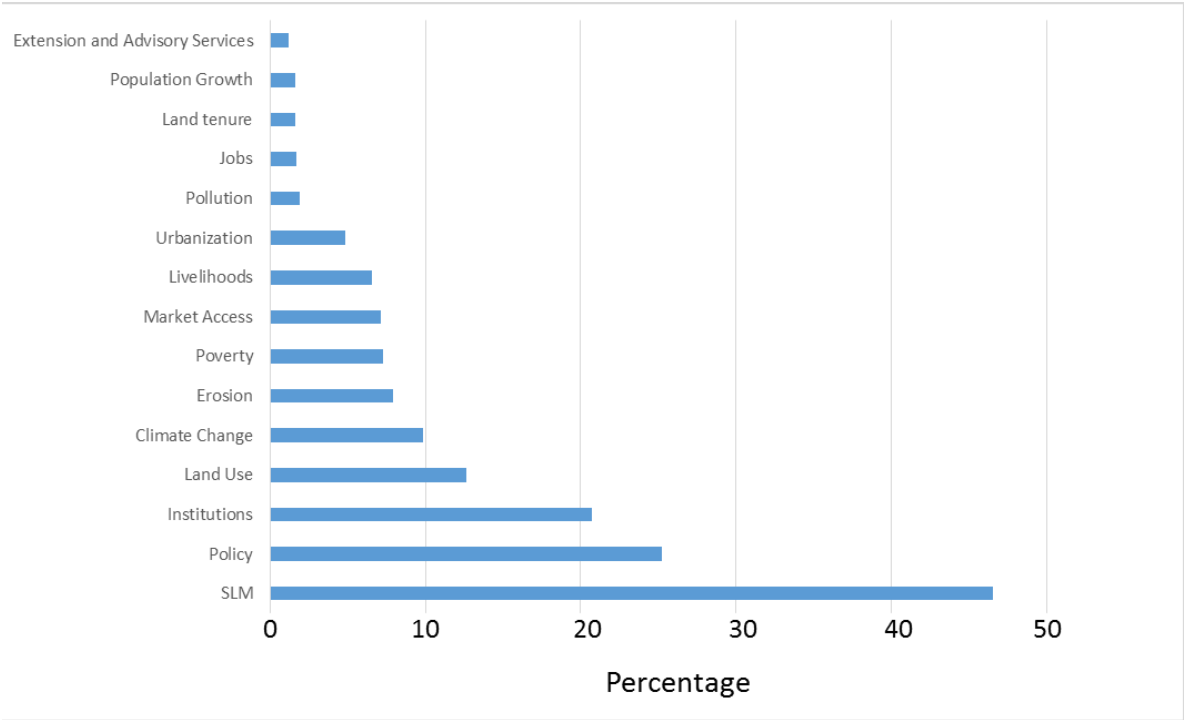


Figure 18: Frequency of LD drivers being discussed in relation to project challenges in 25 sample project documents.



Results

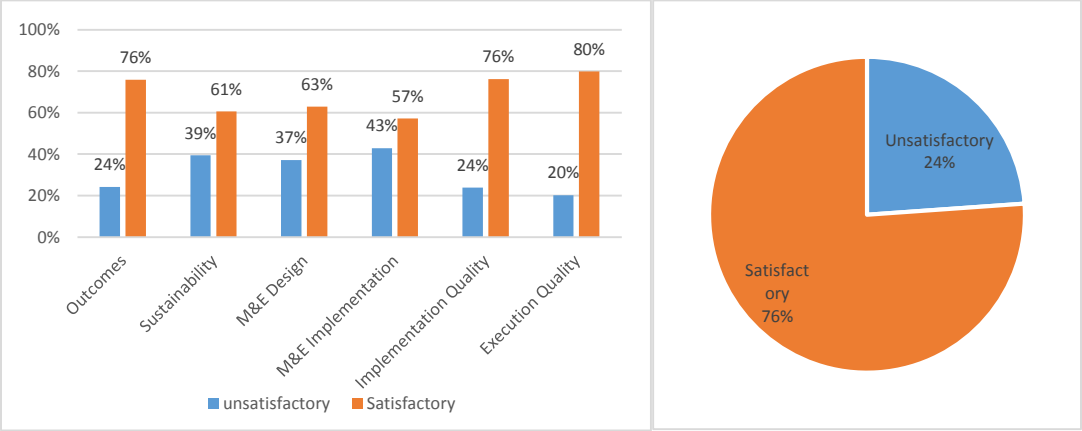
63. The IEO's 2016 Annual Performance Report (APR) database was used to review the performance trends of 116 completed LDFA projects. The APR database compiles the results ratings from all GEF projects with completed terminal evaluations (TEs). The dataset included ratings on outcomes, sustainability, and the quality of implementation, execution, and M&E design and implementation. The TER Dataset was of completed LDFA projects.

Performance

64. In all, 116 LD-related projects have completed TEs. This includes 70 full-sized projects and 46 medium-sized projects. Of these, 67 are LD stand-alone projects and 49 are multi-focal area projects with an LD component. All projects were initiated during GEF-3 or GEF-4with the exception of one GEF-5 completed project (GEF ID 4806). All projects are rated on a six-point scale.

65. Overall, 76 percent of LD-related projects and LD stand-alone projects had satisfactory outcomes ratings. This is slightly less than the GEF average for all projects from GEF-3 and GEF-4 and GEF-5, which has an 82 percent satisfactory rating.

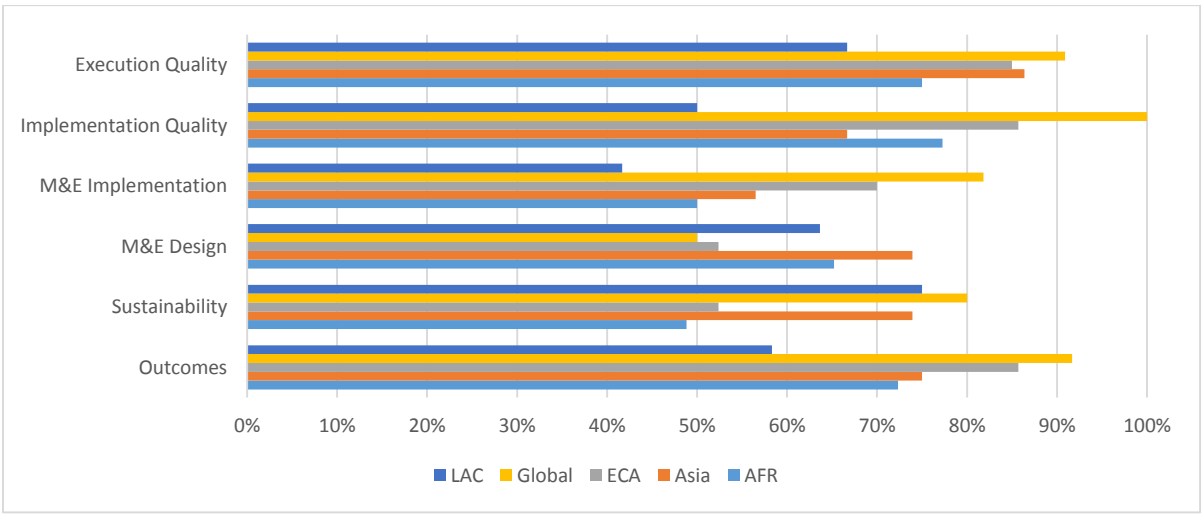
Figure 19: Number of projects with outcomes rated satisfactory or unsatisfactory (left) and the outcome ratings for LD stand-alone projects (right).



Regional Ratings

66. **Error! Reference source not found.** Figure 20 shows overall project rating by GEF region. Projects in LAC generally have the lowest ratings for outcomes, M&E implementation, and implementation and execution quality. Global projects tend to have the highest ratings for all five out of six indicators, the exception being M&E design where global projects receive the lowest ratings. The average execution quality and the average implementation quality are substantial-to-high in all regions, while the overall sustainability of projects is only low-to-modest. Among the sustainability ratings, LDFA projects generally have higher environmental (>80%), institutional, and political sustainability ratings (>75%) than financial sustainability ratings.

Figure 20: Regional ratings for LDFA projects (MS and above).



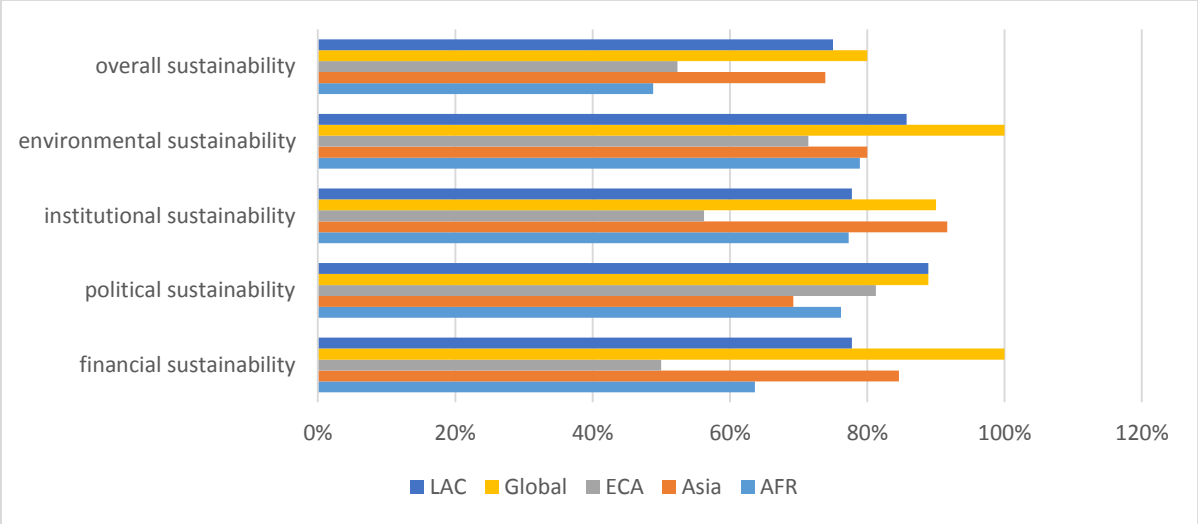
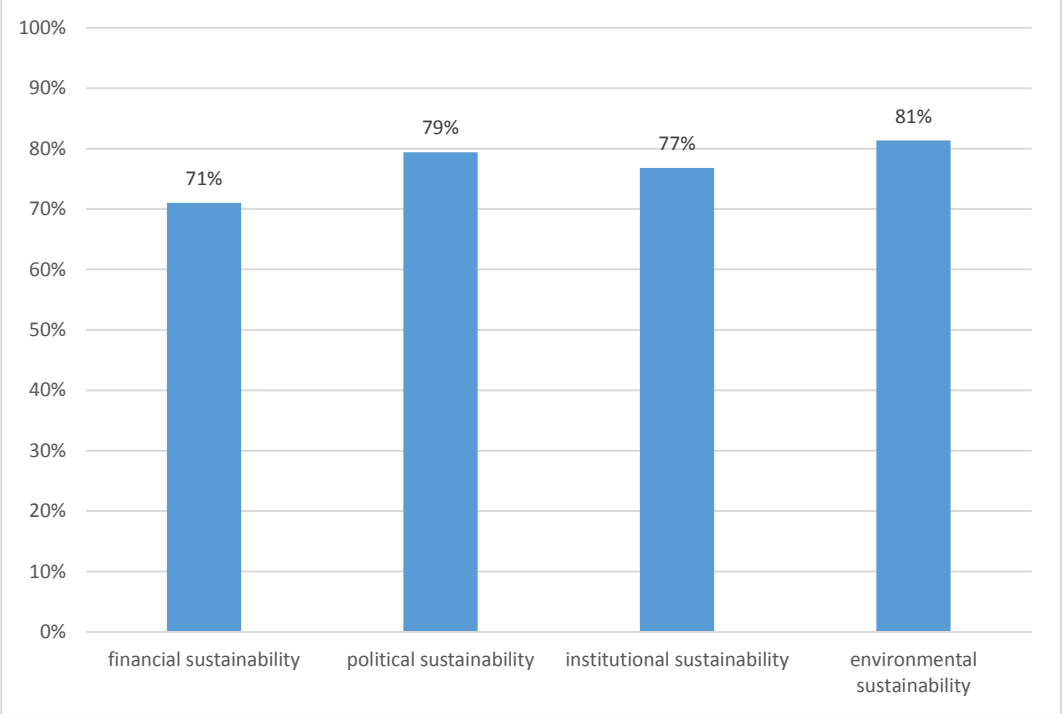


Figure 21: Percent projects with MS and above sustainability rating

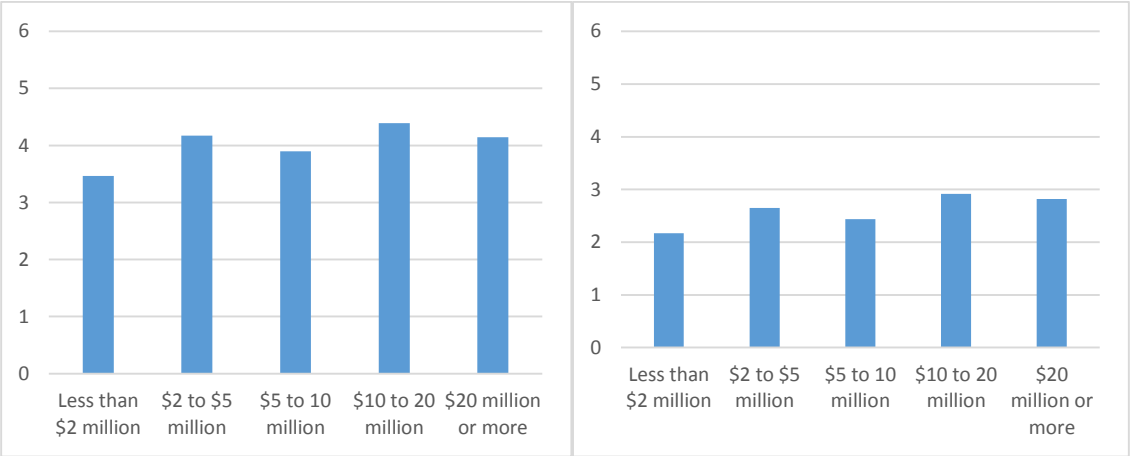


Performance ratings by financial investments

67. Figure 22 shows outcome and sustainability ratings by project investments. These totals include both GEF financing and co-financing to provide a complete picture of project funding. Outcomes and sustainability are positively correlated with increases in funding. The higher the level of investment the better the project outcomes and sustainability. The highest ratings are

for projects in the $10 million to $20 million cohort, with a slight decline in ratings for the largest projects, which average $47 million each in this sample.

Figure 22: Average outcome ratings (left) and average sustainability ratings by investment amount (right).



68. On average, LDFA projects take slightly less time (5.1 years) to complete than most GEF projects (5.7 years). Medium-sized projects require just under four years, while full-sized projects require just over five years. This shorter time-frame could possibly explain the lower outcome ratings for closed projects, since environmental benefits take much longer time to materialize in land degradation interventions.

69. LDFA projects have higher M&E design ratings than the GEF average, but the differences are small. Sixty-three percent of LDFA projects were rated "satisfactory" compared to 61 percent of non-LDFA projects.

Case Study: The Sustainable Land and Ecosystem Management Country Partnership Program (SLEM - CCP)

70. The Sustainable Land and Ecosystem Management Country Partnership Program (SLEM - CCP) in India was launched in 2009, with a budget of $327.8 million (GEF funding: $27.3 million; co-financing: $300.5 million). It was designed to pilot and demonstrate integrated approaches to the management of production systems and generation of global environmental benefits including adaptation to climate change. The SLEM-CCP contains six sub-projects mainly located in the dryland zone and vulnerable to degradation of land, water, and forest resources that are likely to be intensified by climate change. This case study analysis pertains to two completed sub-projects of the SLEM-CCP program: (a) Integrated Land Use Management to Combat Land Degradation in Madhya Pradesh. (b) Sustainable Land Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector.

71. The purpose of the SLEM - CCP is threefold: (1) reverse and control land degradation and biodiversity loss while taking climate change into account; (2) enhance institutional and local adaptive capacity to improve land and ecosystem resilience; and (3) mainstream and upscale SLEM at the local, national, and regional levels.

72. To assess progress towards impact, the Terminal Evaluation of the World Bank's "Institutional Coordination, Policy Outreach and M&E Project" was reviewed including site visits and interviews at two completed child projects of the SLEM-CCP program. This analysis pertains to these two child projects. Thirty project beneficiaries were also interviewed at nine different locations of the Uttarakhand project site.

Findings from the Madhya Pradesh SLEM Child Project

73. The *Integrated Land Use Management to Combat Land Degradation in Madhya Pradesh* was implemented in ten Forest Divisions (FDs) of five districts in Madhya Pradesh by the Madhya Pradesh Forest Department (MPFD) and UNDP in collaboration with local communities and Joint Forest Management Committees (JFMCs). It was implemented in an area of 15,000 ha of degraded bamboo forests in five districts in Madhya Pradesh. The main intervention in Land Degradation project in Madhya Pradesh involved allotting 20 ha of degraded areas for four years (5 ha/year) to each beneficiary family residing near degraded bamboo forests. Families received a monthly remuneration of approximately $40 for weeding, cleaning congested bamboo clumps, and soil work in order to rehabilitate the degraded bamboo forests. The money was directly deposited in their bank accounts. Supporting activities for sustainable land management included vermicomposting, weed removal, water management, and techniques such as the use of mesh for moisture retention. The project also provided occupational training and support for livelihood diversification activities for establishing vegetable gardens and making furniture from bamboo and lantana, an invasive species.

74. Eighty percent of the beneficiaries[21] responded to twelve questions related to the projects' effectiveness and the responses were automatically compiled. The key findings from the survey are:

(a) Nearly all interviewed beneficiaries (87 percent) noted that the projects contributed to improved land management to a major or moderate extent.

(b) Nearly all beneficiaries indicated that the projects included local participation, included their perspectives, and benefited youth, men, and women.

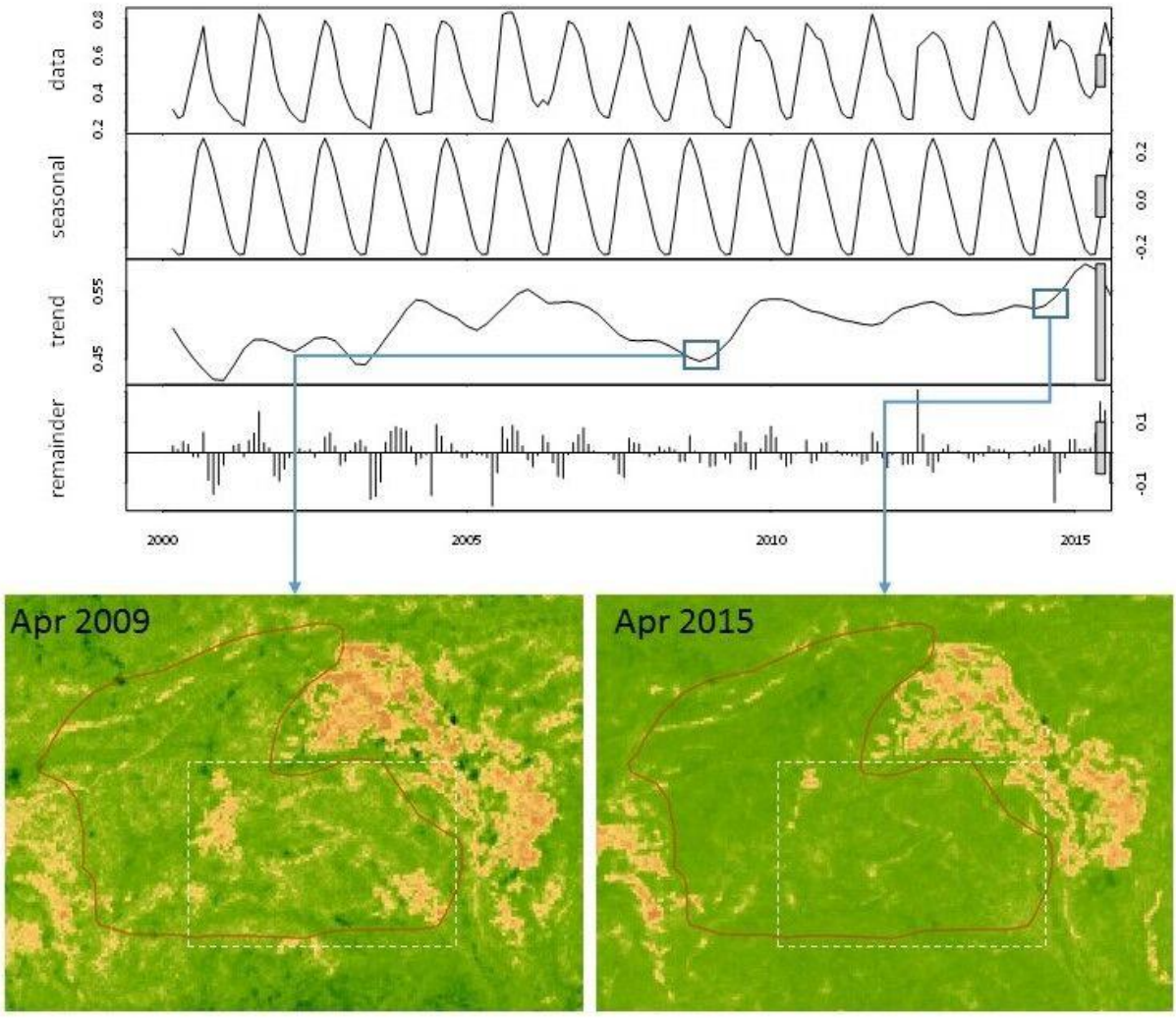
(c) All beneficiaries noted that the projects "allowed creating new jobs and livelihoods," and 75 percent responded that the projects had some impact.

(d) Nearly 70 percent of the practices taught through these projects were sustainable and being replicated locally.

75. Results of the geospatial analysis indicate that vegetation has been fluctuating, but has demonstrated an increasing trend after 2008 (Figure 23). Results indicate that the vegetation cover in the area improved over the project period. The average vegetation index (NDVI) in 2015 increased by about 10 percent compared to 2009 levels. The vegetation significantly improved inside the project area compared to areas outside the project boundary. Field visits and stakeholder perspectives corroborate that SLEM interventions improved land management and helped in the regeneration of bamboo forests in the area.

21 Household heads of sixteen beneficiary families were interviewed, covering 80% beneficiaries from four villages visited during the case study.

Figure 23: Time series plot shows increase in vegetation productivity since the subproject started in Madhya Pradesh (upper panel). The vegetation productivity maps before the start of the project and around the end of the project shows restored areas (lower panel)



Findings from the Uttarakhand Project

76. The *Sustainable Land Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector* was linked to a previous decentralized watershed management project[22] implemented in 75 micro-watersheds in the state. The GEF project targeted 20 micro-watersheds based on severity of erosion, extent of poverty, and lack of infrastructure facilities. Year-round availability of water is a problem in the project area, and soil erosion during the rainy season had threatened soil and water conservation. Forest fires is another environmental issue, caused by the highly inflammable material of dry pine needles and the leaf litter of the chir pine (*Pinus roxburghii*). The project focused on reducing land, water and forest degradation. Micro-watershed management activities included construction of

[22] Uttarakhand Decentralized Watershed Development Project (UDWDP) implemented in 75 micro watersheds from 2004 to March 2012.

gravity sprinklers and check dams; slopes were stabilized by planting Napier grass, a species which is also used to feed livestock. Supporting activities for sustainable forest management included the introduction of preventive practices to reduce the number of forest fire incidents.

77. The project involved Van Panchayats, a village level traditional community-based forest management body, unique to the state, to manage the local forests. The Van Panchayat was given rights to manage the government oak forest. Forest management practice involves setting aside saplings with potential for healthy growth, and the rest cut off and used as animal feed and fuel wood. This collaborative practice was institutionalized in the second phase of the project and stakeholders reported a healthy forest cover in the area as a result of the initiative. The project also supported agricultural intensification and livelihood diversification activities. Prior to project implementation, farmers in the area were growing potatoes and wheat but later included cash crops such as vegetables, fruits, flowers, and peas and considered them more profitable.

Impact

78. Field visits were conducted to gather evidence on impacts of the project through interviews with a variety of stakeholders. (1) Policy and institutional reforms implemented have been successful largely because the Indian government is fully engaged in the implementation of this program. (2) Social and environmental benefits have been vast and wide ranging. Some of the various types of interventions include minor tenure reforms, sustainable livelihood opportunities, sustainable resource management, and science driven interventions. (3) The projects have a strong decentralized and grassroots structure because of a high level of local participation. (4) So far, project activities seem sustainable because of successes in building local skills and creating alternative income generation opportunities. It is these productive enhancements that ensure sustainability and positive environmental outcomes. (5) Project beneficiaries less likely to migrate to urban areas due to increase in income generating opportunities and improved access to forest and water resources.

Challenges and Lessons

79. There were also some project specific challenges. In case of the land degradation project in Madhya Pradesh. (1) Most project landowners own small plots or have been provided small five hectare plots. These small land holdings make it difficult to consistently apply interventions across large areas. Each plot is controlled by individuals who decide if and how they will apply SLEM practices and for how long. Moreover, small plots do not generate high incomes, so farmers on these lands must seek alternative seasonal work elsewhere. (2) Most farmers engaged in traditional subsistence farming so transitioning these farmers toward production required a change in thinking. (3) There has been little to no involvement from civil society. The program is essentially a program between locals and the government. The lack of civil society participation could affect sustainability. (4) Continued efforts must be made to generate incomes and build local and institutional capacity. (5) At the time field visit (September 2016), prolonged dry spells with sporadic rise in temperature caused many restored bamboo forests to dry out.

80. The project in Uttarakhand had a unique issue – the introduction of expensive equipment, that is not cost effective and sustainable. Focus group participants mentioned that repair costs for the portable tiller is very costly and local skills were not developed to perform repairs. Thus, expensive equipment routinely sits idle and unusable. Project stakeholders at the Uttarakhand site also raised two main concerns regarding the suitability of some of the project activities in the context of variability in seasons and amount of rainfall:

a. That erratic rainfall patterns made it difficult to plan what to grow. Farmers reported previous instances of crop damage either due to delayed or excessive rains
b. Farmers noted that they lacked adequate knowledge and strategies to better face climate shocks – including droughts, pointing to the need for addressing risks.

Value for Money Analysis

81. A Value for Money (VFM) analysis was carried out by GEF IEO to better understand the effectiveness of LDFA investments. The VFM's aim was to (1) identify the causal impacts from LDFA projects along three land degradation indicators, endorsed by the UNCCD's 2015 land degradation neutrality (LDN) scientific framework. These include: forest cover change, forest fragmentation, and vegetation productivity. And, (2) determine the value for money from these LDFA projects.

82. LDFA investments had led to positive impacts on UNCCD targets, specifically reducing forest loss, reducing forest fragmentation, and increasing vegetation productivity. Vegetation productivity or density is measured by the Normalized Difference Vegetation Index (NDVI). Globally, within 25-kilometer catchment areas surrounding LDFA project locations, LDFA projects increased NDVI by approximately 0.03 percent (relative to an average NDVI of 0.55) (Figure 25). Moreover, LDFA projects reduced forest loss by 1.3 percent (relative to the 2.4 percent global mean forest loss) (Figure 24). LDFA projects also increased the average forest patch size by 0.25 kilometers (relative to a global mean of 7.3 square kilometers) (Figure 26).

83. Impacts vary across different geographic contexts. Projects in Africa and Asia had generally positive impacts on average. Projects in LAC, Oceania, and North and South America, all had positive impacts on all three indicators. In all regions of the world, LDFA projects reduced the rate of forest loss as measured in 2014 (Figure 24). Eastern Europe is the only outlier. Likewise, all regions except Europe and Eastern Europe saw improved vegetation productivity (Figure 25). Fragmentation was the most differentiated across regions.

84. Africa had the most fragmentation in areas of LDFA projects, while LAC, North America, and South America had the largest mean patch sizes.

Figure 24: Reducing the rate of forest loss

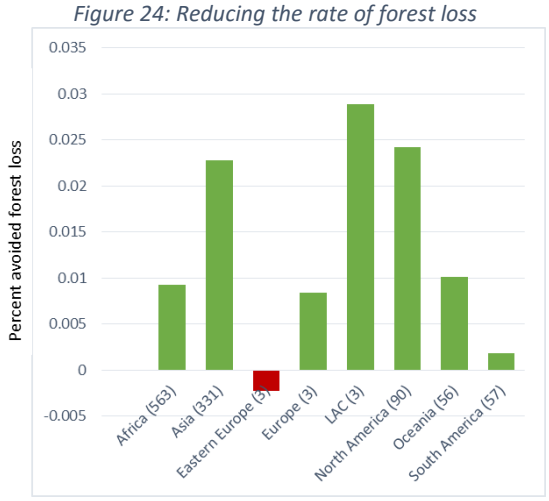


Figure 25: Vegetation productivity (NDVI)

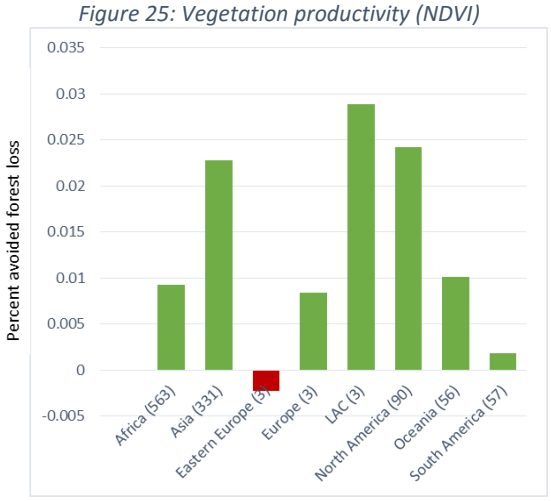
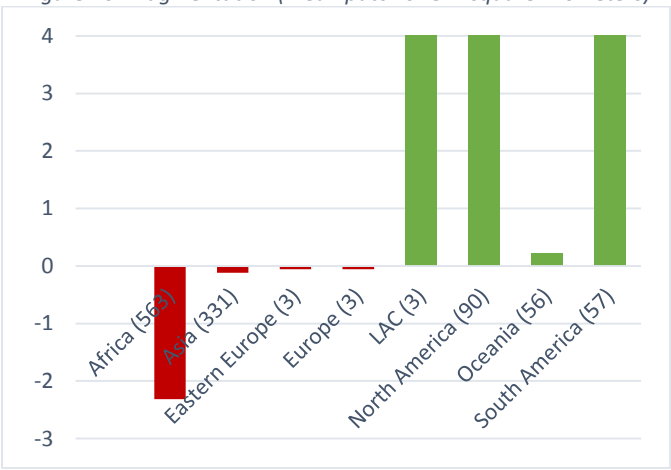


Figure 26: Fragmentation (mean patch size in square kilometers)



85. Improvements in vegetation cover from LDFA projects have led to higher levels of carbon sequestration. The estimated carbon sequestered was 43.52 tons of carbon (tC) per hectare, on average. This equates to about 108,800 tC sequestered in each LDFA project location. The VFM analysis further estimates that, at a valuation of $12.90 per ton, individual LDFA projects contributed $7.5 million on average to sequestration, which is well above the average cost of most LDFA projects.

86. The analysis identified a range of values consistent with previous analyses of the value of land degradation projects. Because considerable uncertainty exists, the range of potential benefits from a single–focal area land degradation project is estimated at $52–$143/ha affected in terms of carbon sequestration alone; soil retention promotes an additional value of$10–$43/ha, for a total valuation of $62–$186/ha across all land degradation projects. After costs are accounted for, it is estimated that the per dollar return on investment for land degradation projects is approximately $1.08 per dollar invested. This is likely to be an underestimate, since it only captures two ecosystem services.

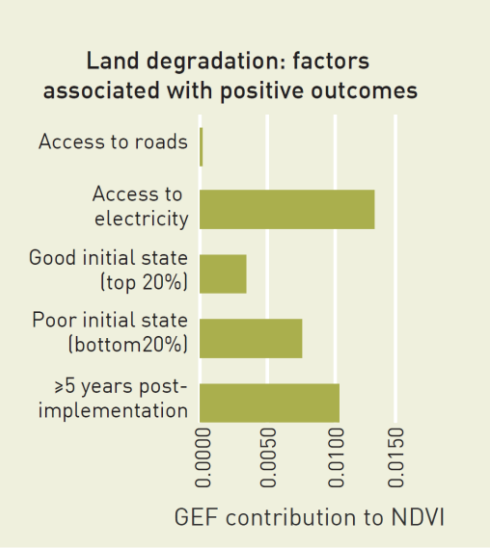
87. The VFM analysis reveals three pertinent findings on project effectiveness. The findings include the following (Figure 27):

(a) A lag time of 4.5–5.5 years was an important inflection point at which impacts were observed to be larger in magnitude.

(b) Projects with access to the electricity tend to have some of the largest relative positive impacts. This may be due to better infrastructure, and access to energy sources for irrigation.

(c) The initial state of the environment is a key driver in GEF impacts, with GEF projects tending to have a larger impact in areas with poorer initial conditions.

Figure 27: Key factors driving positive impacts of GEF Land Degradation projects.



88. Geospatial Impact analysis show that there is some evidence that MFA projects in areas with particularly poor conditions (high slope, poor initial conditions, and little rainfall), tended to outperform SFA projects. However, MFA projects tended to underperform SFA projects in the horn of Africa.

89. Geospatial Impact analysis highlighted a lack of information on exact geographic boundaries of the LDFA project interventions. The 202 projects analysed were mapped to 1,704 project locations of which 446 (26%) had exact geographic information available - i.e., the latitude and longitude at which the project was executed is known with a high degree of precision. Precise geographic information is a prerequisite for monitoring and tracking progress through geospatial analysis.

Recommendations

(a) **Implementing LDN with an appropriate mix of interventions.** While being cognizant of cost-effectiveness, context, and country priorities, LDFA should also consider restoration activities along with SLM. SLM practices are intended to help avoid and reduce land degradation while ecosystem restoration will help reverse the process. Newer projects in GEF-6 increasingly focus on achieving LDN targets and therefore

would benefit from distinguishing between the two complementary pathways—SLM, and ecosystem restoration, to be able to measure progress toward the LDN targets.

(b) **Give due consideration to complex contextual factors within an integrated approach framework.** While LDFA's strategic focus has appropriately moved toward integrated approaches, complex contextual factors including drought, food insecurity and migration should be given due consideration during project design. The LDFA is highly relevant to areas with land degradation, including Africa, particularly with its distressed emigration hotspots. While neither land degradation nor drought are the primary drivers, they increase food insecurity and vulnerability and therefore may exacerbate the risk of conflict or migration

(c) **Assess climate risks to LDFA initiatives and design adaptive management responses to such risks.** Unsustainable land management practices which the GEF LDFA strategies aim to ameliorate, have a direct and clear linkage to climate change. The effects of climate change are likely to affect many land-based activities including ecosystem functions and services. Broader application of the RAPTA framework is encouraged.

(d) **Strengthen M&E tools, and methods of knowledge dissemination.** The development and continued improvement of the tracking tool is a step in the right direction but will be inadequate to assess project impacts in the long run. The tracking tools should include additional biophysical indicators, increasingly available through geospatial data, to set baselines and measure progress of land productivity to track both GEB's and LDN targets. Precise geospatial information on project locations is imperative for carrying out accurate M&E of LD projects. The LDFA should consider integrating the indicators proposed by the UNCCD's Land Degradation Neutrality (LDN) framework. The benefits and impacts of sustained SLM practices and restoration measures are not fully accounted for in the current M&E system. Recognition therefore should be given to the fact that it might be necessary to set a sufficiently longer time frame in monitoring projects striving to achieve LDN.

I. III. REFERENCES

Bai, Z., Dent, D., Olsson, L., & Schaepman, M. (2008). "Proxy global assessment of land degradation," *Soil Use and Management*, 24(3), 223–234.

Barbut, Monique (2016). *Land degradation neutrality heralds a new dawn for GEF and the World*, UNCCD Secretariat, July.

Barrow, C. (1991). *Land degradation: Development and breakdown of terrestrial environments. Cambridge*, UK: Cambridge University Press.

Benin, S., Nkonya, E., Okecho, G., Pender, J., Nahdy, S., Mugarura, S., et al. (2007). "Assessing the Impact of the National Agricultural Advisory Services (NAADS) in the Uganda rural livelihoods," IFPRI Discussion Paper 00724, International Food Policy Research Institute, Washington, DC.

Berry, Leonard; Olson, Jennifer (2001). *GEF Land Degradation Linkage Study*, Global Environment Facility (GEF) working paper; no. 6, Washington DC, available at: http://documents.worldbank.org/curated/en/936641468135585674/GEF-Land-Degradation-Linkage-Study

Besley, T. (1995). "Property rights and investment incentives: Theory and evidence from Ghana," *The Journal of Political Economy*, 103(5), 903–937.

Bonilla, C. A., & Johnson, O. I. (2012). "Soil erodibility mapping and its correlation with soil properties in Central Chile," *Geoderma*, 189, 116–123.

Boserup, E. (1965). *The conditions of agricultural growth: The economics of agrarian change under population pressure*, Aldine Press, New York.

Brasselle, F., Brasselle, A., Gaspart, F., & Platteau, J. P. (2002). "Land tenure security and investment incentives: Puzzling evidence from Burkina Faso," *Journal of Development Economics,* 67, 373–418.

Clay, D. C., Byiringiro, F. U., Kangasniemi, J., Reardon, T., Sibomana, B., Uwamariya, L., & Tardif-Douglin, D. (1996). "Promoting food security in Rwanda through sustainable agricultural productivity: Meeting the challenges of population pressure, land degradation, and poverty," Food Security International Development Policy Syntheses 11425, East Lansing: Michigan State University, Department of Agricultural, Food, and Resource Economics.

Cleaver, K. M., & Schreiber, G. A. (1994). *Reversing the spiral: The population, agriculture, and environment nexus in Sub-Saharan Africa*, The World Bank, Washington DC.

De Janvry, A., Fafchamps, M., & Sadoulet, E. (1991). "Peasant household behavior with missing markets: Some paradoxes explained," *The Economic Journal*, 101, 1400–1417.

FAO (2011). *State of the World's Forests*, Food and Agriculture Organization, Rome, Italy.

Gao, J., & Liu, Y. (2010). "Determination of land degradation causes in Tongyu County, Northeast China via land cover change detection," *International Journal of Applied Earth Observation and Geoinformation*, 12, 9–16.

GEF (2003). *Operational Program on Sustainable Land Management (OP#15)*, Global Environment Facility, Washington DC, December.

GEF (2006). "The Role of Local Benefits in Global Environmental Programs," Evaluation Report No. 30, Global Environment Facility, June.

GEF (2012). *Evaluation of GEF Focal Area Strategy*, GEF Council Meeting, Global Environment Facility, Washington DC, November 13 – 15.

GEF (2015). *Investing in Land Stewardship*, Report of the GEF to COP 12 to the UNCCD, Global Environment Facility, July.

GEF (2015). *GEF Annual Performance Report 2015*, 50th GEF Council Meeting, Global Environment Facility, Washington DC, May.

GEF (2015). *Sustainable Land Management Financing in the GEF: A primer for the replenishment phase (GEF-6)*, Global Environment Facility, January.

GEF (2015). *Transforming Land Management Globally: Q&A about land in the 6th GEF replenishment phase (GEF-6)*, Global Environment Facility.

GEF (2016a). *GEF Corporate Scorecard*, Global Environment Facility, Washington DC, April.

GEF (2016b). *25 Years of the GEF*, Global Environment Facility, October.

Geist, H. J., & Lambin, E. F. (2004). "Dynamical causal patterns of desertification," *BioScience*, 54 (9), 817–829.

Grepperud, S. (1996). "Population Pressure and Land Degradation: The Case of Ethiopia," *Journal of Environmental Economics and Management* 30 (1): 18–33.

Kabubo-Mariara, J. (2007). "Land conservation and tenure security in Kenya: Boserup's hypothesis revisited," Ecological Economics, 64, 25–35.

Lu, D., Batistella, M., Mausel, P., & Moran, E. (2007). "Mapping and monitoring land degradation risks in the Western Brazilian Amazon using multitemporal landsat TM/ETM+ images," *Land Degradation and Development*, 18, 41–54.

Mirzabaev, A., Nkonya, E., Goedecke, J., Johnson, T., & Anderson, W. (2016). "Global Drivers of Land Degradation and Improvement," in *Economics of Land Degradation and Improvement–A Global Assessment for Sustainable Development* (pp. 167-195), Springer International Publishing.

Nkonya, E., Gerber, N., Baumgartner, P., von Braun, J., De Pinto, A., Graw, V., et al. (2011). "The economics of desertification, land degradation, and drought—toward an integrated global assessment," ZEF-Discussion Papers on Development Policy No. 150, Center for Development Research (ZEF), Bonn, Germany.

Nkonya, E., Pender, J., Kaizzi, K., Kato, E., Mugarura, S., Ssali, H., & Muwonge, J. (2008). “Linkages between land management, land degradation, and poverty in Sub-Saharan Africa: The case of Uganda,” IFPRI Research Report 159, Washington D.C., USA.

Nkonya, E., Phillip, D., Mogues, T., Pender, J., & Kato, E. (2010). *From the ground up: Impacts of a pro-poor community-driven development project in Nigeria*, Washington, DC, USA: IFPRI Research Monograph.

Nkonya, Ephraim (2015). *Economics of Land Degradation and Improvement: A Global Assessment for Sustainable Development*, Eds. Alisher Mirzabaev, and Joachim Von Braun, Dordrecht: Springer.

Paudel, G. S., & Thapa, G. B. (2004). “Impact of social, institutional, and ecological factors on land management practices in mountain watersheds of Nepal,” *Applied Geography*, 24(1), 35–55.

Pender, J., & Kerr, J. (1998). “Determinants of farmers’ indigenous soil and water conservation investments in semiarid India,” *Agricultural Economics*, 19, 113–125.

Pender, J., Nkonya, E., Jagger, P., Sserunkuuma, D., & Ssali, H. (2006). “Strategies to increase agricultural productivity and reduce land degradation in Uganda: An econometric analysis,” in J. Pender & S. Ehui (Eds.), *Strategies for sustainable land management in the East African highlands* (pp. 165–190). Washington, DC, USA: International Food Policy Research Institute.

Possingham, Hugh P., Michael Bode, and Carissa J. Klein (2015). "Optimal conservation outcomes require both restoration and protection." *Plos Biol* 13.1: e1002052.

Safriel, U. N., & Adeel, Z. (2005). “Dryland systems,” in R. Hassan, R. Scholes, & N. Ash (Eds.), Ecosystems and human well-being: Current state and trends (Vol. 1, pp. 623–662), Washington, DC: Island Press.

Safriel, U. (2017) "Land Degradation Neutrality (LDN) in drylands and beyond–where has it come from and where does it go." *SILVA FENNICA* 51, no. 1 B.

Sanwal, M. (2004). “Trends in global environmental governance: The emergence of a mutual supportiveness approach to achieve sustainable development.” *Global Environmental Politics*, 4 (4), 16–22.

Scherr, S. (2000). “Downward spiral? Research evidence on the relationship between poverty and natural resource degradation,” *Food Policy*, 25(4), 479–498.

Scherr, S., & Hazell, P. (1994). “Sustainable agricultural development strategies in fragile lands,” Environment and Production Technology Division Discussion Paper, no. 1, International Food Policy Research Institute, Washington, DC, USA.

Sternberg, T. (2008). Environmental challenges in Mongolia’s dryland pastoral landscape, *Journal of Arid Environments*, 72, 1294–1304.

Svenson, L. (2005). "Socio-economic Indicators for Causes and Consequences of Land Degradation," *LADA Technical Paper FAO*: 2-3.

Tiffen, M., Mortimore, M., & Gichuki, F. (1994). *More people, less erosion: Environmental recovery in Kenya*, London, UK: Wiley and Sons.

UNEP (2016). *UNEP Annual Report*, United Nations Environment Programme, available at: http://www.unep.org/annualreport/2015/en/sustainable-development-goals.html#sthash.WjstAZ5R.dpuf

Voortman, R. L., Sonneveld, B. G., & Keyzer, M. A. (2000). "African land ecology: Opportunities and constraints for agricultural development," Center for International Development Working Paper 37. Harvard University, Cambridge, Mass., U.S.A.

Way, S. A. (2006). "Examining the links between poverty and land degradation: From blaming the poor toward recognizing the rights of the poor," in P. Johnson, K. Mayrand, & M. Paquin (Eds.), *Governing global desertification: Linking environmental degradation, poverty, and participation* (pp. 27–41), Burlington, VT: Ashgate.

Wischmeier, W.H. (1976). "Use and Misuse of the universal soil loss equation," Journal of Soil and Water Conservation, 13 (1): 5–9.

II. IV. ANNEXES

Annex 1: Projects Reviewed

Table 3: LDFA projects that were reviewed in depth or reviewed for specific data.

Project	Specific Data	In-Depth Review
1. **SLEM/CPP - Sustainable Land and Ecosystem Management Partnership PROGRAM SLEM/CPP: Institutional Coordination, Policy Outreach and M & E Project under Sustainable Land and Ecosystem Management Partnership Program**		x
2. **SLEM/CPP: Sustainable Land Management in Shifting Cultivation Areas of Nagaland for Ecological and Livelihood Security**		x
3. **SLEM/CPP: Sustainable Rural Livelihood Security through Innovations in Land and Ecosystem Management**	x	
4. **SLEM/CPP: Sustainable Land Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand Watershed Sector**	x	
5. **SLEM/CPP: Integrated Land Use Management to Combat Land Degradation in Madja Pradesh**	x	
6. **SIP: Sustainable Land Management in Senegal**		x
7. **LDC/SIDS Portfolio Project: Capacity Building for Sustainable Land Management in Republic Central Africa**		x
8. **Sustainable Land Management for Combating Desertification (Phase I)**		x
9. **Building Sustainable Capacity and Ownership to Implement UNCCD Objectives in Latvia**		x
10. **CPP Namibia: Enhancing Institutional and Human Resource Capacity Through Local Level Coordination of Integrated Rangeland Management and Support (CALLC)**		x
11. **CPP Namibia: Sustainable Land Management Support and Adaptive Management Project (NAM SLM SAM)**	x	
12. **Sustainable Land Management for Mitigating Land Degradation, Enhancing Agricultural Biodiversity and Reducing Poverty (SLaM)**		x
13. **SIP: Stabilizing Rural Populations through Improved Systems for SLM and Local Governance of Lands in Southern Madagascar**		x
14. **Sustainable Environmental Management for Sixaola River Basin**		x
15. **Sustainable Land Management in Drought Prone Areas of Nicaragua**		x
16. **Development and Implementation of a Sustainable Resource Management Plan for Marsabit Mountain and its associated Watersheds**		x
17. **Sustainable Land Management in the Semi-Arid Sertao**		x
18. **PRC-GEF Partnership: Capacity and Management Support for Combating Land Degradation in Dryland Ecosystems**		x
19. **Environmental Land Management and Rural Livelihoods**		x
20. **Sustainable Land Management and Climate-Friendly Agriculture**		x
21. **Agriculture Competitiveness**		x
22. **Sustainable Land Management Programme to Combat Desertification**	x	
23. **PSG: Sustainable Land Management Project 2**		x
24. **Applying Landscape and Sustainable Land Management (L-SLM) for Mitigating Land Degradation and Contributing to Poverty Reduction in Rural Areas**		x
25. **Sustainable Land Management for Increased Productivity in Armenia(SLMIP)**		x
26. **Cities-IAP: Sustainable Cities Management Initiative**		x
27. **Food-IAP: Climate-Smart Agriculture for Climate-Resilient Livelihoods (CSARL)**		x

Project	Specific Data	In-Depth Review
28. **Food-IAP: Establishment of the Upper Tana Nairobi Water Fund (UTNWF)**		x
29. **GEF-IAP:Participatory Natural Resource Management and Rural Development Project in the North, Centre-North and East Regions (Neer Tamba project)**	x	
30. **Land Degradation Neutrality Target Setting Project**		x
31. **Land degradation neutrality of mountain landscapes in Lebanon**	x	
32. **Food-IAP: Sustainable Land and Water Management Project, Second Additional Financing**		x
33. **Landscape Approach to Forest Restoration and Conservation (LAFREC)**	x	
34. **Restoration of arid and semi-arid lands (ASAL) of Kenya through bio-enterprise development and other incentives under The Restoration Initiative**	x	
35. **Forest Landscape Restoration in the Mayaga Region**	x	
36. **Integrated Management of Oasis Ecosystems of Northern Niger (IMOE -NN)**	x	
37. **Participatory Coastal Zone Restoration and Sustainable Management in the Eastern Province of Post-Tsunami Sri Lanka**	x	
38. **PRC-GEF Partnership: Forestry and Ecological Restoration in Three Northwest Provinces (formerly Silk Road Ecosystem Restoration Project)**	x	
39. **Building the Foundation for Forest Landscape Restoration at Scale**	x	
40. **TRI The Restoration Initiative - Fostering Innovation and Integration in Support of the Bonn Challenge**	x	
41. **Promoting Sustainable Land Management (SLM) through Integrated Restoration of Ecosystems**	x	
42. **Ecosystem Restoration of Riparian Forests in Sao Paulo**	x	
43. **Climate-smart Livestock Production and Land Restoration in the Uruguayan Rangelands**	x	
44. **Risk Mitigation Instrument for Land Restoration (Non-Grant)**	x	
45. **Integrated Ecosystem Management and Restoration of Forests on the South East Coast of St. Lucia**	x	
46. **Promotion of Climate-smart Livestock Management Integrating Reversion of Land Degradation and Reduction of Desertification Risks in Vulnerable Provinces**	x	
47. **Integrated Development for Increased Rural Climate Resilience in the Niger Basin**	x	
48. **Integrated Landscape Management for Improved Livelihoods and Ecosystem Resilience in Mount Elgon**	x	
49. **Building Resilience for Food Security and Nutrition in Chad's Rural Communities**	x	
50. **Scaling up a Multiple Benefits Approach to Enhance Resilience in Agro- and Forest Landscapes of Mali's Sahel Regions (Kayes, Koulikoro and Ségou)**	x	
51. **Food-IAP: Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa - An Integrated Approach (IAP-PROGRAM)**	x	
52. **Integrating Biodiversity Conservation, Climate Resilience and Sustainable Forest Management in Trung Truong Son Landscapes**	x	
53. **R2R- Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods**	x	
54. **Implementing a "Ridge to Reef" Approach to Preserve Ecosystem Services, Sequester Carbon, Improve Climate Resilience and Sustain Livelihoods in Fiji (Fiji R2R)**	x	
55. **Ensuring Sustainability and Resilience (ENSURE) of Green Landscapes in Mongolia**	x	
56. **Mekong Delta Integrated Climate Resilience and Sustainable Livelihoods Project**	x	

Project	Specific Data	In-Depth Review
57. **Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience**	x	
58. **Strengthening the Resilience of Multiple-use Protected Areas to Deliver Multiple Global Environmental Benefits**	x	
59. **Enhancing the Resilience of Pastoral Ecosystems and Livelihoods of Nomadic Herders**	x	
60. **GGW: Building Resilience Through Innovation, Communication and Knowledge Services (BRICKS) Project**	x	

Annex 2: Stakeholder Interviewed

Table 4: List of key informant interviews.

Name	Position	Affiliation
Alan Fox	Evaluation Advisor	UNDP IEO
Amitabh Pandey	Professor	IIFM
Anand Rao	Beneficiary	SHG
Arun. Kumar Mehta	Joint Secretary	Govt of India
Ashok	Beneficiary	SHG
Baldev	Beneficiary	SHG
Brajpal	Beneficiary	SHG
Camilla Nordheim-Larsen	Coordinator, Land Governance Programme	UNCCD Global Mechanism
Carlo Carugi	Senior Evaluation Officer	GEF IEO
Charles Nyandiga	Programme Advisor	UNDP SGP
Chitranjan Tyagi	CCF	Govt of India
Dharmendra Meena	DFO	Govt of India
Fareeha Iqbal	Asia Adaptation Program	GEF
Fulakram	Beneficiary	SHG
Gayatri Kanungo	AFR GEF Coordinator	World Bank
Hema Negi	Beneficiary	SHG
Ivan Cossios	Project Manager	IFAD Brazil
Jaco Cilliers	Country director	UNDP
Jean-Marc Sinnassamy	Environmental Specialist	GEF
Jessie Mee	Knowledge Specialist	UNDP
Kaliram Kudohpa	Beneficiary	SHG
Lianchawii Chhakchhuak	Programme Analyst	UNDP
Mahamat Assouyouti	GEF Coordination	AfDB
Mahendra Yaduvendu	Project Director	Govt of India
Mannu	Beneficiary	SHG
Marina Walter	Deputy director	UNDP
Maryam Niamir-Fuller	Advisor on Sustainability	Independent
Melchiadre Bukuru	Chief of the Liaison Office	UNCCD Secretariat
Midori Paxton	Regional Technical Adviser	UNDP
Mohamed Bakarr	Lead Environmental Specialist	GEF
Muhammad Khalid Saddiq	Project Manager	UNDP Pakistan
Nancy Bennett	GEF Coordinator	UNDP
Nandhini Krishna	Liaison Officer	UNCCD Secretariat
Nayanika Singh	GEF Consultant	GEF
Neena Grewal	Director	Govt of India
Pankaj Tiwari	Executive Director	CHEA, NGO

Name	Position	Affiliation
Paola Agostini	Global Lead for Landscape	World Bank
Preeti Soni	Asst. country director	UNDP
Premlal Anke	Beneficiary	SHG
Rajesh	Beneficiary	SHG
Rajni Ranjan Rashmi	Special Secretary	Govt of India
Rakesh	Beneficiary	SHG
Ranjan Samantaray	Senior Agriculture Specialist	World Bank
Ravindra Mani Tripathi	DFO	Govt of India
Rekha Singhal	Professor	IIFM
S. K.Upadhyay	Dy Director	Govt of India
Sardas Salame	Beneficiary	SHG
Sarojni Melkani	Van Sarpanch	SHG
Satish Dhurbey	Beneficiary	SHG
Siyalal	Beneficiary	SHG
Siyaram	Beneficiary	SHG
Sobharam Koureti	Beneficiary	SHG
Somit Burman	Project Manager	UNDP
Tehmina Akhtar	Deputy Global Manager	UNDP SGP
Ulrich Apel	LDFA Coordinator	GEF
Yashwant Parthe	Beneficiary	SHG
Name	Role	Organization
Alan Fox	Evaluation Advisor	UNDP IEO
Camilla Nordheim-Larsen	Coordinator, Land Governance Programme	UNCCD Global Mechanism
Carlo Carugi	Senior Evaluation Officer	GEF IEO
Charles Nyandiga	Programme Advisor	UNDP SGP
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Annex 3: Relevance to LD Drivers

Table 5: Relevance to LD Drivers

Major LD Driver	Example	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Topography	Steep slopes are vulnerable to severe water-induced soil erosion	X	X	X	X	X	X	X	X	X		
Land cover change	Conversion of rangelands to irrigated farming with resulting soil salinity. Deforestation	X	X	X	X	X	X	X	X	X	X	X
Climate	Dry, hot areas are prone to naturally occurring wildfires, which, in turn, lead to soil erosion. Strong rainstorms lead to flooding and erosion. Low and infrequent rainfall and erratic and erosive rainfall (monsoon areas) lead to erosion and salinization	X	X	X	X	X	X	X	X	X	X	X
Soil erodibility	Some soils, for example those with high silt content, could be naturally more prone to erosion	X	X	X	X	X	X	X	X	X	X	X
Pest and diseases	Pests and diseases lead to loss of biodiversity, loss of crop and livestock productivity, and other forms of land degradation											
Unsustainable land management	Land clearing, overgrazing, cultivation on steep slopes, bush burning, pollution of land and water sources, and soil nutrient mining are among the major causes of land degradation	X	X	X	X	X	X	X	X	X	X	X
Infrastructure development	Transport and earthmoving techniques, such as trucks and tractors, as well as new processing and storage technologies, could lead to increased production and foster land degradation if not properly planned											
Population density	Population density leads to land degradation											
Market access	High market access raises opportunity cost of labor, making households less likely to adopt labor-intensive sustainable land management practices							X	X	X		
Land tenure	Insecure land tenure can lead to the adoption of unsustainable land management practices											
Poverty	There is a vicious cycle between poverty and land degradation. Poverty could lead to land degradation while land degradation could lead to poverty	X	X	X	X	X	X	X	X	X	X	X
Access to agricultural extension services	Depending on the capacity and orientation of the extension providers, access to extension services could lead to land-degrading practices							X	X	X		

Major LD Driver	Example	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Decentralization	Strong local institutions with a capacity for land management are likely to enact bylaws and other regulations that could enhance sustainable land management practices							X	X	X		
International policies	International policies through the United Nations and other organizations have influenced policy formulation and land management											
Non-farm employment	Alternative livelihoods allow farmers to rest their lands or to use non-farm income to invest in land improvement											
Livestock management*	Unsustainable livestock practices lead to land degradation											
Resilience*	Resilience an integrated approach effectively reduces LD at multiple levels	X	X	X	X	X	X	X	X	X	X	X
Restoration*	Restoration is a more cost-effective practice for reducing LD				X	X	X					
*** Not related to Mirzabaev, et al. 2016.**												

Annex 4: Relevance to the SGDs

Table 6: Relevance to the SDGs

Sustainable Development Goals (SDGs)	Expected Impacts	LD Focal Area Objectives									
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Goal 1: No poverty	End poverty in all its forms everywhere	X	X	X	X	X	X					
Goal 2: Zero hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	X	X	X				X	X	X	X	X
Goal 3: Good health and well being	Ensure healthy lives and promote well-being for all at all ages											
Goal 4: Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all											
Goal 5: Gender equality	Achieve gender equality and empower all women and girls								X			
Goal 6: Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all	X	X	X	X	X	X	X	X	X	X	X
Goal 7: Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all											
Goal 8: Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	X	X	X	X	X	X					
Goal 9: Industry, innovation, and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation											
Goal 10: Reduced inequalities	Reduce inequality within and among countries	X	X	X	X	X	X	X	X	X		
Goal 11: Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient and sustainable											
Goal 12: Responsible consumption and production	Ensure sustainable consumption and production patterns											
Goal 13: Climate action	Take urgent action to combat climate change and its impacts	X	X	X	X	X	X	X	X	X	X	X
Goal 14: Life below water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development											
Goal 15: Life on land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	X	X	X	X	X	X	X	X	X	X	X
Goal 16: Peace, justice, and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for											

Sustainable Development Goals (SDGs)	Expected Impacts	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
	all and build effective, accountable and inclusive institutions at all levels											
Goal 17: Partnerships for the goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development											

Table 7: Relevance to SDG 15 on Land

SDG 15	Expected Impacts	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Goal 15: Life on land	15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	X	X	X	X	X	X	X	X	X	X	X
	15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally				X	X	X					
	15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	X	X	X	X	X	X	X	X	X	X	X
	15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development							X	X	X		
	15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species				X	X	X					
	15.6: Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed											
	15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products											
	15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species											

SDG 15	Expected Impacts	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
	15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts							X	X	X	X	X
	15.a: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems											
	15.b: Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation				X	X	X					
	15.c: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities											

Annex 5: Relevance to FAO

Table 8: Relevance to FAO

FAO SDGs	Expected Impacts	LD Focal Area Objectives									
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
SDG2: Zero hunger	The sustainability of agricultural production	X	X	X				X	X	X		
	The biodiversity of plants and animals											
	Food insecurity	X	X	X				X	X	X		
	Investment in agriculture	X	X	X							X	X
	The income and productivity of small-scale food producers	X	X	X				X	X	X		
	Food price volatility											
SDG5: Gender equality	Women's access to agricultural land ownership								X			
SDG6: Clean water and sanitation	Water efficiency and stress	X	X	X	X	X	X	X	X	X		
SDG12: Responsible consumption and production	Food loss and waste											
SDG14: Life below water	Fish stocks and illegal fishing and legal rights for small-scale fishers											
SDG15: Life on land	Sustainable forests and mountains				X	X	X					
	Land degradation	X	X	X	X	X	X	X	X	X	X	X

Annex 6: Relevance to UNEP

Table 9: Relevance to UNEP

United Nations Environment Programme	Expected Impacts	LD Focal Area Objectives									
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Environmental sustainability	Healthy ecosystems	X	X	X	X	X	X	X	X	X	X	X
	Improve soil and water	X	X	X	X	X	X	X	X	X		
	Safeguard the oceans											
	Govern the environment				X					X		
	Reduce pollution and waste											
	Boost renewable energy											
	Increase resource efficiency											
	Live and prosper sustainably											
	Combat climate change	X	X	X	X	X	X	X	X	X	X	X

Annex 7: Relevance to IFAD

Table 10: Relevance to IFAD

International Fund for Agricultural Development Strategic Objective	Expected Impacts	LD Focal Area Objectives										
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
Poor rural people overcome poverty and achieve food security through remunerative, sustainable and resilient livelihoods.		X	X	X	X	X	X	X	X	X	X	X
SO1: Increase poor rural people's productive capacities	Access to natural resources											
	Access to agricultural technologies and production services							X	X	X		
	Inclusive financial services											
	Nutrition											
SO2: Increase poor rural people's benefits from market participation	Diversified rural enterprise and employment opportunities											
	Rural investment environment			X			X				X	
	Rural producers' organizations							X	X	X		
	Rural infrastructure											
SO3: Strengthen the environmental sustainability and climate resilience of poor rural people's economic activities	Environmental sustainability	X	X	X	X	X	X	X	X	X	X	X
	Climate change	X	X	X	X	X	X	X	X	X	X	X

Annex 8: Relevance to UNCCD

Table 11: Relevance to the United Nations Convention to Combat Desertification (UNCCD)

UNCCD Strategic Objective	Expected Impacts	LD Focal Area Objectives									
		LD1			LD2			LD3			LD4	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
1. Improved living conditions of affected populations	1.1: People living in areas affected by desertification/land degradation and drought to have an improved and more diversified livelihood base and to benefit from income generated from sustainable land management.	X	X	X	X	X	X	X	X	X		
	1.2: Affected populations' socio-economic and environmental vulnerability to climate change, climate variability and drought is reduced.	X	X	X	X	X	X	X	X	X		
2. Improved condition of affected ecosystems	2.1 Land productivity and other ecosystem goods and services in affected areas are enhanced in a sustainable manner contributing to improved livelihoods.	X	X	X	X	X	X	X	X	X		
	2.2 The vulnerability of affected ecosystems to climate change, climate variability and drought is reduced.	X	X	X	X	X	X	X	X	X		
3. Generation of global benefits	3.1 Sustainable land management and combating desertification/land degradation contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change.	X	X	X	X	X	X	X	X	X	X	X
4. Resource mobilization through partnerships	4.1 Increased financial, technical and technological resources are made available to affected developing country Parties, and where appropriate Central and Eastern European countries, to implement the Convention.											
	4.2 Enabling policy environments are improved for UNCCD implementation at all levels.											