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Final Report for the Evaluation of the ENRM Project in Malawi

Volume I: The ENRM and SGEF Grants and the Grant Facility

September 2022

Kristen Velyvis, Irina Cheban, Naomi Dorsey, Elena Moroz, Joy Nyabwari, Cameron Williams, and Jacqueline Shieh

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Mathematica strives to improve public well-being by bringing the highest standards of quality, objectivity, and excellence to bear when collecting information and performing analysis for our clients. This evaluation reflects the independent assessment of the authors who have no potential conflicts of interest, to their knowledge, in evaluating the ENRM Project. The evaluation is funded by MCC, a U.S. government agency. Mathematica also received support in conducting the evaluation from a sub-contracted firm, Kadale Consultants, which is a data collection organization based in Malawi.

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ACRONYMS

AEC	Area Extension Committee
ADC	Area Development Committee
CA	Conservation Agriculture
CBO	Community-Based Organization
CCJP	Catholic Commission for Justice and Peace
CD	Community Development
ENRM	Environment and Natural Resources Management
EQ	Evaluation Question
FGD	Focus Group Discussion
FISD	Foundation for Irrigation and Sustainable Development
GBV	Gender-Based Violence
GVH	Group Village Head
Ha.	Hectare
IGA	Income-Generating Activities
KII	Key Informant Interview
MCA-Malawi	Millennium Challenge Account Malawi
MCC	Millennium Challenge Corporation
MWK	Malawi Kwacha
M&E	Monitoring and Evaluation
NGO	Nongovernmental Organization
REFLECT	Regenerated Freirean Literacy Through Empowering Community Techniques
SGEF	Social and Gender Enhancement Fund
SLM	Sustainable Land Management
TA	Traditional Authority
ToT	Training of Trainers
TSP	Training Support Partners
VDC	Village Development Committee
VFAC	Village Forest Area Committee

VH	Village Head
VNRMC	Village Natural Resources Management Committee
VSL	Village Savings and Loan
WOLREC	Women's Legal Resources Centre

EXECUTIVE SUMMARY

A. Overview of compact and interventions evaluated

Malawi relies heavily on hydropower from three sites along the Shire River for its electricity, making it susceptible to environmental changes that inhibit power generation. Changing climate and land use practices limit plant utilization by causing increased sedimentation in the head ponds of the power plants, which reduces water levels, and by amplifying weed growth, which clogs plant turbines.

In response, the Millennium Challenge Corporation (MCC) financed and the Millennium Challenge Account-Malawi (MCA-Malawi) implemented a five-year $344.8 million[1] energy-sector compact between September 20, 2013, and September 20, 2018. The Environmental and Natural Resources Management (ENRM) Project, a part of the compact, addressed weed and sediment management and land use practices along the Shire River. As part of the ENRM Project, MCA-Malawi created a grant facility to provide funding and technical support to 11 non-governmental organizations (NGOs) to carry out two Activities:

- The **ENRM Activity** provided funding to reduce soil erosion in high-priority catchment areas by improving land management practices, including forest management, riverbank protection, conservation agriculture, and crop diversification.
- The **Social and Gender Enhancement Fund (SGEF) Activity** complemented the ENRM activity and aimed to help women and vulnerable groups improve their economic and social rights and their decision-making power within their households and communities. SGEF also worked with men, who have limited ownership of land in a matrilineal society.

As part of an overall evaluation of the ENRM Project, MCC contracted Mathematica to conduct an independent evaluation of the ENRM and SGEF grants and the grant facility. This report presents findings from in-depth case studies of five grants under the ENRM and SGEF Activities and a performance evaluation of the grant facility. A companion volume (D'Agostino et al. 2022) contains findings from the evaluation of three other aspects of the ENRM Project—the Weed and Sediment Management Activity, Environmental Trust Sub-Activity, and the ENRM Project as a whole.

B. Implementation summary

Through a grant application process, the grant facility prioritized programming within 12 priority catchment areas (seven in the Upper Shire and five in the Middle Shire). Grantee activities covered four of the five priority catchment areas in the Middle Shire and four of the seven priority catchment areas in the Upper Shire. In total, the grantees implemented activities in 771 villages encompassing 22 Traditional Authorities, with each grant covering 20 to 127 villages (MCC 2018).

The 11 ENRM and SGEF Activity grantees funded represented a mix of international NGOs with country offices in Malawi (5 grantees) and Malawian NGOs (6 grantees). Grantees promoted a variety of natural resource management activities, including crop diversification, mulch production, and tree planting. The FISD grantee was unique in that it also implemented a solar-powered irrigation scheme. These conservation activities were complemented by women's empowerment programs, such as business and leadership training, village savings and loan (VSL) groups, and REFLECT (Regenerated Freirean Literacy through Empowering Community Techniques) circles that promoted collective, participatory, and gender-equitable action towards community-based goals. Grantees mainly targeted farming

[1] This is the final disbursed amount, not the amount obligated at entry into force.

community members—both men and women—in the priority catchment communities because they were the most likely to be able to implement and benefit from the ENRM activities.

The grant facility was established to provide grant funding and technical support to the 11 NGOs carrying out work under the ENRM and SGEF Activities. It was also a structure through which to pilot various sustainable land management (SLM) approaches. The grant facility was implemented as planned with only minor deviations and exceeded the output targets it tracked, including the number of trees that survived, the number of leaders trained in ENRM, and the numbers of operational REFLECT circles and VSL groups started or supported. Details on activity implementation and a full discussion of how and whether targets were achieved are provided in our interim report (Coen et al. 2019).

C. Findings

In Table ES.1, we present a summary of the key findings by evaluation question. The evaluation includes one question about the evolution of institutional arrangements for one of our five grant case studies—FISD—because implementation had not been completed by the time of the interim evaluation. The other evaluation questions focus on the post-compact adoption status of the practices promoted by the ENRM and SGEF Activities, longer-term outcomes, and perceptions of the future sustainability of the practices promoted by the ENRM and SGEF Activities, and whether the objectives of the grant facility were attained.

Table ES.1. Summary of key findings

Evaluation questions	Key findings
FISD implementation	
Findings on FISD implementation 1. How did the institutional arrangements put in place by the grantees evolve over time?	• The water user association (WUA) continues to implement fair water sharing and access. • The following factors limit the WUA's overall success: – Water pumps breaking and the lack of capacity to fix them, relying on FISD to return to the communities for maintenance – Landowners with significant power over newly irrigated land, including the ability to determine the price at which others can access it – The inability to enforce land agreements, creating a risky system for renters • Those with access to newly irrigated land have been able to add a second harvest per year and diversify their crops. Their success has increased demand for irrigated land, and thereby increased its price, to landowners' benefit. • Land agreements with terms that are hard to enforce, and high rental prices have driven off some participants and prevented the poorest from taking part. • FISD remains involved in the communities and provides maintenance for the irrigation scheme. It is now expanding its activities through the following activities: – Creating a paid contract with farmers for repair and maintenance of the irrigation scheme – Selling a crop insurance scheme – Planning to expand the irrigation scheme and include more farmers • The FISD management was arrested for stealing money from a Government of Malawi program and the future of FISD is in question. Therefore, there is some concern regarding the long-term sustainability of FISD interventions and the irrigation scheme due to their dependence on FISD's support. Overall, the institutional structures put in place operate well enough to enable those with access to irrigated land to succeed. However, the institutional structures overseeing the scheme lack the capacity and power to ensure that it functions optimally and skew benefits toward those already better off. The reliance on FISD for repair and maintenance of the physical infrastructure also leaves the sustainability of the scheme vulnerable.

Table ES.1. ***(continued)***

Evaluation questions	Key findings
Cross-case comparison study	
Findings on conservation agriculture and land management practices 2. To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? Were the farmers able to apply these practices appropriately since the end of the grants? a. Which land management practices are more readily sustained by farmers and communities, to what extent, and why? Are there differences in sustained adoption between male and female farmers?	• ENRM grant interventions led to widely sustained adoption of many conservation agriculture (CA) and sustainable land management (SLM) practices among project participants. • Most project participants have had the capacity, resources, and motivation to apply these practices appropriately since the end of the grants. • Spillover of CA and SLM practices in neighboring and participating villages is reported for most widely sustained practices. • Three years after the end of the grants, the four most widely sustained land management practices are contour farming practices, tree planting, making and using manure compost, and mulching. • Women remain on the forefront of sustained adoption of CA and SLM practices. • Project participants who continue to adopt CA and SLM practices do so mainly because they experience financial and environmental benefits.
Findings on changes in gender roles in the household and communities and income-generating activities 3. To what extent did the intervention result in sustained changes in gender roles in the household and communities? a. To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? b. To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? c. To what extent did the intervention lead to sustained leadership opportunities for women? To what extent did the intervention promote sustained female-headed household involvement in community decision-making? d. To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities?	• SGEF interventions resulted in widely sustained changes in gender roles in households and communities three years after the end of the grants. • Increased leadership opportunities for women are the most widely sustained change and have the most spillover among nonparticipants in neighboring villages. • Participants are motivated to sustain shifts in gender roles by the benefits they experience, such as fewer arguments between spouses, spending that improves family well-being, and investments in farm production. The ability to sustain changes in gender roles is supported by the improved economic, leadership, and human capital changes resulting from the projects. • Spillover among nonparticipants is reported for most key activities and changes in gender roles inside participating villages and in neighboring villages. • VSLs remain the most popular grant activity; they are widely sustained, and their use continues to expand among participants and nonparticipants.

Table ES.1. ***(continued)***

Evaluation questions	Key findings
Findings on stakeholders' perceptions of the sustainability of grant activities 4. What are stakeholders' perceptions of the sustainability of grant activities targeting: a. improved land management? b. social and gender barriers? c. What factors were driving beneficiaries to continue to adopt SLM practices?	• Most participants are confident in the longer-term sustainability of CA and SLM activities. • The grant activity most likely to be sustained in the long term is the VSL, which remains popular and is expanding. • Respondents in all five cases think most of the gender-role changes in households and communities will be sustained into the future. • Benefits such as increased yields, income, and ability to attend to household well-being are main contributors to sustainability for all maintained activities. • Encouragement from local government agencies, local leaders, and trained community members supports sustainability of both types of activities.
Grant facility evaluation	
Findings on grant facility objectives 1. Which of the following objectives from the grant facility manual were and were not achieved by the grant facility, and why? a. Maintain ecological integrity of landscapes. b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation. c. Allow beneficiaries to innovate and implement technologies that have proved to reduce soil erosion. d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power). e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges. f. Address the social and gender disparities in the Shire River Basin. g. Improve participation of both men and women in the implementation of ENRM activities.	• The grant facility was not able to make environmental improvements noticeable at the level of the Shire River Basin, according to stakeholders, because only a small fraction of the land and people of the Basin were involved in the grant projects. However, stakeholders think that, with time, some of the interventions could still make a difference locally. • The grant facility was flexible, allowed a certain amount of creativity and innovation, and supported organizations to initiate or expand efforts to address ENRM challenges. However, through its support, the grant facility mainly encouraged very similar interventions to be implemented across grants, losing the ability to test the effectiveness of different activities. • The grant facility supported efforts to improve control and sustainable management of resources by women and addressed social and gender disparities in the Shire River Basin. These activities also helped ENRM activities to succeed.

D. Conclusions

In our final evaluation of the ENRM Project, we assessed the outcomes and sustainability of five grants under the ENRM and SGEF Activities as well as the performance of the grant facility about three years after the end of the compact. From our cross-case comparison, we find that interventions undertaken by the five grants led to widely sustained positive shifts in land management practices and gender norms, with gains in production and incomes driving these changes. We find that the grant facility was able to successfully integrate social, gender, and environmental activities, which contributed to more equitable participation, control, and decision making around SLM through changed gender norms. Were it to have a broader scope, the grant facility had the potential to have wider effects on soil erosion and hydropower production in the Shire River Basin. Below, we provide conclusions drawn from our findings, which have implications for the future design, implementation, and improvement of environmental and gender interventions.

- **Aligning the participants' private economic incentives with environmental public goods and getting local buy-in are critical for successful implementation, adoption, and longer-term sustainability of ENRM activities.** The most widely continued SLM practices were those that produced tangible economic incentives for participants and had support from local leaders, government agencies, and/or community members. Integrating these key design and implementation factors in the design of future ENRM programs can contribute to sustained adoption by participants.
- **Intentionally programming activities designed to affect gender roles in households and communities can successfully lead to sustained shifts in behavior.** All five grantees sustainably increased women's participation in intra-household decisions on resource allocation, bringing about more equitable divisions of labor in both household and farm labor, and creating opportunities for women to take leadership roles in their communities. REFLECT circles were considered a key enabler of shifts in gender roles, while participation in VSLs reportedly empowered women both economically and socially.
- **Integrating ENRM and SGEF interventions had multiple, intersecting positive effects on gender equity and land management.**
  - **Success of the ENRM interventions was augmented by the success of the SGEF activities in all five case studies.** Ensuring that both men and women are integrated meaningfully into all aspects of ENRM intervention planning and implementation has been advantageous for achieving success in the ENRM activities. Ensuring women have the skills, time, decision-making ability, control over assets, and increased access to money allows them to be more active and successful participants in ENRM activities. As women remain at the forefront of these activities, their participation has been essential in the activities' success.
  - **Success of the SGEF interventions was augmented by including ENRM activities in all five case studies.** The skills and capacities that women acquired during the ENRM grant programs built self-efficacy and human capital, which in turn, improved community and household acceptance of their increased involvement in household decision making regarding land and natural resource use and household finances.
  - **Both the ENRM and SGEF activities contributed to women's income and livelihoods, which facilitated shifts toward more equitable gender norms.** Increased opportunities for women to make, save, borrow, and invest money (through VSLs and income-generating activities) coupled with increased incomes from production (through conservation agriculture and SLM practices) improved women's ability to advocate for more equitable division of labor and decision making within the household. The program's theory of change does not include an intentional effect from increased income and livelihood outcomes to more equitable gender norms; however, program planners should consider this flow in designing future programs.

E. Evaluation type, questions, methodology

- The evaluation was an ex-post performance evaluation of the ENRM and SGEF grants and the grant facility. To evaluate the ENRM and SGEF grants, we conducted individual in-depth case studies as well as a cross-case comparison of five grants to assess the sustained adoption of grant activities and output-outcome linkages about three years after the end of the compact. We conducted an ex-post performance evaluation of the grant facility to examine whether and how it achieved its intended objectives. The final evaluation questions for the grants focus on the post-compact adoption status of the practices promoted by the ENRM and SGEF Activities, longer-term outcomes, and perceptions of the future sustainability of the practices promoted by the ENRM and SGEF Activities. For the grant

facility Sub-Activity, the final evaluation questions focus on whether the objectives of the grant facility were attained.

- The five grants evaluated were Training Support for Partners (TSP), United Purpose (UP), Foundation for Irrigation and Sustainable Development (FISD), Catholic Commission for Justice and Peace (CCJP), and the Women's Legal Resources Centre (WOLREC). These grants were chosen based on the strength of their implementation, geographical dispersion, presence of ENRM and SGEF activities, distinct approaches, and strong intervention presence. The primary qualitative data gathered for the individual grants included key informant interviews (KIIs), focus group discussions (FGDs), and direct observations within grant communities. We developed semi-structured interview protocols and focus group discussion guides for each type of respondent, with questions intended to elicit participants' experiences around sustained adoption of grant activities, perceptions of future activity sustainability, and factors that affect both. Staff from Kadale Consultants translated the protocols and conducted observations, KIIs, and FGDs in July and August 2021. For the grant evaluations, we used thematic analysis and data triangulation to evaluate data on continued adoption and sustainability. We also used a cross-case comparative analysis to uncover broader factors that affect sustained adoption of ENRM and SGEF activities.
- The data for the grant facility evaluation included data gathered through KIIs with former MCC and MCA-Malawi staff. We developed a semi-structured interview guide for the KIIs designed to elicit participants' reflections on whether objectives of the grant facility were accomplished and why or why not. Mathematica staff conducted the KIIs in late 2021 and early 2022. For the grant facility evaluation, we used thematic analysis and data triangulation to analyze which grant facility objectives were achieved and why.

I. INTRODUCTION

In Malawi, hydropower is a critical source of energy—72 percent of the country's electricity is generated from three hydropower plants along the Shire River (International Renewable Energy Agency [IRENA] 2021). Excessive sedimentation and invasive aquatic weed overgrowth, however, lead to interrupted power supplies, limited generative capacity, and reduced active storage of these hydropower plants (Government of Malawi 2013; Lea and Hanmer 2009). Previous studies suggest that poor land management practices are a primary driver of excessive weed growth and sediment build-up in the Shire. Increasing population density and persistent poverty continue to fuel deforestation and agriculture expansion into fragile areas, resulting in further environmental degradation, soil erosion, and fertilizer runoff (Government of Malawi 2013).

In response, the Millennium Challenge Corporation (MCC) financed the Environmental and Natural Resources Management (ENRM) Project, which was implemented by the Millennium Challenge Account-Malawi (MCA-Malawi). A grant facility was created by MCA-Malawi as part of the Project to provide funding grants and technical support to 11 non-governmental organizations to carry out work under two Activities in the Shire River Basin:

1. The ENRM Activity provided funding to reduce soil erosion through improved land management activities in high-priority catchment areas.
2. The Social and Gender Enhancement Fund (SGEF) Activity complemented the ENRM Activity, aiming to support women and vulnerable groups to improve their economic and social rights as well as their decision-making power within their households and communities. SGEF also worked with men who have limited control of resources within matrilineal societies.

As part of an overall evaluation of the ENRM Project, MCC contracted Mathematica to conduct an independent evaluation of the ENRM and SGEF grants and the grant facility. This report presents findings from in-depth ex-post case studies of five grants under the ENRM and SGEF Activities and our ex-post performance evaluation of the grant facility. A companion volume (D'Agostino et al. 2022) contains findings from the evaluation of three other aspects of the ENRM Project: (1) the Weed and Sediment Management Activity, (2) Environmental Trust Sub-Activity, and (3) the ENRM Project as a whole.

In this introductory chapter, we provide context for our case study analysis of the ENRM and SGEF grants and our assessment of the grant facility. First, we give a brief overview of the Malawi Compact and the interventions evaluated in this report, and we present the logic model and theory of change for the ENRM and SGEF Activities and the grant facility Sub-Activity. We also describe the geographic coverage of the interventions and provide an implementation summary, including descriptions of program participants. Finally, we summarize some of the effects the COVID-19 pandemic has had on program participants, their families, and their communities. A roadmap of the entire report concludes this chapter.

A. Overview of Malawi Compact

The $344.8 million[2] Malawi Compact, implemented from September 20, 2013 to September 20, 2018, aimed to develop a more reliable and efficient electricity grid and provide reduced energy expenses for enterprises and households across the country. Three projects were implemented under the compact:

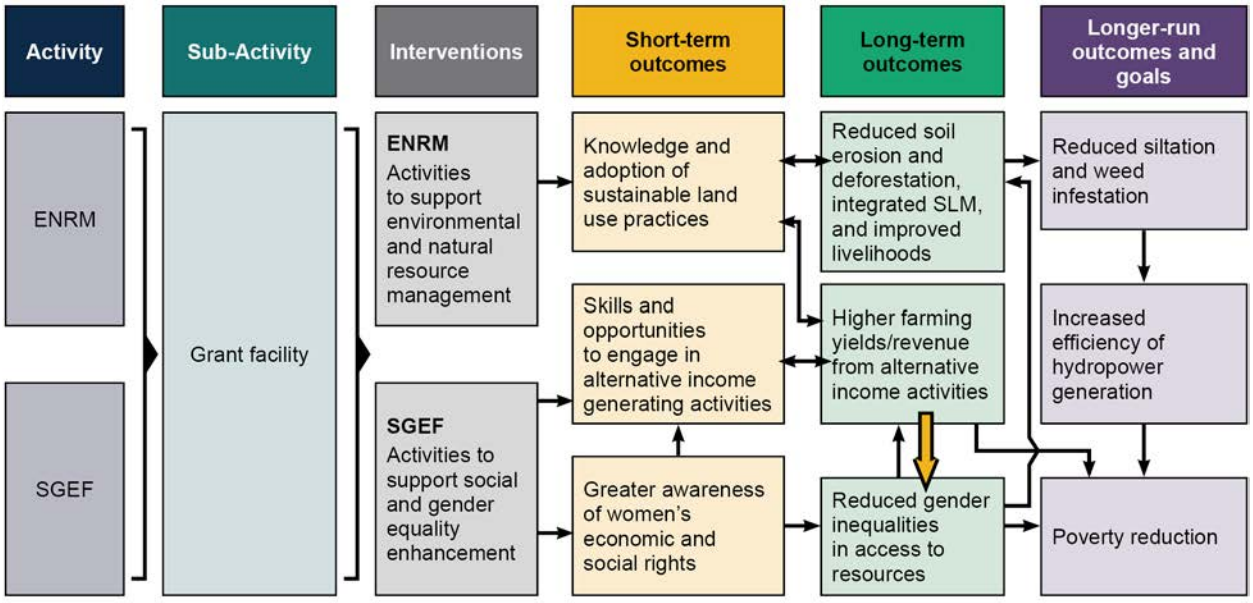
[2] The amounts in this paragraph are the final disbursed amounts, not the amounts obligated at entry into force.

(1) The Infrastructure Development Project, designed to rehabilitate and modernize Malawi's power system ($255.4 million) (MCC 2021); (2) the Power Sector Reform Project, which undertook institutional and regulatory reform to improve the regulatory framework and energy policy environment ($27.4 million); and (3) the ENRM Project, which worked to reduce costly disruptions and increase the efficiency of hydropower generation by mitigating aquatic weed growth and sedimentation in the Shire River Basin ($19.9 million).[3]

B. Program logic for the ENRM and SGEF Activities and the Grant Facility Sub-Activity

The ENRM and SGEF Activities and the Grant Facility Sub-Activity are part of the ENRM Project logic (see D'Agostino et al. 2022 for the full ENRM Project logic model). The overall project objective was to reduce siltation and weed infestation, leading to increased efficiency of hydropower generation, and poverty reduction. Here we show how the ENRM and SGEF grants and the grant facility were designed to reduce siltation, and reduce poverty directly as well as indirectly. Although each grantee developed a program logic specific for their activities, all the grants shared a common underlying program logic.[4] From a review of the grant facility manual, grant proposals and reports, and interviews with MCC, MCA-Malawi, and grant program staff, we collated the underlying program logic for the grant facility and ENRM and SGEF grants in Figure I.1.

Figure I.1. Program logic for ENRM and SGEF grants



[3] The compact also disbursed $35.3 million for program administration and $6.7 million for monitoring and evaluation.

[4] We present the grant-specific program logics for the five grantees selected for our case study analysis in the respective case studies (Appendices B through F).

To fund the ENRM and SGEF Activities, MCA-Malawi established a grant facility that identified the most promising interventions through a competitive application process. Grants were implemented from 2015 to 2018 by grantees, with grant facility support and oversight. Grants were designed and selected to address several problems in the intervention areas, including deforestation due to charcoal production, limited economic opportunities for households, and poor land management practices that resulted in high levels of soil erosion. Grants implemented various activities (interventions), which were expected to (1) increase knowledge and adoption of sustainable land use practices, (2) increase engagement in alternative income-generating activities to reduce pressure on natural resources, and (3) increase awareness around women's economic and social rights within their communities (short-term outcomes).

These short-term outcomes were intended to lead to three main long-term outcomes: (1) reduced sediment runoff and weed growth from uptake of sustainable land use practices, (2) increased farming yields and revenue from improved farming practices and diversified income sources, and (3) reduced gender inequalities in access to resources from increased awareness of women's economic and social rights. Improvements in resource access were also intended to increase household income. Relationships between some short-term outcomes and long-term outcomes were hypothesized to be bidirectional (indicated by double-sided arrows), creating positive feedback loops on yields and income. The intended longer-run outcomes and goals of these interventions included: (1) increased efficiency of hydropower generation through decreased sediment runoff and weed growth in the Shire and (2) reduced poverty through increased crop yields and revenue from alternative income activities as well as enhanced gender equality in access to resources.

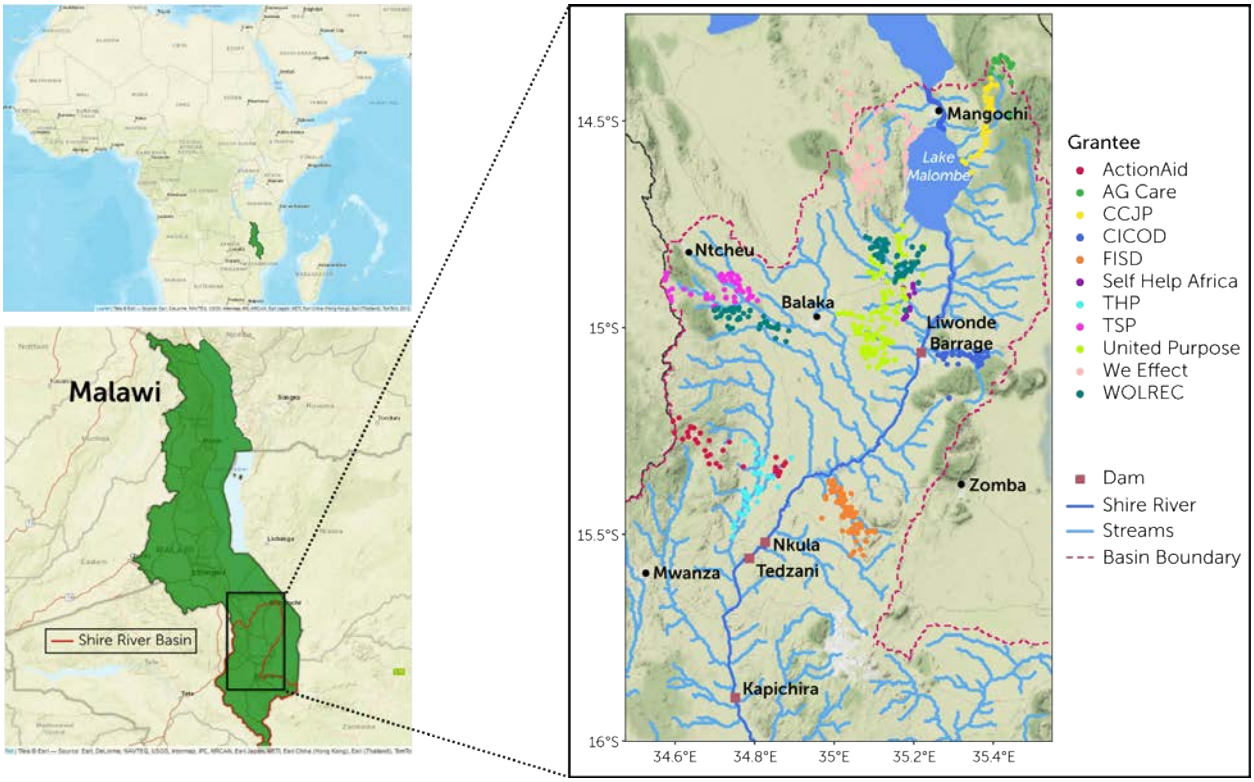
1. Geographic coverage

Through the grant application process, the grant facility prioritized programming within 12 priority catchment areas (seven in the Upper Shire and five in the Middle Shire). These priority or "hot spot" catchment areas were identified during baseline assessments conducted as part of Compact due diligence as areas that were large contributors to excessive soil runoff in the Shire River (LTS International et al. 2010, 2011, 2013, 2014a, 2014b, 2014c).[5] The grant facility received 57 grant applications, 11 of which were funded and implemented in eight of the hot spot catchment areas over a three-year period.

Grantee activities covered four of the five priority catchment areas in the Middle Shire and four of the seven priority catchment areas in the Upper Shire. In total, the grantees implemented activities in 771 villages encompassing 22 Traditional Authorities (TAs), with each grant covering 20 to 127 villages (MCC 2018). Figure I.2 shows the location of each intervention village, differentiated by grantee. The dark blue line indicates the Shire River, and the lighter blue lines indicate the streams that feed into it.

[5] In the Middle Shire, the World Bank and MCC collectively identified 10 priority catchment areas, then split those into two groups. The World Bank focused on five of the catchment areas in the Middle Shire and MCC focused programming on the other five.

Figure I.2. Map of ENRM and SGEF grant activity locations



2. Implementation summary

The 11 ENRM and SGEF Activity grantees funded represented a mix of international NGOs with country offices in Malawi (five grantees) and Malawian NGOs (six grantees), all with a strong country presence. A detailed overview of the 11 grantees, including implementing organization, activities, and location, can be found in our interim report (Velyvis et al. 2019).

The application process encouraged prospective grantees to target geographic "hot spot" catchment areas and use common interventions designed to tackle the identified problems in the "hot spot" areas (MCA-Malawi 2014). The process did not explicitly define program participant selection criteria. Grantees mainly targeted farming community members—both men and women—in the "hot spot" communities because they were the most likely to be able to implement and benefit from the ENRM activities. The SGEF activities were also targeted to men and women in the same communities, with traditional male leaders (including traditional, religious, and district authorities) specifically targeted for the SGEF behavior change and sensitization activities. However, many people who were targeted assumed the SGEF activities were mainly for women. More focused targeting and seeing the benefits of the interventions were necessary to get men to take part, but men's involvement never equaled that of women.

ENRM and SGEF grantees implemented sustainable land management (SLM) and conservation agriculture (CA) activities that upheld, to varying degrees, the three CA soil management principles: minimum tillage, maintaining ground cover, and adopting crop rotation/intercropping. Some of the main soil management practices grantees focused on were maintaining ground cover through tree planting,

vetiver grass planting, elephant grass planting, mulching, forest management, promoting crop rotation and diversification through fruit propagation, promotion of new crops, and disbursement of seeds. Outside of CA activities, grantees promoted water conservation measures such as contour ridge construction, constructing box ridges, and gully and swale construction to reduce soil erosion. Manure composting, which helps improve fertility and soil structure, was also implemented to both increase production and reduce soil erosion. Additionally, to reduce pressure on natural resources, the ENRM and SGEF grantees promoted a number of alternative income-generating activities, such as promoting apiaries, planting fruit trees, and providing training in business skills and marketing. A solar irrigation scheme for farmers was established by one grantee, the Foundation for Irrigation and Sustainable Development (FISD), to help reduce the need for agricultural expansion. At least one grantee also promoted the construction and adoption of fuel-efficient cookstoves to reduce household firewood usage.

Grantees used various strategies to encourage adoption of these practices. First, grantees aligned participants' private economic incentives with environmental public goods. Grantees focused on practices that would explicitly help farmers reclaim land, produce more, or produce higher value crops that were environmentally sustainable. Second, to encourage community-based management of environmental resources, grantees engaged and increased the capacity of local leaders, government agencies, and community members to promote and implement SLM practices. Grantees worked with village natural resource management committees (VNRMCs) and environmental management or forestry groups, and promoted village-based ENRM action plan development.

SLM activities were complemented by women's empowerment programs, which included trainings for business skills, leadership, and gender equity; establishing village savings and loan (VSL) groups; and facilitating REFLECT (Regenerated Freirean Literacy through Empowering Community Techniques) Circles. REFLECT Circles, which use a participatory approach to adult learning and social change, aimed to bring communities together to discuss issues they identified as important while also ensuring equal participation and challenging existing power dynamics (ActionAid 2017; Reflect Action 2009). REFLECT Circles were adapted to incorporate natural resource management and gender equity principles. Specifically, discussions within REFLECT Circles enhanced communication between women and men to manage land jointly and sustainably, sensitized participants to women's rights, and raised awareness on environmental issues that contribute to electricity generation disruptions (as well as their impact on women's livelihoods) (Archer and Goreth 2004). To support facilitators in integrating discussions around gender equity and sustainable land management (SLM) practices into REFLECT Circles, MCA-Malawi developed technical assistance manuals in Chichewa and English.

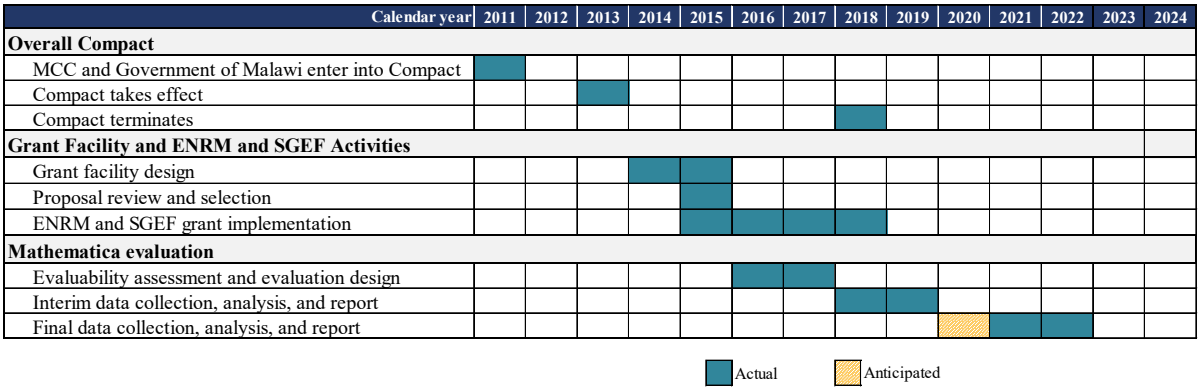
The grant facility was established as an opportunity to pilot various SLM and gender empowerment approaches. The grant application process was designed to prioritize a series of environmental and gender-related activities identified from baseline environmental reports, MCA-Malawi's and MCC's preferences, and the grantees' own experience and technical background. As a result, grantees implemented a similar package of overlapping activities covering both ENRM and SGEF objectives, though some focused more extensively on one or the other type of objective. In general, grant activities encompassed the promotion of soil and water conservation measures, alternative income-generating opportunities, gender equity changes within households and communities, and institutional capacity building for enhanced community-based environmental management.

The grant facility was implemented as planned with only minor deviations, as described in our interim report (Coen et al. 2019). The grant facility exceeded the output and outcome targets it tracked, including the number of trees that survived, the number of leaders trained in ENRM, and the number of operational

REFLECT Circles and VSL groups, as also reported in our interim report, with a full discussion of how and why targets were achieved (Coen et al. 2019). However, we found the grant facility did not obtain high quality data on important output and outcome measures such as the number of farmers adopting SLM practices.

A timeline for the grant facility, the ENRM and SGEF Activities, and Mathematica's independent evaluation is provided in Figure I.3.

Figure I.3. ENRM Project timeline



C. Effect of COVID-19 on grant communities

To provide additional context on how COVID-19 may have affected the activity outcomes and sustainability that took place in grant communities, we asked respondents in all five case study areas about the impact of the COVID-19 pandemic on their households and communities during the final round of data collection.

Respondents across all villages agreed that morbidity due to COVID-19 was low in their villages, but the pandemic negatively affected their incomes and food security. Restrictions put in place by the government during the pandemic hindered people from going to markets and conducting their business. People also feared going to the market or couldn't afford higher transportation costs or the masks and sanitizer required for some markets. As a result, farmers couldn't sell their produce at markets and instead sold it for lower prices to vendors who came to their villages. Additionally, the prices of food and farming inputs (such as fertilizer) increased. VSLs were affected because of restrictions on gathering and because people made less money from their financial ventures so they saved less or could not pay back loans. Respondents reported that the situation with VSLs has improved as restrictions have been eased.

Respondents also reported that the pandemic affected their health and health-seeking behavior. In all areas, respondents reported that they were affected by anxiety due to their fear of the virus, financial worries, and being unable to visit relatives and friends (due to movement restrictions and fear of contracting the virus). People were afraid of going to the hospital for fear of contracting COVID-19 or being misdiagnosed, and some could not afford masks, which were mandatory within the hospital. As a result, respondents in one area reported that even sick community members hesitated to go to hospitals. In a few villages, respondents also discussed mistrust of the vaccines for fear of side effects. On the other hand, respondents in some villages reported that now they know they need to wash hands frequently

(before eating, after using the bathroom, for children during and after playing) and have changed their habits and those of their children. In one area, respondents highlighted that they are leading a healthier life now with these new healthier habits. However, some respondents said it is difficult for them to follow the advice because they do not have enough soap, as the price of soap has gone up since the pandemic.

Respondents discussed the effects of the pandemic on their children and their education—for example, children falling behind because schools had been closed or their families could not afford school fees. Several respondents reported an increase in teen pregnancy in their villages because schools were closed and young people had less to do.

The pandemic was further exacerbated by the fact that farmers reported receiving little to no support from the government or other organizations. Most respondents said that they received no financial help. In a few villages, respondents mentioned receiving the COVID-19 vaccine and a very few masks provided by the government or NGOs. In one area, respondents reported that many organizations that were assisting with income-generating activities had also closed down their operations.

D. Roadmap for the report

The rest of this report is organized as follows. In Chapter II, we provide an updated literature review on recent evidence around the ENRM and SGEF activities implemented by the grantees. In Chapter III, we describe our ex-post performance evaluation and case study methodology. In Chapter IV, we discuss our findings on the implementation of the FISD grant since the interim. In Chapter V, we present findings on our grant evaluation questions, including findings from a cross-case comparison of the case study grants. This chapter also contains an assessment of how well the underlying logic model for the grant held up. In Chapter VI, we present findings on evaluation of the grant facility. In Chapter VII, we discuss conclusions and next steps. In Appendix A, we provide a complete listing of the interim and final evaluation questions for the grants and the grant facility and where they are answered. We provide in-depth analysis and results of the five case studies, upon which the cross-case analysis is based, in Appendices B–F. First, we report findings from Training Support for Partners (TSP), which focused on both ENRM and SGEF activities in Appendix B. We then present findings from grants that mainly focused on ENRM activities: United Purpose (UP) and FISD in Appendices C and D. Findings from case studies of grants that mainly focused on SGEF activities (Catholic Commission for Justice and Peace [CCJP] and Women's Legal Resources Centre [WOLREC]) are provided in Appendices E and F.

II. LITERATURE REVIEW

This chapter updates the literature review from our interim findings report (Coen et al. 2019) with recently published evidence on interventions to reduce erosion and programs to advance women's empowerment. In summarizing recent literature on the interventions ENRM and SGEF Activity grantees implemented, this review provides context for the final findings of our ENRM evaluation. In each section, we highlight gaps in the literature, how our evaluation addresses them, and the policy implications of the grants and grant facility evaluations.

A. Erosion protection (natural resource management) approaches

Soil erosion continues to be a key challenge in Malawi—more than three-quarters of the country's soil is at risk of loss (Omuto & Vargas 2019). In the Middle Shire, land cover changes due to deforestation and agricultural expansion, poor agriculture practices, and other human activities all contribute to soil erosion (LTS International 2014a). Soil erosion, in turn, increases sediment in rivers and aquatic weeds that damage and clog turbines and hydropower plant equipment, reduce reservoir capacity, and slow river flow (Basson, 2004; Mellhorn, 2014; Schellenberg et al. 2017).

Sustainable land management (SLM) practices, such as tree planting, mulching, and forest management activities, can improve land cover, reduce rainfall impacts, and decrease sediment loading (FAO 1989; Nkonya et al. 2016; Shi et al. 2019; Ziadat & Taimeh 2013). These practices also have the potential to reduce runoff and soil erosion. Below, we summarize new evidence on the SLM practices that ENRM and SGEF grantees promoted—and that the environmental trust could support—including conservation agriculture (CA), tree planting and forest management, use of fuel-efficient cookstoves, and alternative income-generating activities.

Although many of the following SLM activities have experienced widespread implementation in Malawi, research has indicated adoption challenges around many of these interventions. By uncovering factors, including incentives, that affect adoption and sustainability of adoption across grants, this evaluation will contribute to the evidence base of effective strategies for sustainable adoption. As a diverse and innovative set of SLM interventions were piloted as part of the ENRM Project, this evaluation can also help inform policymakers, practitioners, and other environmental stakeholders on various activities, contexts, and environments in which SLM can be successfully implemented.

1. Conservation agriculture

CA is a farming system based on a set of three soil management principles within the SLM framework: (1) minimum tillage, (2) maintaining ground cover, and (3) crop rotation or intercropping (Bouwman et al. 2021). Evidence shows that by minimizing soil disturbance and maintaining soil cover, CA can significantly reduce soil erosion from wind and water (Baveye et al. 2011; Silenzi et al. 2010). CA can also increase crop yields (Asfaw et al. 2018; Boillat et al. 2019; Nyasimi et al. 2014; Pretty et al. 2011; Ruminamhodzi et al. 2011). Moreover, CA can decrease eutrophication (dense plant life caused by excessive nutrients in water) by reducing the transportation of soil nutrients and decreasing domestic, industrial, and agricultural runoff (Ebabu et al. 2019; Mironga et al. 2012; Palm et al. 2014; Stager et al. 2009). Given this evidence, the Malawian government and local and international development partners have advocated for CA practices (Corbeels et al. 2014).

Despite CA's potential to positively impact both crop yields and soil erosion, adoption of CA has been limited among farmers in Malawi, with studies estimating uptake rates below 2 percent (Asfaw et al. 2018; Bisangwa 2013; Fisher et al. 2018; McNair 2013; Nyambose & Jumbe 2013). Trade-offs in adopting CA may be the key factor hindering farmer adoption. Studies have found that farmers are more likely to abandon CA practices when the long-term benefits in yield do not outweigh the short-term costs (for labor, weeding costs, and other inputs) and immediate needs (income) (Corbeels et al. 2014; Giller et al. 2009). Monetary incentives, particularly those provided before productivity benefits have materialized, might therefore be an effective strategy to induce uptake (Ambler et al. 2020). A randomized controlled trial in the Balaka, Machinga, and Zomba districts of the Shire River Basin employed a payment for ecosystem services (PES) model that increased the number of farmers adopting CA and the intensity of adoption (Ward et al. 2021).

Even when farmers adopt CA, they might apply only some of the three soil management practices or apply them intermittently, which prevents ecological and productivity benefits from accruing. A study in central Malawi, where CA is most widely adopted, found that because farmers were not adopting CA practices correctly, any estimate of CA adoption would likely be an overestimate (Bouwman et al. 2021). Specifically, in non-ridged plots (where the correct CA practice would be continuous minimum tillage), farmers kept the soil surface bare which increases the risk of erosion (Bouwman et al. 2021).

Moreover, although CA promoters claim that adoption leads to higher yields, adopters have reported that time and labor investments do not necessarily result in production gains. Chinseu et al. (2019) found that these experiences, along with farmers' lack of sufficient technical support for CA and social, institutional, and economic challenges, resulted in farmers abandoning these practices. Similarly, Jew et al. (2020) found that CA promotion in Malawi has focused on applying field-level techniques while neglecting the underlying challenges that limit smallholder farmers' ability to adopt CA practices even after gaining technical knowledge.

Limited adoption may also be due to the approaches used for CA promotion, including traditional agriculture extension services, farmer field schools (FFSs), and agglomeration payments, which vary in effectiveness. One study found that FFSs were more effective than agriculture extension methods in promoting CA practices, especially in reaching women and farmers with less education (Davis et al. 2012).

Furthermore, adoption factors might differ by gender. Gendered barriers to CA adoption include inequitable access to land, inputs, and credit. Certain gender roles, such as the expectation that women are responsible for household duties, can differentially affect men's and women's ability to adopt CA. For example, the increased time burden women incur as they adopt CA (as they are still expected to take on household responsibilities) was widely cited as a constraint (Wekesah et al. 2019).

2. Tree planting and forest management

Deforestation in Malawi continues at a fast pace, with tree cover falling by 13 percent (a loss of 193 thousand hectares) between 2001 and 2020 (World Resources Institute 2020). The rapid decline in forest cover, which has contributed to soil erosion, is due to an increased demand for firewood and agricultural expansion into forests (Elliot et al. 1996; Ngwira & Watanabe 2019; Worku et al. 2018). Tree planting is an effective approach to restoring degraded lands and addressing deforestation, but it has incentive-related challenges (Elliot et al. 1996; Gelagay & Minale 2016; Nawir et al. 2007; Satriawan et al. 2015). In Malawi, early tree-planting strategies used top-down approaches with no incentives for communities (Ostrom 1999). To enhance community benefits from and involvement in tree planting, Malawi formed

Village Natural Resources Management Committees (VNRMCs), which have reportedly succeeded in community-driven reforestation (Government of Malawi 1996, 2002, 2010; Wiyo et al. 2015). For example, a recent study in the Chiradzulu district of southern Malawi found that most respondents (sampled from areas with VNRMCs) were aware of firewood depletion in their communities and adapted by planting trees, participating in collective forestry activities, and using crop residues for fuels (Kunje & Missanjo 2021). Facilitating factors for effective VNRMCs included strong local institutions, local participation and involvement, and tree planting that responds to the socioeconomic needs of the local community (Adedayo 2018; Le et al. 2012).

3. Fuel-efficient cookstoves

Improved cookstoves have been developed and deployed because they offer several benefits over traditional three-stone open fires. They consume less fuelwood and therefore curb local deforestation and soil erosion. In addition to creating environmental benefits, fuel-efficient cookstoves can increase cooking efficiency and reduce pollutant exposure from open fires, lowering the risk of cardiopulmonary and neurological symptoms related to household air pollution (Bensch et al. 2021; Das et al. 2017; Hafner et al. 2020; Jetter & Kariher 2009).

Despite the environmental and health benefits of improved cookstoves, more than 90 percent of all Malawian households still use traditional three-stone cooking (Das et al. 2017; Mortimer et al. 2017). Prior studies have uncovered a number of household characteristics that are related to adoption rates. In their systematic review, Lewis and Pattanayak (2012) found a wealth of evidence linking the adoption of improved cookstoves with underlying factors, such as higher income and education as well as dwelling in an urban location, but a dearth of research on the role of credit, supply-chain strengthening, and social marketing. Moreover, findings from willingness to adopt studies in Malawi show that choosing improved cookstoves was associated with large crop residue shares (that could be used for fuel), awareness of the environmental impacts of wood fuel, fuelwood collection time, village-level peer effects, household dietary diversity, and annual net income (Jagger & Jumbe 2016; McNulty 2017).

Implementation strategies might also impact the adoption of fuel-efficient cookstoves. Reviews on improved cookstove programs have found that the effectiveness of implementation might depend on the use of participatory approaches that align implementation with local needs, culture, and social expectations (Urmee & Gyamfi 2014). Ineffective programs, on the other hand, have lacked social behavior change communication strategies and limited targeting to household financial decision-makers (Lindgren, 2020). Underfunding of government programs might also explain low adoption. To the extent there is adoption, it may be unsustainable, in part, due to nongovernmental agencies selling fuel-efficient cookstoves at lower prices that might crowd out private-sector suppliers (Gifford 2010; Nielsen et al. 2015).

4. Alternative income-generating activities

Agricultural expansion has been fueling deforestation and increasing soil erosion, as forests, wetlands, and savannahs are rapidly being converted to croplands or pastures (Maeda et al. 2010; Gibbs et al. 2010; Nkonya et al. 2013; Ngwira & Watanabe 2019). Although Malawians are aware of the negative impacts of deforestation and there are positive attitudes toward tree planting, persistent poverty and a lack of alternative income-generating opportunities continue to drive deforestation (Coutts et al. 2019). Although alternative income-generating activities that reduce deforestation are widely promoted, results from a systematic review on alternative livelihood projects for biodiversity conservation show an evidence gap, possibly due to a lack of outcome reporting or limited post-project monitoring and evaluation (Roe et al. 2015).

Small-scale irrigation schemes could improve agriculture production, incomes, and livelihoods for smallholder farmers and thereby limit the need for further agricultural expansion (Chiroro 2015). Across sub-Saharan Africa, governments have undergone irrigation management transfers, shifting operation and management responsibilities from national to sub-national levels of government and organized water user associations largely made up of farmers (Cambaza et al. 2020). Although such schemes increase community-level participation and ownership of irrigation, implementation and sustainability challenges remain in Malawi (Gondwe et al. 2018; Cambaza et al. 2020). For example, the Chingondo Irrigation Scheme became inactive for years after its establishment in 2017 because of disputes over differences in rental prices set in irrigation agreements and those demanded by landowners (Scaling Up Nutrition 2021).

B. Effectiveness of women's empowerment programming that leads to better land use practices

In Malawi, certain gendered factors affect land use practices: differential access, control, and/or use of natural resources between men and women; and decision-making among key actors in the ENRM arena. Findings from the LTS International baseline gender and social assessment in Malawi show how its matrilineal system and female-headed households contribute to and suffer the effects of soil erosion and land degradation (LTS International et al. 2014c). Under the matrilineal system of land ownership, female-headed households lack the resources to manage land sustainably, and men, who still make the agricultural decisions, are disincentivized to manage land sustainably when they do not own the land (Place et al. 2001).

Given these factors, the ENRM program logic posited interventions that address the immediate and underlying drivers of inequities between men and women could positively impact SLM. Below, we describe recent evidence on the women's empowerment interventions undertaken by the project alongside land management activities, including Regenerated Freirean Literacy through Empowering Community Techniques (REFLECT) Circles, village savings and loan (VSL) groups, and business and leadership trainings for women.

Evidence on the women's empowerment programming conducted by SGEF Activity grantees, especially REFLECT Circles, is limited, despite these interventions being commonly implemented in Malawi. Even less research has been conducted on incorporating women's empowerment activities into SLM activities. This evaluation helps address these gaps in evidence by examining not only the effects of a diverse set of women's empowerment interventions on inequitable gender norms, but also the pathways by which such shifts can affect SLM. Specifically, we sought to understand whether the SGEF interventions led to sustained changes in gender roles in households and communities, and how any behavior changes have affected SLM. We highlight the relationships between women's empowerment activities and natural resource management activities, including the various mechanisms by which women's empowerment can affect environmental outcomes, SLM activities can contribute to women's empowerment outcomes, and both can contribute to women's income and livelihoods, in turn leading to shifts in inequitable gender norms. Findings from our evaluation have implications for how women's empowerment programming can be integrated into SLM interventions to have multiple, intersecting effects on gender equality and land management.

1. REFLECT Circles

SGEF and ENRM grantees established REFLECT Circles to empower women and communities to practice sustainable natural resource management and agriculture. REFLECT Circles use a participatory approach to adult learning and social change. They bring together male and female community members, facilitating discussions on community-identified issues including gender inequity. The circles create a space for communities to establish collective voices to assert their rights, change their positions in society, and advocate for their needs.

Case studies from India, Bangladesh, Uganda, and El Salvador have highlighted how REFLECT Circles have led to positive changes in drought management and other practices related to managing natural resources (Reflect Action 2009; Archer & Cottingham 1996; Marcatto & Chung 2016).

In Malawi, REFLECT Circles have largely been used to promote adult literacy and education (Malawi Ministry of Women and Child Development 2008), with few studies examining their impact on women's empowerment and community development. However, one process evaluation in Malawi highlighted how REFLECT Circle implementation fidelity might be contributing to the lack of empowerment outcomes. Specifically, Rogers (2008) explains how REFLECT Circles in the program evaluated have shifted to be more like formal adult literacy classes rather than the intended forums for community members to discuss, debate, decide, and implement community development projects alongside literacy learning.

2. Village savings and loan groups

VSLs are a decentralized, noninstitutional, savings-led approach to microfinance whereby members provide their own savings and credit services at very low cost while retaining earnings and capital within their communities (Allen & Panetta 2010). Participation in these groups and their management committees are also hypothesized to empower women both economically and socially, through improved social capital, autonomy, and self-efficacy in community and household decision making (Gash & Odell 2013).

Although VSLs have a positive effect on women's economic empowerment, their impacts on women's social empowerment are not as firmly established. A recent systematic review found that economic self-help groups have positive impacts on women's economic, political, and social empowerment (Brody et al. 2015). Evidence in Ghana, Malawi, and Mali similarly show that VSLs significantly and positively affect women's empowerment, particularly on making household decisions, including business decisions (Karlan et al. 2017). Gash and Odell (2013) synthesized seven randomized controlled trials on VSLs in sub-Saharan Africa; although their findings likewise show that VSL participation positively affects women's economic empowerment through increased savings, use of credit, and business-related spending and profits, limited impact was found on women's decision making and social empowerment (Gash & Odell 2013).

Evidence in Ghana and Malawi does suggest that VSLs serve as effective platforms for delivering other development services to members such as those related to promoting agriculture, alternative income-generative activities, conservation, biodiversity, and natural resource protection (Guilbert 2017; Innovations for Poverty Action 2019). Additionally, a study in Kenya found that VSL participation may be linked to the adoption of sustainable land management practices, partly through increased capital for inputs (e.g., tools) but largely due to the social influence within VSLAs, with members more likely to adopt SLM when they saw the benefits accrued from other member adopters (Lee 2017). Likewise, a study in Malawi found that VSL group participation had positive and significant effects on agricultural

investments (including purchases of seeds and fertilizer), as well as on daily consumption, household expenditure, and income from small businesses (Ksoll et al. 2016). Moreover, Brody et al. (2015) found that economic self-help groups that include training programs—for instance, financial and business education or life skills training—have a larger impact on women's empowerment than groups that do not include training.

3. Capacity building activities for women

Trainings in literacy, leadership, and business and marketing can empower women, particularly as a short-term outcome. Although business and marketing trainings, including skills to expand economic options, might improve women's economic empowerment, they are limited in their impacts on business survivorship and profits, and constrained by women's time and inclusion in decision making (Buvinić & Furst-Nichols 2016; Woodruff & McKenzie 2014). By building women's capacity to influence decision makers and to make decisions on issues that are important to them, training women in leadership, business, and marketing can increase their participation in land management and other economic activities (Dejene 2007). Such women's empowerment trainings, however, have not seen long-term impacts, because they fail to address underlying structural constraints, particularly around gender norms (Bandiera et al. 2018; Marcus 2018; Pyburn & van Eerdewijk 2021; Ribot & Peluso 2003). In agriculture, this could mean that gender trainings need to account for the social norms that dictate roles for women and men regarding productive and reproductive division of labor, decision making, and access to and control of resources.

Rather than only addressing gender gaps in trainings, inputs, access, and income, gender transformative approaches engage women and men together to tackle the structural determinants of such differences, such as inequitable gender norms. Although the potential of gender transformative approaches to create sustainable change in gender, agriculture, and climate have been recognized (FAO & CARE 2019), limited rigorous evidence exists on their impact, particularly regarding natural resource management (McDougall et al. 2021). Indeed, a review of gender-related CA interventions in sub-Saharan Africa revealed a lack of research that examines gender as a social construct, with most studies merely assessing sex-disaggregated outcomes (Wekesah et al. 2019). Of the limited research of such interventions in sub-Saharan Africa, few studies targeted social norms that contribute to gendered barriers to adoption, such as control over resources, and instead focused on differential access to land, inputs, extension services, and credit facilities (Wekesah et al. 2019).

III. EVALUATION DESIGN

In this section, we provide details on the evaluation methods we used for the ENRM and SGEF grant evaluations and the Grant Facility Sub-Activity. To evaluate the ENRM and SGEF grants, we conducted an ex-post performance evaluation using in-depth case studies of five grants. We also conducted a cross-case comparative analysis of the five case studies to draw broader conclusions on the effectiveness of various activities. To assess the objectives achieved by the grant facility, we conducted an ex-post performance evaluation. These final evaluations build on findings from our interim evaluations (Velyvis et al. 2019; Coen et al. 2019), with evaluation questions, methods, and data collection adapted accordingly.

A. Evaluation type – Ex-post performance evaluation

The ex-post performance evaluation of each of the five selected grants drew on data from key informant interviews (KIIs), focus group discussions (FGDs), and direct observations of grant activities in implementation communities conducted about three years after the end of the compact, as well as a review of documents such as grant reports and MCA-Malawi grant evaluations. The case studies gathered detailed information about the sustained adoption of grant-promoted activities and evidence on links between outputs and outcomes. For one case study, we also explored the implementation of the grant that occurred after the interim evaluation in 2018. Through detailed interviews, FGDs, and direct observations of activity outcomes, the case studies gained rich context for understanding effects as well as the pathways by which these effects occurred. We conducted a cross-case comparison across the five studies to explore how common and different activities led to outcomes of interest.

We also conducted an ex-post performance evaluation about three years after the close of the compact to examine whether and how the grant facility achieved its intended objectives as described in the grant facility manual. Data for the evaluation came from KIIs with former MCA-Malawi monitoring and evaluation (M&E) and MCC staff selected based on their relevant knowledge of the grant facility's implementation, operation, and accomplishments. The interviews elicited stakeholders' perceptions on whether grant objectives were met, and factors that affected the achievement of these objectives.

During analysis we used thematic framing to explore similarities and differences in participants' perspectives regarding our main research queries and emergent issues. We triangulated data from multiple methods of data collection and the various evaluations to enhance validity, create a more comprehensive picture, and look at different ways of understanding our research questions.

B. Evaluation questions

The final evaluation questions for the grants focus on the post-compact adoption status of the practices promoted by the ENRM and SGEF Activities, longer-term outcomes, and perceptions of the future sustainability of the practices promoted by the ENRM and SGEF Activities. The evaluation also includes a question about the evolution of institutional arrangements for one of our five grant case studies. For the Grant Facility Sub-Activity, the final evaluation questions focus on whether the objectives of the grant facility were attained. These final evaluation questions were revised, with agreement from MCC, from those presented in our interim reports based on the findings from the interim evaluations (Velyvis et al. 2019; Coen et al. 2019). At interim, we answered questions on implementation of the grants and the grant facility, the end-of-Compact outcomes the grants had achieved, and the grant facility objectives that had been attained thus far. The question regarding the evolution of institutional arrangement for one of the

grants could not be fully answered at interim because implementation had not been completed for the case. A detailed comparison of the evaluation questions answered in the interim and final reports is provided in Appendix A. In Table III.1, we detail the full set of grant and grant facility final evaluation questions, data sources used, and the key program logic outcomes these questions are linked to (see Figure I.1. for the program logic for the ENRM and SGEF grants). An up-to-date literature review of published evidence on interventions relevant to these evaluations and Malawi-specific and international policy implications from our evaluation findings can be found in the companion to this report (D'Agostino et al. 2022).

Table III.1. Final evaluation questions

Evaluation questions	Data sources	Outcomes
Individual ENRM and SGEF grants' evaluations		
Evaluation Question on Grant Implementation		
1. How did the institutional arrangements put in place by the grantees evolve over time? (This applies to the Foundation for Irrigation and Sustainable Development (FISD) alone and relates to institutional arrangements related to their solar irrigation and water use agreements.)	Key informant interviews with former MCA-Malawi M&E staff, and grant program staff	
Evaluation Questions on Conservation Agriculture and Land Management Practices		
2. To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? Were the farmers able to apply these practices appropriately since the end of the grants? a. Which land management practices are more readily sustained by farmers and communities, to what extent, and why? Are there differences in sustained adoption between male and female farmers?	Site visits, key informant interviews with community leaders; focus group discussions with program participants; direct observations	Continued adoption of sustainable land management practices and participation in alternative income-generating activities
Evaluation Questions on Gender Roles in the Household and Communities		
3. To what extent did the intervention result in sustained changes in gender roles in the household and communities? a. To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? b. To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? c. To what extent did the intervention lead to sustained leadership opportunities for women? To what extent did the intervention promote sustained female-headed household involvement in community decision making? d. To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities?	In-depth, one-on-one interviews with female and male participants, including female heads of household; focus group discussions with program participants; key informant interviews with community leaders	Women's participation in community meetings; women's self-reports on division of labor and decision-making authority within a household

Table III.1. ***(continued)***

Evaluation questions	Data sources	Outcomes
Evaluation Questions on Stakeholders' Perceptions of the Sustainability of Grant Activities		
4. What are stakeholders' perceptions of the sustainability of grant activities targeting: a. Improved land management? b. Social and gender barriers? c. Factors driving beneficiaries to continue to adopt SLM practices?	Key informant interviews with community leaders; one-on-one interviews with female and male participants, including female heads of household; focus group discussions with program participants	
ENRM and SGEF grant facility evaluation		
Evaluation Questions on Achievement of Grant Facility Objectives		
1. Which of the following objectives from the grant facility manual were and were not achieved by the grant facility, and why? a. Maintain ecological integrity of landscapes. b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation. c. Allow beneficiaries to innovate and implement technologies that have proved to reduce soil erosion. d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power). e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges. f. Address the social and gender disparities in the Shire River Basin. g. Improve participation of both men and women in the implementation of ENRM activities.	Key informant interviews with former MCA-Malawi M&E staff and MCC DC staff	

C. Methodology

In this section, we detail the methodology used for each evaluation, including data collection, data processing, and our analysis approach.

1. Data collection and processing

The primary qualitative data gathered for the individual grants included KIIs, FGDs, and direct observations within grant communities. The data for the grant facility evaluation were gathered through KIIs. In Table III.2, we provide details on the source of the data, the data collection method used, number of interviews or observations conducted, the sample, and the criteria for selection. We chose which qualitative data collection method to use based on the type of respondent and type of information we wanted to gather. We chose to conduct KIIs for in-depth discussions on activities, participants' experiences and perceptions, and discussions around sensitive topics. We used FGDs to spur discussions as well as convergent and divergent ideas among respondents. We conducted direct observations of outputs and outcomes of program activities to verify information, solidify our understandings of scale and scope, and aid our interpretation of interview data. Observations also provided opportunities to ask follow-up clarifying questions and further contextual findings from other data collected. We determined the number of observations, FGDs, and KIIs to conduct based on our experience at interim regarding the

amount of data needed to reach thematic saturation around our evaluation questions—that is, we wanted a sufficient number of interviews per case study to have elicited all the main themes in the sample frame, and to discover any of the relationships between themes regarding adoption and sustainability without unduly burdening respondents.

For the case studies, we developed semi-structured interview protocols and FGD guides for each type of respondent and mapped them to the evaluation questions. The guides were designed to elicit participants' experiences with continuing (or not continuing) to adopt grant activities, their perceptions of the activities' sustainability going forward, as well as the factors that affect adoption and sustainability. Given the number of evaluation questions we sought to answer, some protocols were lengthy. Therefore, for two types of interviews—community leader KIIs and participant FGDs—we created two versions of the protocols. Each version emphasized questions on either ENRM activities or SGEF activities, based on what type of grant activities the respondents were more involved with. For example, for participants who were more focused on ENRM activities, more questions were asked on ENRM activities and fewer questions were asked on SGEF activities. Guides for outcome observations were designed to collect descriptions and photos of the visual evidence of the success or lack of success of grant activities, which can help in interpreting verbal descriptions and spur further questions. For example, the photo shown here was taken of the solar panels in the irrigation scheme implemented by one grant. Before seeing the panels, we did not have a sense of their size and height, and questions regarding access to the panels for repair occurred to us. We monitored data collection for each case to ensure the quality and content of the data would be sufficient to answer each evaluation question.

For the grant facility evaluation, we developed a semi-structured protocol for the KIIs. This guide was designed to elicit participants' reflections on whether the objectives of the grant facility had been accomplished and why or why not.

Staff from Mathematica's data collection partner in Malawi, Kadale Consultants, translated the protocols into Chichewa and Yao. The Kadale team conducted observations, KIIs, and FGDs with grantee staff and grant participants in July and August 2021, three years after the end of the Compact. Each interview was conducted in the respondent's preferred language. Mathematica staff collected the primary qualitative data from former MCA-Malawi and MCC staff in late 2021 and early 2022.

The teams audio-recorded all interviews, which Kadale's team transcribed. For interviews conducted in Chichewa and Yao, Kadale transcription staff simultaneously translated and transcribed the interviews into English. Kadale supervisory staff reviewed the transcripts for fidelity to the audio recordings during quality assurance. When the transcripts were complete, interviewers cleaned[6] them to make them clearer

[6] Qualitative transcript cleaning refers to the process of getting rid of typographical errors, adding punctuation as needed for clarity, fixing translations so they are clear in the target language, adding field notes taken during the interview in brackets for context, writing out acronyms and abbreviations, and adding names and titles in brackets where pronouns are used so that coded data excerpted from transcripts retain meaning.

and more comprehensive, and then Kadale managers reviewed them again for completeness and clarity before finalization.

2. Analysis approach

For the grant evaluations, Mathematica created a codebook based on the program theories of change and logic models, and the evaluation questions. We coded the interview transcripts in NVivo using both pre-determined and emergent codes.

A variety of qualitative analysis methods were applied to answer each type of evaluation question.

Evaluation question on grant implementation. Only the Foundation for Irrigation and Sustainable Development (FISD) grant case study included a focus on implementation, as FISD uniquely had implementation that continued after the interim evaluation. To understand whether and how well institutional arrangements were put in place by FISD to operate the grant-implemented solar irrigation scheme, we analyzed data from KIIs and FGDs with former MCA-Malawi M&E staff, MCC staff, grant program staff, and program participants. Using an analytical framework, we identified institutional arrangements and how they helped or hindered in achieving program outcomes in the operation of the solar irrigation scheme, productivity, and access to irrigated land. For each institutional arrangement, we looked at power, capacity, motivation, resources, and linkages to assess how the institutional arrangements were implemented and how they helped different stakeholders achieve program outputs and outcomes. We also triangulated the data to cross-check results between interviews with former grant program staff, participants, MCC and former MCA-Malawi staff, grant reports, MCA internal evaluations, and direct observation.

Evaluation questions on conservation agriculture (CA) and land management practices and on gender roles in the household and communities. To assess participants' continued adoption of land management practices and changes in gender roles, we used a coding scheme we created, which has a hierarchy of conceptual categories and classifications linked to the evaluation questions. For example, to examine which ENRM practices were still practiced, we coded responses related to practices initially adopted, how widespread the adoption was, and whether these practices were continued, expanded, or unused within the last three years. To understand why adoption of interventions was sustained or not sustained, we then coded categories for types of benefits, characteristics of practices, barriers to adoption, and differences in adoption by gender. Subsequently, we conducted thematic analysis to help us identify convergent and divergent perspectives across interviews. Data triangulation was also used to test for consistency and discrepancies in findings across multiple data sources, such as FGDs with activity participants, grant reports, KIIs with community leaders, and observation data.

Evaluation questions on stakeholders' perceptions of the sustainability of grant activities. To evaluate the perceptions of sustainability of grant activities, we coded responses from interviews with grant participants and other stakeholders in terms of barriers or facilitators on a common set of sustainability dimensions. We examined, for instance, stakeholders' commitment to ENRM practices and addressing social and gender barriers, the resources available to maintain activity outcomes, the benefits participants report from activities, and political support for continuing to achieve activity outcomes. We examined stakeholders' reports of how well ENRM practices and changes in gender norms associated with the SGEF activities were being maintained and spreading to non-program participants three years after the end of the compact as well. Using a sustainability framework, we identified factors that support or hinder sustainability.

In addition to analyzing each case study individually, **to answer evaluation questions regarding CA and land management practices, gender roles, and perceptions of sustainability, we conducted a cross-case comparative analysis.** This was used to compare and contrast results from each case study and yield broader learning on factors that affected sustained adoption of land management practices and SGEF outcomes. Common barriers and facilitators to the sustainability of the activities into the future were also assessed.

Evaluation questions on the achievement of grant facility objectives. For our performance evaluation to assess which objectives the grant facility did or did not achieve and why, we conducted thematic framing to uncover patterns, themes, and issues in the qualitative data in order to identify common and conflicting viewpoints across interviews and data sources. We employed data triangulation by cross-checking grant monitoring data, grant reports, internal MCA-Malawi grant evaluations, and MCC and former MCA staff interviews. As part of the analysis, data collected for the grant case studies also provided rich evidence and perspective.

D. Study sample

This section describes the sample used for the individual grant evaluations and the grant facility evaluation. We discuss the process we used to select the grants, followed by our individual sampling plan and sample overview table.

1. Selecting grants for case studies

For the final evaluation, we selected the same grants chosen for our interim evaluation: Catholic Commission for Justice and Peace (CCJP), Foundation for Irrigation and Sustainable Development (FISD), Training Support for Partners (TSP), United Purpose (UP), and the Women's Legal Resources Centre (WOLREC). These grants were chosen in part because MCA-Malawi considered them all to be relatively well implemented, given a key objective for this analysis was to inform MCC, the Government of Malawi, other aid agencies and NGOs, and the environmental trust on effective approaches. They were also geographically dispersed, used distinct approaches, had different mixtures of ENRM and SGEF activities, and were implemented by grantees with the largest intervention presence in a given catchment area. A detailed description of the careful process used to select these five grants can be found in our interim evaluation report, along with details on which selection criteria each grant met, and the various activities each grant implemented (Velyvis et al. 2019).

2. Sampling plan

Malawi is administratively organized by district (largest), Traditional Authority (TA), group village head (GVH), and village (smallest). Each grantee covered a wide range of GVHs and villages; we therefore concentrated interviews within small geographic areas and conducted KIIs and FGDs within two GVHs per grantee. Using information provided by each grantee, we purposively sampled GVHs that had the best-executed programming, the most engaged participants, and received the largest number of grant activities.[7] By using this best-case scenario approach, we were able to assess what types of activities can and cannot work under real conditions, and why. Within sampled villages, we purposely conducted all interviews with village members who actively participated in grant interventions. These engaged participants were identified

[7] We identified well-executed implementations based on implementers' reports of places where implementation was either done as planned or was improved on, and we avoided places where implementation was not conducted according to design. Implementers also nominated GVHs that (according to subjective judgments) had the most enthusiastic, helpful, interested participants, engaged residents, and strong partnerships.

from discussions with GVH leaders, grantees, and other grant participants. Community leaders were selected if they had a strong influence in the community, as determined by community members and grant activity staff we spoke to. In Table III.2, we provide an overview of our sample, including each data source, data collection method, number of interviews, and sampling criteria.

Table III.2. Sample overview

Data source	Data collection method	Number	Sample and criteria for identifying and selecting sample
Grantee staff	Key informant interviews	2 total[a]	• Staff who had implemented FISD activities and managed the grant with MCA-Malawi, including one staff member who directed the ENRM grant activities and one who oversaw SGEF activities. • We identified respondents by soliciting information from the grant organization and reviewing the grant contact list provided by MCA-Malawi, then selecting respondents who were still available in the area and who knew the most about how activities were implemented.
Community leaders in intervention area	Key informant interviews	22 (4–5 per case)	• One or two GVH leaders (per case) based on their participation in the grant activities and influence in the community. • Two or three other community leaders (per case) such as REFLECT circle facilitators, village savings and loan agents, lead farmers, and other influential members of the community who had been involved with the grant activities.
Grant participants	Focus groups	25 (5 focus groups per case, 6 to 12 people per group)	• Focus groups included community members who actively participated in the ENRM and SGEF activities. • Some focus groups were women-only, some men-only, and some included both men and women.
Female SGEF participants and husbands	Key informant interviews	30 (6 per case)	• Three female community members who had been active in SGEF activities (per case) were chosen for interview. • Three men (per case) who participated in grant activities and are married to female participants; the men had a mix of characteristics such as age, length of marriage, and involvement in grant activities. • Not all men were married to the women we interviewed, as some of the selected women were single.
Community observations	Direct observation	10 (2 per case)	• Each observation was in a separate village, led by a grant program participant in either ENRM or SGEF activities. Evidence of outputs and outcomes of program activities—both successful and less successful—were observed, photographed, and documented in an observation guide. • Program participants were identified to guide observations through reaching out to village development committees, community leaders, focus group members, etc.

Table III.2. ***(continued)***

Data source	Data collection method	Number	Sample and criteria for identifying and selecting sample
Former MCA-Malawi M&E staff	Key informant interview	2	• Former staff from MCA-Malawi monitoring and evaluation team (interviewed twice).
MCC DC staff	Key informant interviews	4	• Staff who oversaw the implementation of the Malawi Compact (interviewed 4 times).
Grant documentation	Document review	All available documents	• Grant quarterly and final reports, internal MCA-Malawi grant evaluations, and indicator tracking tables.

[a] Grantee staff were only interviewed for the FISD case study, which was the only grant for which we still needed implementation information during the final evaluation.

ENRM = environmental and natural resource management; FISD = Foundation for Irrigation and Sustainable Development; GVH = group village head; MCA = Millennium Challenge Account; REFLECT = Regenerated Freirean Literacy Through Empowering Community Techniques; SGEF = Social and Gender Enhancement Fund; VSL = village savings and loan.

E. Timeframe

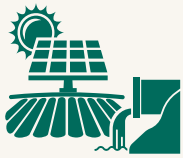
Data collection for the final evaluation occurred in 2021. Initially, final data collection was planned for 2020—two years following the close of the compact—to be able observe how stakeholders' perceptions, attitudes, and behaviors around equitable gender norms as well as the adoption of sustainable land management practices evolved and were sustained. The two-year period from compact close was also chosen to allow for at least two full cycles of the agricultural calendar post-compact to better observe longer-term outcomes of improved land management practices, such as tree survival and soil structure. Due to COVID-19, final data collection was delayed an additional year to 2021.

In the rest of this report, we start by presenting the findings from the first grant evaluation question regarding implementation in the FISD case study. The report continues with the cross-case comparison, which provides broad findings on the remaining grant evaluation questions based on data from all five grant case studies. The cross-case comparison begins by examining the extent to which ENRM activities have been sustained and the factors that have hindered or supported sustained adoption. We follow this with an analogous analysis of sustained changes in gender roles and SGEF activities. We conclude with an analysis of perceptions for activity sustainability. Our final findings chapter assesses whether the grant facility achieved its objectives. The detailed findings from each case study can be found in Appendices B–F. All quotes cited are followed by a code giving the type of interview and gender of the respondent, along with a unique number by case, to aid confirmability of the research, a criterion of validity in qualitative research.[8]

[8] The following codes are used to identify the type of respondent being quoted: GS = grant program staff; CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; O = observation; F = female; M = male. Numbers differentiate each unique interviewee within a case study.

IV. FINDINGS ON FISD IMPLEMENTATION

Summary of findings on FISD implementation



- The water user association (WUA) continues to implement fair water sharing and access.
- The following factors have limited the WUA's overall success:
  - Water pumps breaking and the lack of capacity to fix them, relying on FISD to return to the communities for maintenance
  - Landowners with significant power over newly irrigated land, including the ability to determine the price at which others can access it
  - The inability to enforce land agreements, creating a risky system for renters
- Those with access to newly irrigated land have been able to add a second harvest per year and diversify their crops. Their success has increased demand for irrigated land, and thereby increased its price, to landowners' benefit.
- Land agreements with terms that are hard to enforce, and high rental prices have driven off some participants and prevented the poorest from taking part.
- FISD remained involved in the communities and provided maintenance for the irrigation scheme. It is now expanding its activities through the following activities:
  - Creating a paid contract with farmers for repair and maintenance of the irrigation scheme
  - Selling a crop insurance scheme
  - Planning to expand the irrigation scheme and include more farmers
- The FISD management was arrested for stealing money from a Government of Malawi program, and the future of FISD is in question. Therefore, there is some concern regarding the long-term sustainability of FISD interventions and the irrigation scheme due to their dependence on FISD's support.

Overall, the institutional structures put in place operate well enough to enable those with access to irrigated land to succeed. However, the institutional structures overseeing the scheme lack the capacity and power to ensure that it functions optimally and skew benefits toward those already better off. The reliance on FISD for repair and maintenance of the physical infrastructure also leaves the sustainability of the scheme vulnerable.

The Foundation for Irrigation and Sustainable Development (FISD) is a Malawian nongovernmental organization that received a grant from Millennium Challenge Account-Malawi to improve land management in the Lunzu-Linjidzi catchment area of the Blantyre district from 2015 to 2018. FISD's grant was unique in that it introduced a solar-powered irrigation scheme in addition to grant activities focused on conservation agriculture and sustainable land management techniques, alternative economic activities, and Social and Gender Enhancement Fund (SGEF) Activities. At the end of the Millennium Challenge Corporation compact, much of the land connected to the irrigation scheme remained idle. FISD struggled to set up the legal frameworks and institutional structures necessary for the activity's long-term success. Therefore, as part of the final evaluation, we revisit an evaluation question regarding implementation for the FISD case study alone to assess whether the necessary institutional structures

related to their solar irrigation and water use agreements had been put in place for farmers to embrace the scheme and cultivate the land longer term. Our findings suggest the institutional structures put in place operate well enough to enable those with access to irrigated land to succeed. In irrigated plots with functioning pumps, the solar irrigation scheme has been successful; participants report harvesting twice per year and diversifying crops. However, the institutional structures overseeing the scheme lack the capacity and power to ensure that it functions optimally and skew benefits toward those already better off. The reliance on FISD for repair and maintenance of the physical infrastructure also leaves the sustainability of the scheme vulnerable.

How did the institutional arrangements put in place by the grantees evolve over time? (EQ 1.)[9]

Three main institutional structures shape the use of the solar irrigation scheme implemented by FISD: (1) the water user association (WUA), (2) the land agreements they help negotiate, and (3) FISD. Each played a role in the success or lack of success of the irrigation scheme.

A. Current status of the solar irrigation scheme

FISD's completion of the irrigation scheme to service the planned 60 hectares is contested. FISD acknowledged at interim that it did not manage to build all the irrigation infrastructure it had planned, and that pumps were placed in easier to access areas, with around 50 percent of the 60 hectares of allocated land left without access to irrigation. Three years later, a handful of respondents reported the irrigation scheme was complete and fully functional. A FISD program officer reported the construction of the irrigation infrastructure was finished and servicing all 60 hectares as promised. One community leader noted, "That work is done, and farmers are using it." (CL_M1)[10] However, many respondents disputed that the irrigation scheme was operational on the full 60 hectares. Participants reported only up to 35 hectares are functionally irrigated; the remainder of the land was said to be "bush," without farming or a serviced water supply due to incomplete or ineffective irrigation infrastructure. Farmers described an incorrectly constructed canal system with pumps that cannot channel water to two of the five "blocks" in the dry season, leaving those parcels unusable outside of the rainy season. Those whose farms the irrigation pumps do not reach reported that land continues to dry out in harsh conditions and much land in the scheme remains without water. Here, participants continue to face the same uncertain yields they faced before FISD arrived. One focus group participant summed up the responses of many who stated the construction was incomplete in their areas: "They did not bring the solar pumps here." (FG_M15)

The irrigation scheme is not serving the 600 people it was meant to serve—on 0.1 hectare each. Perhaps reflecting the smaller size of the area irrigated, the most generous estimate, from a FISD program officer, suggested that 420 farmers were active on the scheme, but when the pumps broke down, this number dropped to around 300. A farmer in one of the villages where the irrigation scheme was implemented estimated 275 farmers were using the allocated land, while focus group members reported only 100 people were currently farming the irrigated land, because two pumps were nonoperational at the

[9] Numbers listed after evaluation questions refer to which evaluation question is being answered. See Table III.1 for a full list of final evaluation questions.

[10] The following codes are used to identify the type of respondent quoted: GS = grant program staff; CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; O = observation; F = female; M = male. Numbers differentiate each unique interviewee within the case.

time. Some farmers have tried to rent land but have been unable to find space in the irrigation scheme, further suggesting the full 60 hectares are not irrigated.

B. WUA and access to water

A WUA was created to oversee water use and sharing within the solar irrigation scheme constructed by FISD. The WUA committee comprises landowners and renters elected from villages across the catchment area served by the irrigation scheme. The committee was created to act as a bridge between the landowners and land users. It oversees the solar irrigation scheme, the distribution of the irrigated land to members, and the collection of membership and rental fees from users. It also helps enact agreements for water use and tries to negotiate land costs with landowners.

Three years after the end of the grant, the WUA continues to implement fair water sharing and access. Several project participants report that the WUA has been successful implementing a daily usage schedule that gives equitable access to water across the blocks of the irrigation scheme. It makes acceptable oversight decisions, such as determining the rationing of the water, so that farming can continue. Participants also reported the WUA has settled disputes regarding water use or misuse, such as when water users ignore the schedule or misuse water, flooding other users' land. Finally, it has been a valuable point of contact with FISD to maintain and repair broken pumps.

> **"There are good procedures that allow farmers to water the crops according to how they were tasked, in harmony without any problem."**
>
> ***(FG_M15)***

The WUA committee does not have the knowledge or skills to maintain or repair irrigation equipment. Therefore, it has been unable to ensure water access when pumps are broken. At the end of the grant in 2018, the WUA and the farmers using the irrigation scheme were left without the capacity or equipment to maintain or repair the solar irrigation equipment and are unable to ensure access to water for the users without aid. This limits their effectiveness, was a lost capacity development opportunity, and leaves them dependent on FISD when the pumps malfunction, which according to farmers, is often. Until mid-2021, FISD provided repairs and maintenance at no charge. Pump maintenance was a contentious point. One community leader reported regular check-ins with FISD maintenance staff, who they said helped solve water problems. This finding was supported by two FISD program officers, who noted successful communication and collaboration with participants to repair broken solar pumps. These accounts conflicted with reports from participants who recounted incidents where pumps were left unmaintained, and when damaged, left unusable for long periods. Other participants reported that pump houses were left neglected, without doors or lighting, and water pipes were left without valves to control flow. A focus group participant stated, "Let's just say that they abandoned the project, leaving us in the air." (FG_M1)

The number of functional pumps varies. The irrigation scheme was designed with three functioning pumps. However, most respondents reported that the pumps were incomplete, insufficient, neglected, or in disrepair. In one of the villages where the irrigation scheme was implemented, multiple participants reported that the solar pumps had not worked well, breaking on several occasions and leaving farmers with one to share across all irrigated land. The data collection team observed in July 2021 that two pumps were broken, and that one pump could serve only 15 to 20 hectares. In August 2021, a FISD program officer reported in an interview, "All the three pumps now are running. I was there on Friday last week." (GS_F1) However, everyone agrees the irrigation system has needed repairs many times since the grant ended.

Photo: Water pump house and solar panels

C. Land agreements and access to land

In the three years since the end of the grant, landowners have maintained overarching control over the land. When the irrigation scheme was implemented, the land that was to be irrigated was owned. Deciding against a resettlement effort, FISD thus needed landowners to agree to irrigate their land and to allow the land to be rented to others to farm. The WUA committee was not originally planned for but was set up and charged with overseeing the distribution of the irrigated land, enacting agreements for water use, negotiating land costs with landowners, and collecting rent and membership fees from users to split between landowners and the WUA for maintenance and operations. A few interviewees reported that the WUA committee was doing its job well. One noted, "There are no disagreements, and the committee is making agreements between the landowners and the farmers who have rented." (FG_M16) But most participants agree that there is a power imbalance between the WUA and the landowners that leaves the WUA weakly positioned to negotiate. Participants often reported that landowners have the last say on land distribution, and some participants went so far as to say the WUA is often helpless if landowners act out (for example, by raising prices or evicting tenants from irrigated land). Interviewees reported that in one instance, landowners took it upon themselves to collect rent from users and refused to turn the money over to the WUA committee. Unable to negotiate the collection of WUA membership fees from the landowners, the WUA asked users to pay the WUA for the operation fees to continue to receive water in their plots. This resulted in confusion among participants and the perception—if not the fact—that farmers had had to pay twice. An MCC respondent noted that FISD did not have expertise in WUAs and wanted the WUA to take on everything from seeds to water to land leasing to marketing, which he noted a weak, poorly supported WUA would not be able to do well. His strong suggestion for similar efforts in the future would be to conduct upfront work to establish a WUA and institutional arrangements before implementation of irrigation infrastructure.

> **"There were some power struggles between the landowners and members of the committee. This affected the operations of the scheme."**
>
> ***(FG_M6)***

An implication of the power imbalance between the WUA and landowners has been that landowners have increased the price of cultivation beyond the reach of poorer farmers. With the grant's investment in the land, the farmers with access to solar irrigated land have benefited greatly, able to cultivate a second harvest each year and expand production to new crops, including rice. These farmers report that the intervention has improved their lives, enabling them to harvest beyond subsistence and sell surplus produce. As a result of this success, demand for irrigated land has increased. Farmers from outside communities and nearby cities, such as Zomba, have put additional pressure on land rents, because wealthier urban citizens are able to offer landowners higher prices, using the irrigated land to cash crop. With landowners holding power over access to the irrigated land, this has likely played a part in the inflation in rental prices. Now high rental prices charged by landowners to access the solar irrigated plots mean the poorest farmers are unable to afford to participate. Participants reported questioning whether the landowners benefit more from the intervention than the farmers the scheme was meant for. The WUA has made numerous efforts to resolve this issue, but landowners retain the ability to set rents, and prices remain relatively high. Despite the high costs, many farmers still believe that the money they invest is worth it. During a site visit, a farmer told the evaluation data collection team, "We don't mind that it is painful, that the money seems a lot for poor people like us, but we have still agreed to this, because the farming here, at the scheme, is really improving our daily lives." (O_M1)

"The only problem has been that those who had the desire to start farming at the scheme feel that the rental fee is too high, and they cannot afford it." ***(FG_M4)***

A lack of enforced land agreements has led to a system fraught with unknowns. Relationships between users and landowners have been key drivers in the successes and failures of the solar irrigation scheme. Overall, relationships were seen as poor, and trust was at a premium, with tenants seeming to believe that landowners were not beholden to anyone but themselves. Landowners reportedly allotted prime land to more than one participant at a time, receiving payment from both and causing disputes between farmers. Further, interviewees noted that landowners sometimes did not provide the full hectarage of land they had agreed to, providing one-third to one-half of the pre-arranged surface area. Some landowners charged changeable rental rates, and some abandoned land agreements entirely. Some participants reported that they feared landowners would push them off their plots and prevent them from harvesting what they had invested time and money to grow, and traditional authorities were unable to overrule landowners to help. As a result, some participants gave up on the project, unwilling to continue to risk losing money, inputs, time, and effort.

D. FISD's continuing involvement

Since the end of the grant period, FISD has remained an essential institution in the functioning of the solar irrigation scheme. It appears they will remain involved, at least in the near term. Perhaps due to the poor record of pump maintenance farmers have reported, farmers in one of the villages where the irrigation scheme was implemented noted that they had recently contracted FISD for the maintenance of solar pumps and the supply of water for 25,000 kwacha (about $30.00) per 0.1 hectare per growing season. Formalizing this relationship could improve the maintenance and repair of the irrigation equipment, although it is unclear how the cost will affect farmers, as it is unclear how this will affect the membership fees users pay to the WUA in part for maintenance. FISD program staff also reported planning to seek funding to expand the irrigation scheme and to prepare a second intake of farmers to increase the numbers farming solar-irrigated land. In addition, interviewees in both of the villages where data were collected and the irrigation scheme was implemented reported that FISD began collecting payments for crop insurance after the end of the grant. This was an opt-in insurance scheme organized through the World Food Program and supplied by NICO General, the leading short-term insurer in Malawi. FISD is the face of the scheme in the communities. However, the FISD management was arrested for stealing money from a Government of Malawi program in 2020. The future of FISD remains in question, and therefore there is some concern about the long-term sustainability of the solar-irrigation scheme, given the dependence of the irrigation scheme on FISD's support.

> **"Due to the problem that we had due to the breakdown of our pumps, our friends who initiated this project from FISD, now told us that it would not be possible for them to be repairing the machines for free anymore. From that time onwards, if we wanted any repairs for the machines, we would have to pay a water fee of MK25,000 per 0.1 hectare of land."**
>
> ***(FG_M1)***

E. Summary

The institutional arrangements FISD created to support the solar irrigation infrastructure appear to be enabling what land is irrigated to be used to great effect. Farmers with access to irrigated land appear to have increased productivity and might have improved food security and increased household incomes through selling produce. However, flaws in the institutional arrangements have led to suboptimal use of the infrastructure. Organizations undertaking similar projects might consider upfront work on establishing a WUA and working through institutional arrangements before building infrastructure. Construction shortcomings and the lack of maintenance capacity-building have reduced the number of irrigated hectares available and thus the number of farmers who can participate. The imbalance of power between landowners and the WUA and renters mean the benefits of the scheme escape the poorest and most vulnerable. The WUA's inability to enforce land agreements has created a risky system for renters and one that benefits landowners far more than envisioned. However, solar irrigation has clear benefits for productivity, and despite any missteps, the communities and FISD are both continuing to engage in this endeavor. The dependence of the irrigation scheme on FISD's support however has left the long-term sustainability of the scheme in question. As the future of FISD has been put into question due to legal problems, the scheme's future is put in jeopardy.

V. FINDINGS FROM THE COMPARATIVE CASE ANALYSIS

A comparative case analysis enables us to draw broad conclusions about which types of grantee-implemented activities have been sustained and could be sustained in the future. This evaluation examines best-case scenarios. For the five case studies in this evaluation, we collected data from villages with strong partnerships, where activities were well-implemented and community members were engaged. The cross-case analysis in this chapter compares outcomes across the five case studies and illustrates common themes, revealing both effective and ineffective interventions. We also identify divergent themes that can help us identify the factors that support or hinder success. Appendices B–F include detailed analyses of each of the five case studies.

We compare the case studies by examining findings for three main topics: (1) ENRM activities, focusing on sustained adoption and outcomes from conservation agriculture (CA) and land management interventions; (2) SGEF activities, focusing on changes in behaviors and attitudes related to gender roles in the community and sustained adoption of income-generating activities (IGA) started during the grants; and (3) sustainability through stakeholder perceptions of whether grant activity practices and outcomes will be maintained, expanded, or diminished in the future. The evaluation questions answered in this chapter can be found in Table III.1.

A. Summary of activities implemented

The five grants examined in the case studies are examples of the 11 grants MCA-Malawi funded through the grant facility. Two of the five (UP[11] and FISD) initially emphasized ENRM activities; two others (CCJP and WOLREC) initially focused on SGEF activities; and the last (TSP) focused on both from the beginning. Whatever the initial focus, the activities the five grantees implemented were chosen from a relatively small set, and there was considerable overlap across grants (Table V.1). Despite the initial differences, all five case studies included ENRM activities focused on soil conservation, land management, tree planting, and forest management. All grants also had IGAs. For SGEF activities, all five grants used REFLECT circles, provided trainings to sensitize community members on gender equity, and got community members started in and/or trained them on managing VSLs and pursuing adult literacy. The common elements of the grant interventions and common underlying program logic enable us to look across all five grants and develop cross-cutting conclusions.

Table V.1. Activities implemented by grants

	TSP	UP	FISD	CCJP	WOLREC
Mobilize community and promote participation in the ENRM decision making	X	X	X	X	X
Provide trainings on SLM practices, including planting trees, vetiver grass, and elephant grass, and other SLM practices	X	X	X	X	X
Develop and enforce ENRM action plans and bylaws	X	X		X	X
Establish beekeeping activities	X	X		X	X
Sensitize community members on gender equality	X	X	X	X	X
Empower women through leadership training	X	X	X	X	X
Provide adult literacy classes and trainings on business management	X	X	X	X	X
Establish REFLECT circles	X	X	X	X	X
Establish VSL groups	X	X	X	X	X

SLM = sustainable land management; VSL = village savings and loans.

[11] Seventy percent of UP's budget was for ENRM activities and 30 percent was for SGEF activities.

Summary of key findings

Findings on conservation agriculture and land management practices

- ENRM grant interventions led to widely sustained adoption of many conservation agriculture (CA) and sustainable land management (SLM) practices among project participants.
- Spillover of CA and SLM practices in neighboring and participating villages was reported for the majority of the most widely sustained practices.
- Three years after the end of the grants, the four most widely sustained land management practices were contour farming practices, tree planting, making and using manure compost, and mulching.
- Women remain on the forefront of sustained adoption of CA and SLM practices.
- Project participants who continued to adopt CA and SLM practices did so mainly because they experienced financial and environmental benefits.

Findings on changes in gender roles in the household and communities and income-generating activities

- SGEF interventions resulted in widely sustained changes in gender roles in households and communities three years after the end of the grants.
- Increased leadership opportunities for women was the most widely sustained change and had the most spillover among nonparticipants in neighboring villages.
- Participants were motivated to sustain shifts in gender roles by the benefits they experienced, such as fewer arguments between spouses, spending that improves family well-being, and investments in farm production. The ability to sustain changes in gender roles is supported by the economic, leadership, and human capital changes resulting from the projects.
- Spillover among nonparticipants was reported for most key activities and changes in gender roles inside participating villages and in neighboring villages.
- VSLs remained the most popular grant-promoted activity; they are widely sustained, and their use continues to expand among participants and nonparticipants.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Most participants were confident in the longer-term sustainability of CA and SLM activities.
- The grant-promoted activity most likely to be sustained in the long term is the VSL, which remains popular and is expanding.
- Respondents in all five cases thought most of the gender-role changes in households and communities would be sustained into the future.
- Benefits such as increased yields, income, and ability to attend to household well-being are main contributors to sustainability for all maintained activities.
- Encouragement from local government agencies, local leaders, and trained community members supports sustainability of both types of activities.

This cross-case analysis is part of the final evaluation of MCC's ENRM Project. It updates findings from the 2018 interim evaluation and assesses the evolution, sustainability, and effects of the grant activities. The results are derived from data collected from five of the funded grants. In each grant, group village heads (GVHs) were selected for data collection where grantees reported implementation was among the strongest and most complete, and the participants most engaged. Focusing on the best implementation of activities enabled us to assess the potential of the grants—that is, to learn under optimal conditions what types of activities work and don't work, and why. Data collected in mid-2021 consisted of key informant interviews (KIIs), focus group discussions (FGDs), and community observations.

We found that in the three years since the grants ended, participants in the intervention villages we followed have widely sustained adoption of many of the ENRM activities implemented, with contour farming and tree planting being the most popular. SGEF activities, especially VSLs, facilitated changes in gender roles, increasing women's involvement in decision making within households and communities and increasing the number of women in leadership positions. Women remain at the forefront of sustaining most SGEF- and ENRM-promoted activities as leaders and participants. The main reasons project participants gave for continued adoption of ENRM-promoted activities and the changes brought about by SGEF activities were the visible benefits to economic, environmental, and household well-being they experienced. Most stakeholders feel confident that these activities and their effects will be sustained in the future. Our assessment of how well the grants' outcomes match the program logic shows the interventions have led to the expected short-term and long-term outcomes, but the grants were too small to find evidence of the longer run outcomes of reduced siltation and weed infestation (the project objective), increased efficiency of hydropower generation, and reduced poverty (the compact goal). Scale-up of these interventions would be required to determine whether some of the longer-run outcomes and goals could be met.

This chapter is organized by evaluation question, and most evaluation questions have several parts. The question being answered is highlighted in green at the beginning of each section. A full list of evaluation questions can be found in Table III.1. The final findings section in this chapter focuses on our assessment of how the logic model for the grants held up.

B. Findings on conservation agriculture and land management practices

In this section, we examine the sustained adoption of CA and land management practices, including which practices were more readily sustained, to what extent, and why. We also explore whether farmers were able to apply these practices appropriately since the end of the grant, and differences in sustained adoption by gender. We find that in the three years since the grants ended, motivated by the benefits of these practices, participants have sustained many of the CA and SLM practices. ENRM activities such as contour farming, tree planting, manure compost making, and mulching were among the most widely sustained, and spillover of most of these practices has been reported among non-project participants in project and neighboring villages. Women remain at the forefront of sustaining most ENRM activities.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? (EQ 2 [Part 1][12])

KII and FG participants were asked about the practices they had adopted and sustained, how, and why. FG participants were also asked about the sustained adoption or lack of adoption of practices by other project participants. Information on spillovers was also collected in this way. Observations of activity sites and outcomes were conducted in each village to confirm and clarify information. Based on these interviews and observations, we determined the extent to which interventions were sustained by farmers and communities.

Data from the selected GVHs in all five grant case studies indicate that the ENRM grant interventions led to widely sustained adoption of many CA and land management practices among project participants.[13] There was also evidence in all five cases of spillover effects of some practices to nonparticipants in the same or other villages who began adopting the practices after seeing the benefits experienced by participants, especially increased yields. This indicates that many of these interventions in the Shire River Basin hold promise when they are well-implemented, and the target population is willing and able to engage.

Table V.2 summarizes the extent to which adoption of the practices and activities was sustained three years after the close of the grants across all five case studies.

Table V.2. Sustained adoption of CA and land management practices

Practice / activities	Sustained adoption	Spillover[a]
Contour farming practices (ridge alignment, etc.) across slopes	●●●●●	++++
Tree planting	●●●●◐	++++
Making manure compost	●●●●	+++
Mulching	●●●◐	
Planting one seed per station to reduce competition between plants	●●●●	+++
Forest management / natural conservation / clearing brush and making firebreaks	●●●◐	++
Swales for watershed management using trenches to capture water on slopes	●●●	+
Vetiver grass, a drought and fire-resistant soil stabilization and erosion control remedy with wide-ranging other uses	●●●◐	++
Establishing woodlots	●●	+
Early maturing seeds, which increase the environments where and timing when crops can be grown	●	
Crop diversification	●●	
Crop rotation	●●	
Planting fruit and vegetable gardens	●	

[12] Numbers listed after evaluation questions refer to which evaluation question is being answered.

[13] On average, almost half of all households in the selected villages were beneficiaries of the grants, while the range of beneficiaries per village was one- to two-thirds of all households.

Table V.2. ***(continued)***

Practice / activities	Sustained adoption	Spillover[a]
Gully reclamation to rehabilitate eroded land for cultivation	✓ ⏸	
Check dams built of rocks, branches and grasses across gullies to slow water flow and stop erosion	⏸	

✓ Adoption widely sustained in one case study.

✓ Adoption sustained in one case study.

⏸ Adoption less readily sustained in one case study.

\+ Spillover among nonparticipants in the same village or unsure which villages

⊞ Spillover among nonparticipants in other villages

[a]Because data were not collected outside of project villages, we do not have direct evidence of spillover. Project participants reported spillover. It is not always possible to determine whether nonparticipants reported to have taken up project activities or exhibited changes in gender roles were within the same communities or neighboring ones.

Which land management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2a [Part 1])

Three years after the end of the grants, the four most readily sustained land management practices were contour farming practices, tree planting, making and using manure compost, and mulching. All four were widely sustained in three or more of the five case studies. The most readily sustained practice was contour farming, including ridge (re)alignment, construction of contour bands/ridges, and box ridge construction, which was reported as widely sustained in four of the grant cases and sustained in the last. Tree planting, which was widely sustained in four of the five case studies and less readily sustained in the last, was the second most sustained practice. Making and using manure compost was widely sustained in three grant case studies and sustained in a fourth. There was no mention of the practice in the fifth case study. Finally, mulching was widely sustained in three case studies, and less readily sustained in a fourth. Again, there was no mention of the practice in the fifth case study.

Land management practices that were widely sustained in two case studies were planting one seed per station, forest management, and swale or watershed construction and maintenance. The practice of planting only one seed per station was sustained in two additional case studies. Forest management, including natural conservation, clearing brush, and making firebreaks, was sustained in one additional case and less readily sustained in a fourth. Swales were sustained in a third case study. There are some differences by case in which interventions were introduced, which explains some of the differences in the ranking of these practices and the lack of reports on all practices in all cases, but the above-mentioned practices were reported to be widely sustained in two or more cases.

> **"Those of us [who] have farms along the riverbanks, we are the ones who have planted trees and hence we are the ones who have harvested enough maize."**
>
> ***(CL_M1_CCJP)***

Three other land management practices that were widely sustained in only one case study were vetiver or elephant grass planting, the use of early maturing seeds, and establishing woodlots. Crop diversification and crop rotation were sustained in two case studies each. Other practices were sustained in only one case study or were not readily sustained.

Photo: Vetiver grass in a project village

The two most widely sustained land management practices—contour ridge farming and tree planting—showed evidence of spillover to nonparticipants in the same and neighboring villages in four of the grant cases. The practices of making manure compost and planting only one seed per station had spillover in three cases. For two other practices (vetiver grass planting and forest management) there were spillover effects noted in two case studies each. Two other practices had spillover reported in one case each. Spillover is a second indicator of the extent of sustained adoption of these practices.

The main reason given in all five case studies for the widely sustained adoption of these practices was the personal benefits they provided for users. Benefits included higher yields, increased income from selling extra production, savings from not needing to buy food or inputs, and food security. In addition, in three of the five cases, participants mentioned environmental benefits as reasons that motivated them to sustain the practices, including reduction in erosion and higher water retention in the soil. Encouragement from village chiefs, lead farmers, extension workers, village-level groups or committees, and government policies played a role in supporting these interventions in four of the case studies, while bylaws—some put in place by the grants—provided disincentives to abandon some practices. Other reasons participants gave for sustaining the adoption of these practices included a sense of ownership of the activities, and another NGO coming in to work on similar interventions in one case study.

Two common barriers to continued adoption of CA and SLM practices were reported to be natural hinderances, such as pests and weather, and a lack of understanding regarding the importance of the practices. In four of the five case studies, participants reported pest attacks including armyworms, termites, grazing livestock, and snakes, that destroyed their crops and trees or were nuisances that caused them to discontinue CA or SLM practices. Other natural shocks were drought, flood, and the washing away of crops, which either destroyed activities or pushed farmers to land that grantees discouraged them from cultivating, such as along riverbanks. In three out of four case studies, respondents attributed a lack of adoption or continued adoption to lack of understanding or misinformation. Adopters explained that nonparticipants did not realize the importance of the CA and SLM activities to the environment or to their own ability to sustain or improve productivity. Others said that nonparticipants had misinformation or misunderstood why adopters were experiencing improved yields, believing it was because of inorganic fertilizer instead of contour realignment, for example. Some people misunderstood adopters' incentives, assuming participants were being paid; these people did not adopt the practices, because no one compensated them for doing so. If these misunderstandings are true, lack of knowledge could be an easier barrier to combat.

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2 [Part 2])

Most project participants have had the capacity, resources, and motivation to apply these practices appropriately since the end of the grants. A number of conditions enable farmers to apply land management practices appropriately. Among them are capacity (including knowledge, skill, and labor), resources (inputs, materials, and the like), and motivation (benefits, opportunity costs, competing costs, values, and the like). Discussions about the intervention practices with project participants in the five case studies showed that most participants have the capacity to apply the practices appropriately; they understand how to apply them and have the skills to do so. Only in a minority of cases—usually among older respondents—did participants not have the strength or access to labor to undertake some of the practices. Most project participants have the resources to apply the practices appropriately as well. Few cases reported resources as a problem. Some TSP participants, for example, noted that they lack the materials, such as planting sacks and tools, needed to sow tree seedlings in nurseries. The use of early maturing seeds, which was found useful in UP villages, was discontinued because the price of seeds was too high. Motivation might be the factor that has had the largest impact on whether the project participants applied these practices appropriately since the end of the grants, and most reports show that participants had the motivation to apply the practices appropriately. Most project participants report that they understand the importance of the practices and are motivated by environmental concerns. They also appreciate the benefits of increased yield and better soil that many practices provide. However, for some practices, they considered other conditions in deciding whether and how to apply them. In the UP case study for example, farmers explained that they used mulching when the soil was dry, to retain soil moisture. However, to avoid rot, they did not use mulching when rain was plentiful or even excessive. Mulching is a practice these farmers can apply, but they do it based on whether they perceive it will help their crops, not just the environment. Farmers balance these motivations with most practices. Overall, we did not find many participants who reported applying these practices in a way that was not appropriate or was outside of the way they were taught to apply them during the grants.

Are there differences in sustained adoption between male and female farmers? (EQ 2a [Part 2])

Women remain at the forefront of the activities, are more engaged, play central roles, and have sustained adoption of practices at higher rates than men in all five grants. However, both men and women are involved in and have sustained adoption of the interventions, even if fewer men are engaged in most cases. The grant facility's strong suggestion—or requirement—that all grants focus on empowering female farmers and include women in all activities could point to why women are clearly engaged in these activities and have sustained adoption of practices. Women also might have special motivation to be involved. For example, participants in the CCJP case study reported that more women than men have sustained practices, because women are excited about the opportunities and the chance to be leaders. Others suggested that the activities implemented were more related to the chores and tasks women are traditionally involved in, such as those involving firewood and food. Whatever the reason, grantees continued to try to engage men in the interventions, but women remained at the forefront.

C. Findings on changes in gender roles in the household and communities and income-generating activities

In this section, we use cross-case comparison analysis to look at the extent to which the SGEF interventions have resulted in sustained changes in gender roles in households and communities. We also examine some of the pathways to change. During the interim evaluation, participants reported more joint decision making in households, a more equal division of labor, more leadership opportunities for women, and greater participation in community decision-making by female heads of households. These changes stem from reported shifts in perceptions of gender roles that resulted from SGEF activities (Velyvis et al. 2019). In this evaluation, we look at whether these changes have been sustained, expanded, or discontinued. We also explore the extent to which the interventions have led to spillover effects within participating villages and in neighboring villages. This section also includes results on IGAs, VSLs, and REFLECT circles. Although these findings do not respond to specific evaluation questions, they are important components of the grantees' theory of change and have played an important part in the outcomes that have emerged.

Overall, we have found a sustained acceptance of new gender norms and changes in gender roles three years after the end of the projects. These changes have been motivated by the positive benefits participants have experienced from these changes, and shaped by the economic, leadership, and human capital changes resulting from the projects. In addition, changes have been shaped by education provided by the projects and encouragement from project and local leaders. The case studies we chose might be exceptional, given they were selected as examples of best cases. However, they demonstrate the success these types of interventions can have.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3)

Three years after the end of the grants, data from the five case studies indicate that the SGEF grant interventions resulted in changes in numerous gender roles that were widely sustained in three or more case studies. These changes included increased joint decision making in households regarding land and natural resource management and finances, leadership opportunities for women, involvement in community decision-making by women who head households, and more equitable division of labor on the farm and at home. There was also evidence that these changes in gender roles were being sustained in other case studies but less widely. This indicates the promise of many of these interventions in the Shire River Basin when they are well-implemented, and the target population is willing and able to implement them.

Table V.3 summarizes the extent to which the interventions resulted in sustained changes in gender roles in households and communities three years after the close of the grants across all five case studies.

Table V.3. Extent of changes in gender roles that have been sustained in households and communities

Gender roles	Extent changes sustained	Spillover effects [14]
Increases in joint household decision making regarding …		
Land and natural resource management	✓✓✓✓	+
Household finances	✓✓✓✓✓	+ +
Changes in division of labor on the farm and at home	✓✓✓✓✓	⊞ + + +
Leadership opportunities for women	✓✓✓✓✓	⊞ ⊞ + +
Involvement of female-headed households in community decision making	✓✓✓✓✓	

✓ Adoption widely sustained in one case study.

✓ Adoption sustained in one case study.

\+ Spillover among nonparticipants in the same village or unsure which villages

⊞ Spillover among nonparticipants in other villages

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a)

Three years after the close of the compact, participants in three out of the five case studies reported widely sustained increases in joint decision making in households regarding land and natural resources and household finances due to SGEF activities. In addition, we found that these changes were sustained in the other case studies, but less widely.

[14] Spillover includes nonparticipants incorporating key SGEF activities or exhibiting changes in gender roles in households or communities.

Household decision making on land and natural resources

Respondents in three of the five cases reported widely sustained increases in the number of women participating in decision making regarding land and natural resources. In the remaining two cases, these changes were sustained, if not as widely. In the UP case study, where these changes were widely sustained, participants' accounts suggest that three-quarters of participating households have sustained joint decision making regarding land and natural resource management. Participants reported that women were now seen as having some expertise in SLM and CA. This added credibility helped women maintain their seats at the household decision-making table. In the TSP and CCJP case studies, participants also widely sustained these practices, while in the FISD case study, participants reported sustained joint household decision making, even if not as widely as in the other cases. In the CCJP, respondents reported that this increased collaboration resulted in fewer disagreements about household decisions related to cultivating land, and in spouses deciding together on which crops to plant and whether to use fertilizer. The respondents in the final case study (WOLREC) did not speak specifically about joint decision-making regarding land and natural resources; rather, they answered about finances or joint decision making in general.

> **"In the field, we all used to go together to plant maize. And then there were other small crops, like pumpkins and pigeon peas that were only planted by the woman. Right now, we are planting those together, and we are agreeing on what to do when the rain has started…People are working together without discriminating between the man and the woman. There is a change, and I see that it will continue."**
>
> ***(FG_M17_UP)***

Household decision making on household finances

Increases in joint household decision making regarding finances was broadly sustained in three of the case studies and sustained to a lower degree in the fourth and fifth. These changes were often attributed to changes in attitudes after sensitization trainings and trainings women and men shared on household budgeting and communication. These changes were sustained by changes in women's abilities to contribute to household income through IGAs and opportunities created by women's increased participation in VSLs. Women's increased influence in community and household settings through new leadership roles and changing division of labor also reportedly led to growing respect for women's daily undertakings and household contributions, and trust in their decision-making skills. Many respondents reported that the sustained increase in women's participation in VSL groups continues to benefit their households financially and build women's economic power, further buoying their role as joint decision makers in their households. In one village, UP participants and community leaders estimated that up to 75 percent of households in participating villages were practicing joint decision making on household finances. TSP project participants estimated between 50 to 80 percent, while WOLREC participants estimated "the majority." These numbers show that participants perceive that most of their fellow participants have embraced these changes.

Across all five case studies, community leaders and program participants reported that women's increased role in decision making regarding household finances led to fewer arguments in families about finances. In three cases—WOLREC, TSP and CCJP—participants reported that changes in gender roles led to a reduction in divorce rates and gender-based violence (GBV). Participants explained more joint decision making in households enabled partners to make decisions that were more responsive to everyone's needs, reducing reasons for arguments. Gender sensitivity training was seen as central to increasing respect for women and reducing GBV. We do not have further evidence to verify this report.

Another effect of increased joint household decision making regarding finances is that more households are saving money and investing in their homes and families. Some argue that there are fewer household expenditures on entertainment, gambling, prostitution, and alcohol. Instead, more women are participating in small businesses or families are investing in agriculture and other IGAs that benefit of the whole family. Household well-being has improved, according to project participants, as there is more investment in household welfare, more money for food, and more money for children's education. The benefits that have accrued for families have further motivated participants to continue the practice of joint decision making. Chiefs have also played a role in supporting these changes by promoting gender equity.

"Now there is a change, we discuss [finances]… When we find money, we discuss what this money should be used for…We should see to our needs that are around the house. Or the poverty of children, or…food…or fertilizer."

(WH_F2_TSP)

D. Additional insights about participation of women in IGAs and other significant SGEF activities

Although our evaluation questions do not specifically explore IGAs or other SGEF activities, these activities were an important part of the grant program logic. Some of these activities were very popular and had implications for gender equity and potentially reducing the need for unsustainable natural resource use. For these reasons, we describe the sustained adoption of these activities and some of their effects.

Overall, we found that interventions resulted in widely sustained and expanding participation in VSLs in all the case studies. IGAs were widely sustained in two case studies, sustained in two others, and less readily sustained in the fifth. Beekeeping was widely sustained in one case, sustained in another, and less readily sustained in two more. The enthusiasm for these activities appears warranted, with multiple effects on income, gender equity, and natural resource management. Table V.4 summarizes the extent to which these activities were sustained three years after the close of the grants, and whether there were spillovers to non-project participants.

Table V.4. Sustained adoption of income-generating activities and SGEF practices

Practice/activity	Extent of sustained adoption	Spillover effects
REFLECT Circles	⏸⏸⏸⏸⏸	⊞ +
VSLs	✓✓✓✓✓	⊞⊞⊞ + +
Income-generating activities	✓✓✓✓⏸	+ +
Beekeeping	✓✓⏸⏸	⊞
Cookstove production	✓⏸	
Goat pass-on program, where recipients give kids to others in the community to continue the program	⏸⏸	

✓ Adoption widely sustained in one case study.

✓ Adoption sustained in one case study.

⏸ Adoption less readily sustained in one case study.

\+ Spillover among nonparticipants in the same villages

⊞ Spillover among nonparticipants in other villages

VSLs remain the most popular grant activity implemented, are widely sustained in all five case studies, and continue to expand among participants and nonparticipants within and outside villages where the projects were implemented. Most VSL participants are women who report they use the groups as a resource for borrowing and saving money to invest. Women report investments in small businesses, farm production, home improvement, household goods, and children's education, among other things, that ultimately improve household welfare. Both male and female respondents reported that VSLs have given women more financial freedom, reduced their dependency on their husbands, and raised members' awareness of economic rights. In all case studies, respondents linked the success of the VSLs and IGAs to increased joint household decision making regarding finances. Participants agree that bringing more income into the family enhances women's status and further supports the legitimacy of their role in decision making. In the TSP case study, participants reported that VSLs were particularly important for female heads of household to receive loans to start small businesses. Some respondents linked the success of VSLs with reduced need for project participants to take part in unsustainable use of natural resources, such as making charcoal or selling firewood. In the UP case, the success of the VSLs and IGAs has led to an increase in new financial institutions, such as banks, in some communities. Respondents in all cases reported that VSLs led to positive changes in their communities; for example, three cases reported widespread proliferation of metal roofs on homes. In the TSP case, metal roofs were also reported to be an environmental good, in that the new corrugated roofs mean that less vetiver grass would be needed for roofing. Tempering this enthusiasm, participants in three cases reported that the COVID-19 pandemic and subsequent lockdowns had a dampening effect on their VSLs, making it harder to meet, hurting people's businesses so that members were not able to contribute to savings, and preventing some borrowers from being able to pay back loans.

The sustained adoption of IGAs encouraged by the grants has been mixed. Participants have widely sustained IGAs made possible by VSLs in two case studies, sustained them in two others, and less readily sustained them in a fifth. The types of IGAs that have been sustained vary greatly and include selling firewood from mature wood lots, selling alternative crops, using VSL money to buy fish for resale, cooking and selling fritters, and other activities. In addition, beekeeping, the production and sale of fuel-efficient cookstoves, and the goat pass-on program have been sustained in fewer cases, but where they are continuing, these activities have been successful. The beekeeping interventions have been widely sustained in the WOLREC case; participants sell honey and, in some communities, have built additional beehives. Beekeeping has been sustained less widely in the UP case; some hives were destroyed by fires, and some participants reported not having the materials and sufficient training to continue. Respondents reported less readily sustained beekeeping in CCJP and TSP. The goat pass-on schemes have been less readily sustained, hindered by a variety of factors such as hyena attacks, disease, and pigeon peas accidentally poisoning goats. However, in communities where the program continues, participants report benefits.

Photo: Honey-making cooker

REFLECT circles have not been readily sustained, mainly because grantees are no longer paying group facilitators. Some respondents credit what they learned in the REFLECT circles with enabling them to attain the benefits they see today. Respondents in the TSP case reported that REFLECT circles provided women with literacy and mathematics classes that better prepared them to start businesses. Participants in the UP project reported that the supports and resources from REFLECT circles as well as VSLs and village development committees were integral in enabling women to adopt and sustain IGAs. To replace the literacy classes no longer led by grant-paid instructors, government-funded teachers have been assigned to teach literacy in some of these areas. It is unclear whether the REFLECT methodology or the gender empowerment that was integrated into the REFLECT circles during the grants, which helped sensitize men and gave voice to women in both communities and households, is being continued.

Photo: An enclosure for goats in a project village

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b)

In all five case studies, we found that more equitable division of labor on farms and within households was sustained or widely sustained among project participants (see Table V.2). Both male and female respondents emphasized a shift in cultural norms surrounding gender in their communities. In

two case studies, respondents noted that shifts were also occurring among nonparticipants. Respondents explained that there was greater acceptance of the interchangeability of roles and a more open mindset about defining who could take on certain household tasks. For example, more men now help with chores formerly done solely by women, such as cleaning, cooking, caring for children, and fetching water. Participants and community leaders reported that there was less stigma now regarding men taking on what was once considered "women's work." On farms, women now help with tasks formerly done mainly by men, such as planting crops, realigning ridges, and making planting decisions. Respondents in the FISD case study mentioned that the education women had received in agriculture best practices made them valuable contributors to farm work. In the UP case study, respondents mentioned that there were more men and women working together on the farm. In several cases, respondents reported that SGEF trainings improved the division of labor both in quantity and type. Before the project, women tended to be responsible for more labor than men. One female participant described women working all day, while men relaxed most of the time. However, three years after the close of grant activities, respondents reported that household labor is now divided more equitably. Spouses are now helping with each other's chores, and there is less division regarding which spouse "owns" each chore. Respondents in the FISD case noted that as women became more involved outside of the home, men took on more household tasks. Interviewees in the CCJP case noted that improvements in the division of labor have increased women's independence and status, and improved marriages. Participants credited grant programs for fostering the increase in division of labor.

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c [Part 1])

The most widely sustained gender role change reported in all five cases was the increase in leadership opportunities for women. Both female and male respondents agreed that leadership opportunities for women have increased from the start of the grants to the three years after the end of the grants. In some cases, participants estimated that women hold more than half of leadership positions in their communities, both in project groups and in other areas. In interviews and focus groups, project participants and community leaders mentioned that along with increased leadership opportunities, there was increased acceptance of women in leadership roles, and even a preference for women being in leadership positions, as women were said to be more trustworthy than men. VSL groups were an important factor in leading to increased leadership opportunities for women and showed communities that women are capable leaders. Not only have the number of women in leadership positions increased, the type of positions that women are elected to has also been diversified. Respondents in the CCJP case mentioned that before the project women were elected as secretaries or committee members; however, thanks to the SGEF program, women hold positions including chairperson, school committee member, treasurer, VDC member, church group leader, and in some cases, village chiefs.

"Sometimes they were saying that even at church women should not preach. … Most people were saying that we should be choosing men to be chairs. But now it's possible for a woman to be chosen as a chair and lead on some things. Even the adult school literacy teachers, they used to say most of them should be men, but now we see that most of them are women, which means that women are involved in a lot of positions."

(CL_F2_UP)

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c [Part 2])

In the case study areas, female-headed households are not uncommon. A main reason for this is that men migrate to South Africa in search of work. In the UP, WOLREC, and CCJP cases, participants reported that many households were headed by women because of divorce or widowhood. Finally, in some cases, such as UP and CCJP, households in Muslim communities were female-headed because in polygamous marriages in sub-Saharan Africa often each co-wife maintains her own household and acts as a female head.

Female household heads have sustained or widely sustained involvement in community decision-making in all five cases we explored. Respondents in the WORLEC case, for example, estimated that two-thirds or more of women who are household heads participate in community activities, and some hold leadership positions. Respondents in all cases noted that female heads of households were highly involved in VSL groups and were well-accepted in leadership roles. In the TSP case, female heads of households were recognized as competent leaders, in part because they're very invested in the outcomes of community decision making. In the UP case, before the project, participants noted that unmarried and single women were excluded from decision making in the community. UP grant activities sensitized the community and provided a platform for women to engage with the community. Today, many respondents believe that their communities have made positive strides in intentionally including unmarried women and women from female-headed households in community activities.

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d)

The largest spillover effect among nonparticipants in neighboring villages from SGEF grant interventions is for VSLs. VSLs were by far the most popular intervention among participants, as well. These groups are widely sustained and expanding within project villages and beyond. Mainly women are involved in this activity, and the benefits are widely appreciated. The benefits provide motivation for nonparticipants to seek or agree to participate. Participants reported groups growing so large, they needed to break them into two or more groups. They also reported friends and family in other villages wanting to start similar groups. The expansion of VSLs, and attendant benefits, contributed to additional positive spillovers, including building the status of women, supporting more joint household decision making, and reducing pressure on natural resources.

The largest spillover of changes in gender roles is the spread of leadership opportunities for women, which is also the most widely sustained gender role change among participants. Respondents reported spillover of the increase of leadership opportunities for women within participating villages and/or in other villages in four of the five case studies. Respondents reported that the reason for this spillover into neighboring communities was neighbors seeing the benefits of joint household decision making and a more equitable division of labor. Both female and male respondents agreed that leadership opportunities for women have increased in number and diversity, and that the general acceptability of having women in leadership roles has increased, as well. Women have taken on roles at all levels, and some respondents in the CCJP case tied the trend of accepting women in leadership to the increased election of women as members of parliament, selection as village chiefs, and appointment to leadership roles in churches and mosques.

In addition, almost every SGEF activity and gender role change had some spillover. Respondents reported that people who were not part of the program have adopted several activities and gender principles after seeing their friends or neighbors benefiting from them. More equitable division of labor on farms and in homes was a change reported to have spillover to nonparticipants in four of the five case studies, including more men and women working together on farms and men doing "women's" work. Some respondents reported changes among participants in their own villages, while others specifically mentioned other villages. Other respondents did not specify. For example, respondents in the CCJP case study reported some spillover in improvements in gender equality in household decision making and division of labor within the project communities, but there were no spillovers reported in neighboring villages. In the UP case, respondents reported notable spillover in gender role changes among people that did not directly participate in UP, but the data does not specify whether the spillover was within villages or in neighboring villages. Increased joint household decision making regarding finances was a change reported to have spillover to nonparticipants in two of the five case studies. Increased joint household decision making regarding land and natural resources had reported spillover in one case. Although the increased involvement of women who head households in community decision making was widely sustained in three cases and sustained in the remaining two, we do not have reports of spillover in this activity. This could be because this change is difficult to notice casually. Respondents reported that there was spillover of increased involvement in IGAs in two cases, while spillover in neighboring villages was reported in one case each for cookstove production, beekeeping, and REFLECT circles.

E. Findings on stakeholders' perceptions of the sustainability of grant activities

This section looks at stakeholders' **perceptions of the sustainability** of grant activities into the future. In four of the five case studies, the majority of project participants and community leaders thought that most of the CA and SLM practices will be sustained in the long term. For the FISD case study, stakeholders are less optimistic, and report that long-term sustainability will depend on economic circumstances. Financial benefits remain the main motivator for sustaining SLM activities. In addition, in all five cases, respondents reported that they remain optimistic on the longer-term sustainability of the improvements made in gender equity in project communities, such as women's more active role in leadership in the communities. Most also reported they expected VSLs would be sustained into the future. There was more diversity in opinions regarding the long-term sustainability of the income-generating activities, while most respondents did not think REFLECT circles would be sustained in their villages.

> **"When we planted pigeon peas and soya beans, they came and bought from us. They gave us money and our lives changed. When they went back, they thought of adopting what their friends are doing little by little…"**
> ***(FG_M2_TSP)***

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a)

Most respondents reported confidence in the longer-term sustainability of CA and SLM activities in four of the five case studies (WOLREC, UP, CCJP and TSP). In the WORLEC, UP, and CCJP cases, respondents reported that participants would continue with the ENRM activities as implemented during the grants. In the UP case, farmers pledged to continue these activities and continue to enact bylaws to hold participants accountable for the protection of forests and woodlots to ensure their longevity. In these

communities, cutting or stealing trees leads to fines from local chiefs. Participants reported notable success of the bylaws in discouraging these harmful practices. In other cases, continued encouragement from local leaders was cited as a reason for longer-term sustainability. In the TSP case, respondents were confident that most CA and SLM activities would be continued long-term, but they had doubts about the sustainability of tree nurseries, because many lacked supplies needed to continue raising seedlings. In the FISD case, by contrast, optimism regarding longer-term sustainability was more guarded, as respondents reported that it was an open question whether improved land management activities would continue. For them, the answer depends on prices for irrigated land and other economic trends.

What factors were driving beneficiaries to continue to adopt SLM practices? (EQ 4.c)

"The fine that they set during that time was 50,000 kwacha. The reason why they set it at 50,000 kwacha, it's not that they want the money. No, but they want to instill fear in people when they hear about the 50,000 so that the forest reserve should be conserved."
(CL_M2_CCJP)

In all five cases, the main reasons project participants gave for continuing to adopt CA and SLM practices were the financial and environmental benefits they experienced. Respondents reported that practices such as planting trees improved soil quality, which resulted in increased crop yields, incomes, and food security. Practices such as contour ridges and swale channels were reported to improve soil moisture, also leading to increased crop yields, incomes, and food security. Participants do not want to forfeit these benefits. In the TSP case, respondents reported that increased crop yields improved their ability to feed their households over years past and that they enjoyed the higher food security. In the FISD case, respondents noted that the increased income from higher yields offered women additional freedom and ability to invest in IGAs, VSLs, and additional farming activities.

The second main factor driving participants to continue to adopt CA and SLM practices in all five cases was the commitment village chiefs, extension workers, lead farmers, and other leaders made to continue encouraging and facilitating adoption. In the TSP case, the ENRM ambassadors continue to encourage adoption of SLM practices, and respondents noted that this was one of the driving factors that will enable longer-term sustainability. In the WOLREC, UP, CCJP and FISD cases, village chiefs' commitment to continuing SLM activities will be an important factor in the activities' sustainability. In both the FISD and UP cases, village chiefs are enacting local bylaws and will punish violators to further ensure support for SLM practices. In the UP case, lead farmers are also instrumental in encouraging and facilitating continuous adoption. Respondents reported that the initiatives of these leaders will drive the sustainability of these important practices.

Other factors that influence sustainability include support from new projects, the ownership some participants feel over the activities, and practices that will enable farmers to maintain and improve harvests. In the WORLEC case, another funded project with similar objectives has begun working in WOLREC communities. This project's work has supported and provided motivation for the continuation of the WOLREC CA and SLM interventions, at least for the near future. Some WOLREC respondents also reported that they felt a sense of ownership over the WOLREC-promoted activities they undertook and have since expanded them. This is seen as a factor that will help sustain these activities going forward. Finally, in the UP case, respondents reported that climate change challenges will push farmers to use new techniques that will enable them to continue to cultivate in changing circumstances. They reported the CA and SLM activities they have learned will enable them to maintain, if not improve, their harvests in the new reality.

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ 4.b)

Overall, participants reported being optimistic about the longer-term sustainability of SGEF activities and changes in gender roles in households and communities. Although activities such as REFLECT circles were on the decline, the success of VSLs and women's expanded leadership roles were seen as the most positive indicators of sustainability.

As of 2021, VSL groups remained the most promising and sustained SGEF activity among participants, with many VSLs expanding and splitting into more groups. Respondents reported that groups were continuing to grow and spawn new groups, so the sustainability into the future seems assured. In the UP and WOLREC cases, VSLs have spread to children and younger adults, also a good sign that they will be sustained. Given the interest in these groups inside and outside project communities, as well as the financial benefits many participants have received from VSL groups, most respondents were confident that VSLs would continue. A few respondents noted that there are few alternatives for borrowing money, which is another reason they thought they would continue.

Respondents in all five cases also thought that most of the changes in gender roles in households and communities would be sustained into the future. Some respondents noted that these new roles have become habit, participants perceive benefits, and village chiefs continue to encourage them. They also see younger generations learning these norms and continuing them into the future. Participants noted that women leaders have been well received, and that community leaders and participants have a strong desire to see the trend of more women in leadership continue.

Interestingly, resistance to changes in gender roles was rarely mentioned. When it was mentioned, it was often a unique speaker mentioning "possible" concerns. For example, in the UP case, only one participant expressed concerns about the impact program activities have had on gender relations, noting women's elevated status in the community might lead to a gender imbalance. In the TSP case, some respondents mentioned resistance to changes in gender norms in the sense that they were adhering to traditional mindsets, but the statements were not presented as resistance to changes as a result of the project. Finally, in the FISD case, there were four comments made regarding changes in gender roles. One man suggested that changes in gender norms could create issues as women become "big headed," another suggested that in the eyes of religion women should be subordinate, and one other mentioned certain jobs should be for men and others for women. Finally, a woman said she had heard of men being jealous of women in leadership positions. But overall, there was no consistent resistance, which was different from the interim round and bodes well for longer-term sustainability of the changes in gender roles.

Photo of new beehive

There was no clear or common perception on the sustainability of IGAs. In the CCJP case, respondents thought that most IGAs will be sustained because of the financial rewards they produce. In the FISD case, IGAs were seen as sustainable for now, but their sustainability could be threatened by worsening economic situations. In the TSP case, respondents in areas where beekeeping had been successful expected this activity to continue. In areas where beehives had been destroyed, respondents were quite sure the activity would not be revived because of their lack of access to supplies and lack of

continued training. Overarching perceptions regarding sustainability did not emerge.

REFLECT circles have been on the decline since the end of the grants, and many respondents are dubious about their sustainability. At the end of the grant period, most REFLECT circle leaders, who had been paid by the projects, did not continue their work unpaid. Nor did communities mobilize to pay them to continue. Instead, in several places, the government has paid instructors to teach literacy, a main component of REFLECT Circles. However, the other components of the projects' REFLECT Circles have not been continued, such as numeracy training, business training, budgeting, and gender sensitization. Although literacy classes might continue in this structure, most respondents do not consider it the same as the REFLECT circle process used during project implementation. The COVID-19 pandemic has also negatively affected REFLECT circles, as gathering in groups has been much more difficult and discouraged.

F. Unintended consequences of the projects

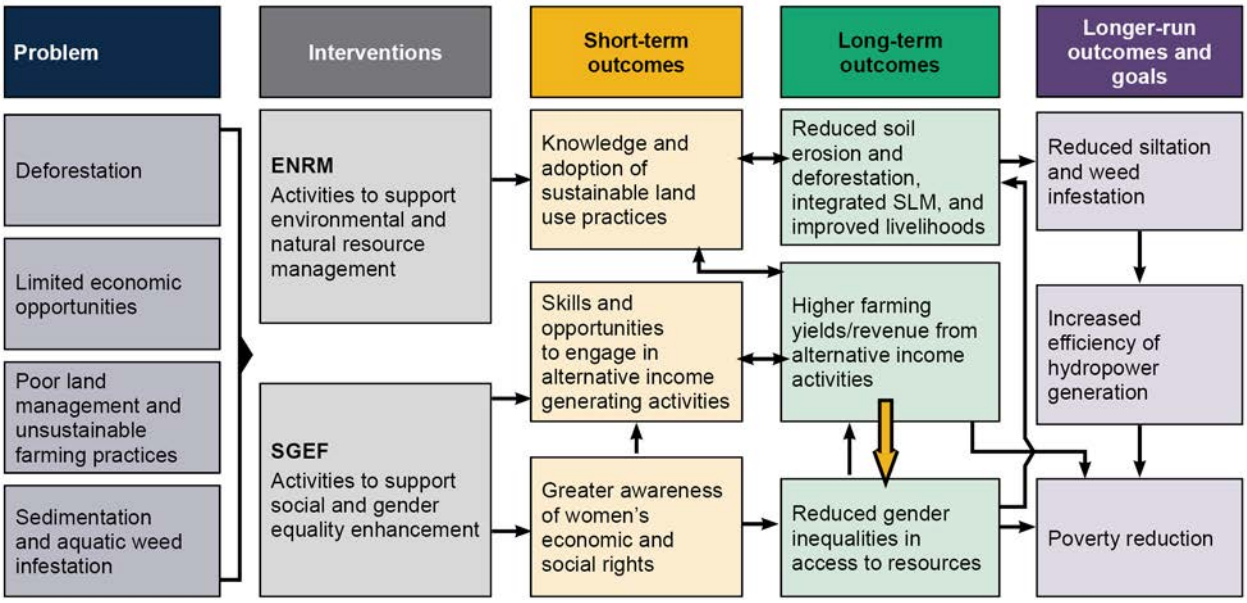
There were no common unintended consequences noted by respondents.

G. Findings on how the logic model for the ENRM and SGEF grants held up

As a second way to evaluate the success or lack thereof of the projects, we conclude with an assessment of the logic model for the ENRM and SGEF grants. We assessed the logic model by comparing each of its components with the data we obtained through the case studies. Our assessment was guided by questions about whether the logic model properly captured the observed relationships and requirements depicted in the logic model, and whether the initial logic model failed to capture any relationships that turned out in practice to be important. The results of this assessment can inform the design and understanding of similar interventions in other settings.

In Figure V.1., we depict the logic model reported in our interim evaluation, which includes the some of the problems the grants were designed to address, the interventions envisioned for implementation, the short- and long-term outcomes, and the longer-run outcomes and goals (Velyvis et al. 2019). The model shows that the project objective as far as the grants were concerned – reduced siltation and weed infestation, was envisioned to be achieved via reduced soil erosion and deforestation, integrated SLM, and improved livelihoods (a long-term outcome). ENRM activities were designed to lead directly to knowledge and adoption of SLM practices (a short-term outcome), reduced soil erosion and deforestation (a long-term outcome) and result in reduced siltation and weed infestation. SGEF activities were designed to affect the project objective directly and indirectly, through skills and opportunities to engage in AIGs and greater awareness of women's economic and social rights (short-term outcomes), which were designed to lead to reduced gender inequities in access to resources and higher yields and revenue from AIGs (long-term outcomes). These long-term outcomes were meant to directly and indirectly reduce soil erosion and deforestation (long-term outcome). Through this long-term outcome, SGEF activities would impact the project objective.

Figure V.1. Program logic for ENRM and SGEF grants



Overall, the evidence we have is consistent with the logic model flow for ENRM and SGEF grants displayed in Figure V.1. However, the pilots were likely not large enough to have a measurable effect on siltation and weed infestation in the Shire River Basin. Overall, we found that the projects' interventions followed this flow and that many of the long-term outcomes have been reported as a result. Scale-up of these interventions would be required to determine whether some of the longer-run outcomes and goals could be met.

The villages chosen for data collection were ones in which grantees introduced most of their activities and considered them well-implemented. Therefore, the interventions in these case studies were likely best-case scenarios. Short-term outcomes of knowledge and adoption of SLM practices were widely reported, and practices were sustained or widely sustained. Skills and opportunities to engage in IGAs were indicated by the number and variety of IGAs adopted and sustained and the positive benefits reported. Greater awareness of women's economic and social rights was also widely reported and appreciated. We also saw evidence of the greater awareness of women's economic and social rights affecting women's engagement in IGAs.

In all five cases, adopting CA and SLM practices led to reported higher farming yields. Engaging in IGAs was also widely reported to have led to increased revenue. Greater awareness of women's economic and social rights also led to reduced gender inequities in access to resources through increased joint household decision making regarding finances and land and natural resource management, more equitable division of labor, and increased opportunities for women in leadership positions. These reduced inequities led to higher farming yields through women practicing CA and SLM and women and men working together on cultivation. They also led to higher revenues for women newly involved in IGAs.

An element of the logic model that our evidence shows should be added is that increased women's revenue from IGAs and higher yields also led to more equitable gender roles, as they positioned women to take a larger role in household decision making regarding finances. This additional flow is represented by the yellow arrow.

We did not measure siltation and weed infestation, recognizing with MCC the scope of the pilots would probably not allow these longer-run outcomes to be detectable. We joined MCC in concluding after the interim evaluation that the pilots were likely not large enough to have a measurable impact on hydropower generation. These longer-run outcomes are still theoretically feasible. The literature has shown that adopting ENRM practices such as swales, ridge alignment, and planting trees should affect siltation and weed infestation in rivers in the longer term. Our key findings indicate that ENRM grant interventions led to widely sustained adoption of conservation agriculture and SLM practices among project participants and that they spilled over among nonparticipants in neighboring villages. We heard reports of reduced soil erosion and deforestation and improved natural resource-based livelihoods – nascent long-term outcomes leading in the right direction.

Finally, we do not have data regarding poverty reduction. We have indications that higher yields, greater food security, and higher revenue from IGAs could have made inroads reducing poverty for households. Reduced gender inequalities in access to productive resources might also have helped, as women now have more authority in decision making on household finances. Respondents reported this shift has led to more household income being spent on household well-being and investments in farm production than previously. Assessing the grants implemented in these model villages offers evidence that these interventions could lead to the longer run outcomes and goals if scaled.

VI. FINDINGS FROM THE GRANT FACILITY EVALUATION

Key findings: Grant facility objectives

- The grant facility was not able to make environmental improvements noticeable at the level of the Shire River Basin, according to stakeholders, because only a small fraction of the land and people of the Basin were involved in the grant projects. However, stakeholders think that, with time, some of the interventions could still make a difference locally.
- The grant facility was flexible, allowed a certain amount of creativity and innovation, and supported organizations to initiate or expand efforts to address ENRM challenges. However, through its support, the grant facility mainly encouraged very similar interventions to be implemented across grants, losing the ability to test the effectiveness of different activities.
- The grant facility supported efforts to improve control and sustainable management of resources by women and addressed social and gender disparities in the Shire River Basin. These activities also helped ENRM activities to succeed.

MCA-Malawi created the ENRM and SGEF Small Grant Facility under the ENRM Project to address environmental and natural resource management challenges as well as social and gender disparities in the Shire River Basin. MCA-Malawi commissioned baseline environmental assessments of the Upper and Middle Shire River Basins. From those assessments and action plans, MCC and MCA-Malawi identified the aims for the ENRM Fund, SGEF Fund, and the grant facility, as elaborated in MCA-Malawi's grant manual (MCA-Malawi 2014). In this chapter, we assess whether or not the grant facility achieved these aims, and why. We answer the following research questions:

1. Which of the following objectives from the grant facility manual were achieved by the grant facility and which were not, and why?

   a. Maintain ecological integrity of landscapes.

   b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation.

   c. Allow beneficiaries to innovate and implement technologies that have proven to reduce soil erosion.

   d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power).

   e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges.

   f. Address the social and gender disparities in the Shire River Basin.

   g. Improve participation of both men and women in the implementation of ENRM activities.

For this analysis, we drew on interviews with former MCA-Malawi staff, MCC staff, and grant program staff, an extensive review of program documentation from all stages of the grant facility, and findings from our five in-depth case studies.

A. Assessment of grant facility objectives

In this section, we examine the extent to which the grant facility achieved its overall objectives, which aligned with recommendations from the baseline Upper and Middle Shire environmental reports (as described in Coen et al. 2019). The environmental reports identified hotspot locations where MCA-Malawi should focus its funding and high-impact intervention recommendations to reduce sediment runoff and weed growth throughout the Shire River Basin. Hotspots are areas that cause a disproportionately high level of sediment runoff into the Shire River (LTS International 2011, 2013). The recommendations called for more traditional conservation agriculture and forest management activities along with activities focused on women's empowerment and improved gender equity. MCA-Malawi shared these reports with grant applicants and used their recommendations to select and guide grantees.

The grant facility's objectives aligned with the project's program logic and theory of change (Figure I.1), whereby the grant facility sought to improve sustainable land management both directly through more traditional ENRM activities and indirectly by addressing social and gender inequities. The grant facility was also designed to provide evidence for the emerging environmental trust as to which activities and approaches proved most effective for future funding and scale-up.

B. Grant facility achievements: Which of the following objectives from the grant facility manual were achieved by the grant facility and which were not, and why?

In Table VI.1, we summarize the findings that both support and challenge whether the grant facility achieved the objectives identified for the ENRM Fund, SGEF Fund, and the grant facility itself in the grant manual. Following the table, we describe the findings for each objective in more detail.

Table VI.1. Assessment of grant facility achievements

	Objective	Positive findings	Negative findings
👎	a. Maintain ecological integrity of landscapes.	• The ENRM activities implemented were aligned with recommendations from the environmental assessment reports • Some promising adoption and sustainability findings regarding ENRM activities from individual grantees	• Only a couple thousand hectares out of more than 3.1 million were targeted • Timeframe not long enough • Shire BEST not following up to support spread and sustainability of interventions
👎	b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation.	• The ENRM activities implemented were aligned with recommendations from the environmental assessment reports • Some promising sustainability findings regarding tree planting from individual grantees • Natural regeneration was sustained and could lead to the earliest impacts	• Only a couple thousand hectares out of more than 3.1 million were targeted • Shire BEST and other donors not following up to support sustainability

Table VI.1. ***(continued)***

	Objective	Positive findings	Negative findings
	c. Allow beneficiaries to innovate and implement technologies that have proven to reduce soil erosion.	• The grant facility was flexible and allowed grantees a certain amount of creativity	• The grant facility mainly encouraged grantees to implement ENRM activities aligned with recommendations from the environmental assessment reports
	d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power).	• The grant facility required all grantees to integrate the SGEF activities into their programming • Participants reported that trainings through REFLECT Circles were effective in changing sentiments in terms of more equitable joint household decision-making • New gender norms have been sustained • Women's enhanced economic power helped sustain their decision-making ability within households	• The scope of the interventions within the Shire Basin was relatively small
	e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges.	• SGEF activities were positive facilitators of ENRM adoption • All grantees integrated the SGEF activities into their programming with grant facility support	
	f. Address the social and gender disparities in the Shire River Basin.	• The grant facility required all grantees to integrate the SGEF activities into their programming • Improving gender disparities was part of all interventions • New gender norms have been adopted and sustained	• Stakeholders thought the facility could have had a richer portfolio of interventions to allow piloting and learning about different approaches • The scope of the interventions within the Shire Basin was relatively small
	g. Improve participation of both men and women in the implementation of ENRM activities.	• Women participated in larger numbers than men, but men's participation was improved as well	• Men's participation remains lower than women's

a. Did the grant facility maintain ecological integrity of landscapes? Why or why not?

Given the scale of the grants and the size of the Shire Basin, stakeholders did not think the grant facility had achieved this objective, nor that it could have during the grant period. Maintaining the ecological integrity of landscapes in the Shire River Basin would mean maintaining the ability of the landscape to sustain ecological functions—such as supporting biodiversity—over the long term. The Shire River Basin covers more than 3.1 million hectares. The grants issued by the grant facility covered just a couple thousand hectares. According to most stakeholders, to see an impact, many more participants and more land would need to be included for more widespread interventions and perhaps more intensive

implementation. A former MCA-Malawi staff member noted that using a broader perspective than just the three years the grant facility was operational and the three years since it was closed is necessary, as this is a long-term objective. In that way, stakeholders thought assessing this objective at this point was challenging. Information from implementers who are still aware of what is happening in their implementation zones and participants in the five case studies covered in this evaluation indicated that there are farmers who continue to plant trees, take care of forests, actively participate in income-generating activities, and use environmentally friendly interventions. However, with the challenges the Shire BEST has had, respondents noted that the spread and sustainability of interventions into the future might be challenging.

b. Did the grant facility reduce soil erosion that contributes to sedimentation and aquatic weed infestation?

Given the scale of the grants, their diffuse sites, and the size of the Shire Basin, stakeholders did not think the grant facility had yet reduced soil erosion that contributes to sedimentation and aquatic weed infestation. However, stakeholders did think that sustained use of the interventions could lead to a reduction in soil erosion and accrue ecological benefits in the longer run. MCA-Malawi and MCC staff recognized that these interventions alone would not affect the total amount of sediment flowing into the Shire River. Currently, erosion in the districts where the grants were implemented is notable. As one respondent noted, when it rains, one can see the sediment and dirty water running into the Shire River from most of the districts where interventions were implemented.

There are reasons for both optimism and pessimism. According to a former MCA-Malawi staff member and reports from case study participants, sustained community-led environmental management interventions and co-management of forests could promote natural regeneration, which would help reduce soil erosion over time. As reported in the interim evaluation reports, the number of trees planted during the grant period greatly exceeded the targeted amount. Moreover, case study respondents reported that many project participants are continuing to plant trees. While these efforts could help reduce soil erosion in the future, an MCC respondent pointed out that there is a pulse of sedimentation when you plant trees, and not all trees planted will survive. It also takes years before trees function as a forest—assuming they were planted in a forest-like structure. That said, if limited to the intervention areas, in the longer-term there could be impacts. MCC staff and grant participants interviewed for the case studies predicted that, if project participants continue to see benefits from the interventions, they will continue to sustain them, which could lead to these longer-term outcomes. However, community members who did not participate in the interventions might find it more difficult to adopt and sustain the practices. Should the grantees receive follow-on funding from other sources to continue working on SLM activities in the same communities where they initiated such activities or in other hotspot areas, the impact of the work would be enhanced. Participants from only one case study—WOLREC—reported more project activity after the grant period ended. With the trust yet to be truly operational, it is unclear whether and how these activities will be scaled up to a level that would substantially affect soil erosion.

c. Did the grant facility allow beneficiaries to innovate and implement technologies that have proven to reduce soil erosion?

Stakeholders had mixed responses about whether the grant facility allowed beneficiaries to innovate and implement technologies that have proven to reduce soil erosion. The grant facility was flexible and allowed grantees to think creatively about how to solve problems. One interviewee pointed out that grantees could think about issues like, “What would make someone not cut a tree?” and come up

with an answer like, "Let's put bees in them!" In the case of encouraging bees, grantees reasoned that participants would find it more profitable to sell honey than to cut a tree, and would then plant more tees because of the benefits of having trees versus cutting them down. A second example of an original, innovative intervention was FISD's solar-powered irrigation scheme. Despite construction, maintenance, and repair challenges, farmers are experiencing increased yields, which can reduce pressure to expand cropland. This was an intervention one MCC staff member noted that they as designers would never have thought of.

The grant facility also encouraged grantees to think about and convey the goal of their efforts in new ways, according to a former MCA-Malawi staff member. The grant facility worked with grantees to focus on the main objective of the grants, which was determining how they could ameliorate whatever was happening upstream causing sediment, debris, and weeds to affect the power plants. The grantees came up with innovative ways to link what they were doing to this goal and conveying the importance of this goal to community members. Some grantees focused on how electricity is generated—the ecological environment, the rivers, and how electricity goes to communities to run maize mills, hospitals, and lights—to get community members to reflect on how they are affected when electricity disruptions occur. In this way, the grant facility helped the grantees and the participants in their programs see their own parts in the problem, implications, and solution.

The grant facility allowed for some innovation, but most projects merely followed the recommendations in the baseline environmental assessments conducted by MCA-Malawi. The grant facility could have built a body of evidence of successes and challenges to be leveraged for the emerging environmental trust. However, as a practical matter, the differences across grants in the types of planned activities and their related approaches were fairly limited. Some interview respondents were skeptical about how much the grant facility allowed beneficiaries to innovate in choosing technologies that have proved to reduce soil erosion. MCA-Malawi commissioned baseline environmental assessments of the Upper and Middle Shire River Basins (LTS International et al. 2011, 2013, 2014a, 2014b, 2014c). Those baseline reports provided high-impact intervention recommendations to reduce sediment runoff and weed growth throughout the Shire River Basin. The recommendations called for more traditional conservation agriculture and forest management activities (such as interplanting and crop rotation to increase crop production, mulching and manuring to increase the soil's organic matter, and planting trees and grass for riverbank protection), along with activities focused on women's empowerment and improved gender equity (such as supporting VSLs, establishing water user associations, and providing fuel-efficient cook stoves).

The grant facility effectively operationalized the recommendations in the baseline environmental reports. The facility wholly incorporated recommendations for intervention types into the grant facility manual. As part of the application process, potential grantees received copies of the baseline environmental reports, and grant staff from several organizations reported that they used the reports to guide the activities they proposed. MCA-Malawi then worked with prospective grantees to distribute interventions across as many of the identified hotspots as possible. The grantees conducted many similar interventions per the recommendations in the baseline environmental reports. Some stakeholders looked at the way the grant facility manual was created and how the grant application and selection was conducted and concluded that the grant facility went back to the same standard kind of interventions that have been done and produce results. They would not call the technologies innovative, because they have been and continue to be used.

d. Did the grant facility improve control and sustainable management of resources by women and vulnerable groups (decision-making power)?

MCC staff and participants in the case study interviews agreed that the grant facility was able to improve control and sustainable management of resources by women and vulnerable groups. MCC staff pointed out that requiring all grantees to integrate the SGEF activities into their programming allowed the grant facility to improve women's and vulnerable groups' decision-making power and control over resources. A former MCA-Malawi staff member noted that the grant facility created an awareness that women are important household and community members in the process of improving livelihoods. Case study participants agreed that SGEF trainings provided through the grantees, usually implemented through REFLECT Circles, helped community members change their sentiments in terms of joint household decision making. Participants reported that the SGEF interventions altered decision-making gender norms in all five cases, and that these new norms were widely sustained in three case studies and sustained, although not as widely, in the other two. The grant facility was also innovative in identifying interventions to empower women through improved livelihoods, helping women transform from charcoal making to alternative and cleaner ways of making money. Many case study respondents noted that women's enhanced economic power through SGEF activities further helped improve and sustain their decision-making ability within households.

e. Did the grant facility support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges?

Stakeholders agreed that the grant facility was able to support organizations to expand their efforts in addressing environmental and natural resource management challenges. Many of the grantees built their interventions on existing programs, so at the most basic level the grant facility supported them in expanding their efforts. Other grantees who had experience with parts of the suite of interventions that were encouraged received support to initiate new, less familiar programs, such as incorporating SGEF interventions into efforts to address environmental and natural resource management challenges. Finally, the grant facility helped grantees expand their efforts to address these challenges by focusing on and conveying the main objectives of their work in new ways.

The grant facility expanded most grantee organizations' efforts to address environmental and natural resource management challenges by promoting the integration of SGEF and ENRM activities and supporting grantees who had little experience in implementing SGEF activities. The grant facility sought to improve sustainable land management both directly through more traditional ENRM activities and indirectly by addressing social and gender inequities. Some grantees had not previously conducted SGEF activities, but all grantees were encouraged—if not required—to integrate ENRM and SGEF interventions in their grant-funded work. At the end of the grant period, many project participants noted that SGEF activities were positive facilitators of ENRM adoption (for further information, see our interim report [Velyvis et al. 2019]). There was a learning curve for some grantees who had little, if any, experience in implementing SGEF activities. However, there were grant facility staff dedicated expressly to supporting SGEF grant activities, which helped the grant facility's success in expanding organizations' means of addressing ENRM challenges in an innovative way.

f. Did the grant facility address the social and gender disparities in the Shire River Basin?

All stakeholders agreed that the grant facility made a concerted effort to address the social and gender disparities in the Shire River Basin. The societies in the Upper and Middle Shire River Basin are mostly matrilineal, which means women inherit family property, and men follow women when married. This means women control land and the natural resources on it. However, within households, men remain in control of and have decision-making power over household assets. This can result in men not having incentives to invest in land, and women not having the means to do so. Two key social and gender issues the ENRM Project sought to address were women's lesser access to and control over productive assets, and men's greater role in household decision making (MCA-Malawi 2014). Because the grant facility required it, SGEF activities were effectively integrated in all projects, and stakeholders reported that there was an interest in this work.

All interventions tried to contribute to improving control and sustainable management of resources by women and vulnerable groups. A main focus of the SGEF activities was gender disparities in decision-making power. Through REFLECT Circles, project participants were taught how household members could come together to plan, budget, and share decision making. The grants focused on women who are heads of households (and are considered a vulnerable group), in addition to all women. They targeted the interventions to these women to help them understand how finances work and how to make daily financial decisions. Community forests, beekeeping, and income-generating activities—all focused on improving women's control and sustainable management of resources.

The grant facility addressed the social and gender disparities in the Shire River Basin but missed an opportunity to learn more about the best way to do it. At least one MCC staff member thought that using the grant manual as a guide to encourage the implementation of certain types of interventions, as occurred with the ENRM interventions, meant that the social and gender disparities in the Shire River Basin were addressed in a very cookie-cutter style, using the same approach everywhere. He noted that, instead of allowing grantees to experiment or try many kinds of interventions, there was an effort to standardize SGEF activities, such as using the REFLECT methodology. This had benefits as far as consistency, but the grant manual was also intended to help garner a range of learnings and determine from the final evaluation which ones worked better. Although that might not have been possible given the small number of grantees, the portfolio of interventions was supposed to be richer than it was to allow piloting and learning about different approaches.

Project participants in the case studies reported that the gender norms the grant facility targeted had changed, and that the changes have been sustained three years after the grants ended. This success in the intervention areas from the grants' efforts to address the social and gender disparities in the Shire River Basin is promising. However, a former MCA-Malawi staff member concluded that, overall, the grant facility was able to make only a minute contribution. The grantees worked with only a small portion of the entire population of the Shire River Basin. He also noted that, in the project areas, women still face inequity, which indicates that there is more work to be done.

g. Did the grant facility improve participation of both men and women in the implementation of ENRM activities?

The grant facility did improve participation of both men and women in the implementation of ENRM activities, but more for women. Stakeholders reported that there was interest in improving participation of both men and women in the implementation of ENRM activities. Some implementers and other stakeholders reported being surprised at the beginning of the grants, when most of the groups were being started, that women were stepping forward in large numbers, while men seemed to be shying away from the interventions. Many case study respondents reported that men did not think the interventions were for them. Women might have gotten involved in higher numbers because many men migrate to South Africa to work, or for other gendered reasons stemming from membership in matrilineal versus patrilineal groups. A former MCA-Malawi staff member reported that men appeared to want to see benefits of the interventions first. Regardless, over time the grantees were able to increase the participation of men, but never to the levels of women's participation. Nonetheless, successful interventions are now creating benefits for both men and women. As an example, a former MCA-Malawi staff member mentioned that in Mangochi both men and women have created businesses raising tree seedlings. The trees are in high demand, with many buyers and advance orders. Once this was shown to be successful, both men and women remained involved in the activity. In addition, the grant facility emphasized more equity in the division of labor and encouraged men and women to work together. Many participants in the case studies reported that more men and women were working together on ENRM activities due to the grant interventions.

VII. CONCLUSIONS AND IMPLICATIONS

Our final evaluation of the ENRM Project included in-depth case studies of five ENRM and SGEF grants and a performance evaluation of the grant facility. In this chapter, we summarize the key findings of the grants and grant facility evaluations, offer some implications for policy and practice, and describe next steps.

A. Summary of key findings

In Table VII.1, we highlight the key findings for each evaluation question.

Table VII.1. Grants and Grant Facility evaluation summaries

Evaluation questions	Key findings
FISD implementation	
Findings on FISD implementation 1. How did the institutional arrangements put in place by the grantees evolve over time?	• The water user association (WUA) continues to implement fair water sharing and access. • The following factors limit the WUA's overall success: – Water pumps breaking and the lack of capacity to fix them, relying on FISD to return to the communities for maintenance – Landowners with significant power over newly irrigated land, including the ability to determine the price at which others can access it – The inability to enforce land agreements, creating a risky system for renters • Those with access to newly irrigated land have been able to add a second harvest per year and diversify their crops. Their success has increased demand for irrigated land, and thereby increased its price, to landowners' benefit. • Land agreements with terms that are hard to enforce, and high rental prices have driven off some participants and prevented the poorest from taking part. • FISD remains involved in the communities and provides maintenance for the irrigation scheme. It is now expanding its activities through the following activities: – Creating a paid contract with farmers for repair and maintenance of the irrigation scheme – Selling a crop insurance scheme – Planning to expand the irrigation scheme and include more farmers • The FISD management was arrested for stealing money from a Government of Malawi program, and the future of FISD is in question. Therefore, there is some concern regarding the long-term sustainability of FISD interventions and the irrigation scheme due to their dependence on FISD's support. Overall, the institutional structures put in place operate well enough to enable those with access to irrigated land to succeed. However, the institutional structures overseeing the scheme lack the capacity and power to ensure that it functions optimally and skew benefits toward those already better off. The reliance on FISD for repair and maintenance of the physical infrastructure also leaves the sustainability of the scheme vulnerable.

Table VII.1. ***(continued)***

Evaluation questions	Key findings
Cross-case comparison study	
Findings on conservation agriculture and land management practices 2. To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? Were the farmers able to apply these practices appropriately since the end of the grants? a. Which land management practices are more readily sustained by farmers and communities, to what extent, and why? Are there differences in sustained adoption between male and female farmers?	• ENRM grant interventions led to widely sustained adoption of many conservation agriculture (CA) and sustainable land management (SLM) practices among project participants. • Most project participants have had the capacity, resources, and motivation to apply these practices appropriately since the end of the grants. • Spillover of CA and SLM practices in neighboring villages is reported for most widely sustained practices. • Three years after the end of the grants, the four most widely sustained land management practices are contour farming practices, tree planting, making and using manure compost, and mulching. • Women remain on the forefront of sustained adoption of CA and SLM practices. • Project participants who continue to adopt CA and SLM practices do so mainly because they experience financial and environmental benefits.
Findings on changes in gender roles in the household and communities and income-generating activities 3. To what extent did the intervention result in sustained changes in gender roles in the household and communities? a. To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? b. To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? c. To what extent did the intervention lead to sustained leadership opportunities for women? To what extent did the intervention promote sustained female-headed household involvement in community decision-making? d. To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities?	• SGEF interventions resulted in widely sustained changes in gender roles in households and communities three years after the end of the grants. • Increased leadership opportunities for women are the most widely sustained change and have the most spillover among nonparticipants in neighboring villages. • Participants are motivated to sustain shifts in gender roles by the benefits they experience, such as fewer arguments between spouses, spending that improves family well-being, and investments in farm production. The ability to sustain changes in gender roles is supported by the improved economic, leadership, and human capital changes resulting from the projects. • Spillover among nonparticipants is reported for most key activities and changes in gender roles inside participating villages and in neighboring villages. • VSLs remain the most popular grant activity; they are widely sustained, and their use continues to expand among participants and nonparticipants.

Table VII.1. ***(continued)***

Evaluation questions	Key findings
Findings on stakeholders' perceptions of the sustainability of grant activities 4. What are stakeholders' perceptions of the sustainability of grant activities targeting: a. improved land management? b. social and gender barriers? c. What factors were driving beneficiaries to continue to adopt SLM practices?	• Most participants are confident in the longer-term sustainability of CA and SLM activities. • The grant activity most likely to be sustained in the long term is the VSL, which remains popular and is expanding. • Respondents in all five cases think most of the gender-role changes in households and communities will be sustained into the future. • Benefits such as increased yields, income, and ability to attend to household well-being are main contributors to sustainability for all maintained activities. • Encouragement from local government agencies, local leaders, and trained community members supports sustainability of both types of activities.
Grant facility evaluation	
Findings on grant facility objectives 1. Which of the following objectives from the grant facility manual were and were not achieved by the grant facility, and why? a. Maintain ecological integrity of landscapes. b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation. c. Allow beneficiaries to innovate and implement technologies that have proved to reduce soil erosion. d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power). e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges. f. Address the social and gender disparities in the Shire River Basin. g. Improve participation of both men and women in the implementation of ENRM activities?	• The grant facility was not able to make environmental improvements noticeable at the level of the Shire River Basin, according to stakeholders, because only a small fraction of the land and people of the Basin were involved in the grant projects. However, stakeholders think that, with time, some of the interventions could make a difference locally. • The grant facility was flexible, allowed a certain amount of creativity and innovation, and supported organizations to initiate or expand efforts to address ENRM challenges. However, through its support, the grant facility mainly encouraged very similar interventions to be implemented across grants, losing the ability to test the effectiveness of different activities. • The grant facility supported efforts to improve control and sustainable management of resources by women and addressed social and gender disparities in the Shire River Basin. These activities also helped ENRM activities to succeed.

B. Implications for policy and practice

The ENRM and SGEF Activities and grant facility Sub-Activity were designed to address deforestation, poor land management, and limited opportunities of farmers in hotspot catchment areas. Through CA and SLM interventions and activities to support social and gender equity, the activities planned to encourage practices that would reduce sediment runoff, increase yields and revenue, and reduce gender inequities in access to resources. These outcomes were designed to ultimately increase the efficiency of hydropower generation and reduce poverty. Data from case studies where the interventions were well-implemented and well-received showed positive results for these interventions. Our findings suggest several lessons for the design and implementation of similar projects in the future, both in Malawi and elsewhere.

- **Aligning the participants' private economic incentives with environmental public goods and getting local buy-in are critical for successful implementation, adoption, and longer-term sustainability of ENRM activities.** The environmentally sustainable land management practices that project participants continued three years after the grants ended were those that also produced tangible economic incentives for participants. In addition, these practices were explicitly supported by local leaders, government agencies, and/or community members. Grantees successfully sought buy-in from these leaders and cultivated their long-term support for the activities, which helped implementation and long-term adoption.
- **Intentional programming of activities designed to affect gender roles in households and communities can successfully lead to sustained shifts in behavior.** It is well-recognized in the literature that empowering women by changing intra-household decision-making processes, overcoming traditional division of labor between the sexes, and giving women leadership opportunities usually follows a complex and lengthy path (Goldman and Little 2015; Mahmud, Shah, and Becker 2012). All five grantees made some difference in sustainably increasing women's participation in intra-household decisions on resource allocation, bringing about more equitable divisions of labor in both household and farm labor, and creating opportunities for women to take leadership roles in their communities. In all five cases, grantees used REFLECT circles to bring together male and female community members and facilitate discussions on gender inequity. Participants in all cases report sustained shifts in gender attitudes and gendered behavior due at least in part to the participatory sensitization processes that occurred in the REFLECT circles. REFLECT circles were also used for business, leadership, and literacy trainings for women, building women's capacity to influence decision makers and to make decisions and increase their participation in land management and other economic activities. Participation in VSLs and their management committees is reported to empower women both economically and socially, through leadership opportunities, increased economic autonomy, and self-efficacy in community and household decision making. The intentional and systematic implementation of SGEF interventions to increase women's access and control over productive assets and their role in decision making has created sustained change.
- **The integration of ENRM and SGEF interventions led to multiple, intersecting positive effects on gender equity and land management.**
  - **Success of the ENRM interventions was augmented by the success of the SGEF activities in all five case studies.** The case studies reinforce the literature showing that including SGEF activities can help ENRM activities achieve better results. Both women and men are intimately involved in using, caring for, and benefiting from natural resources. Ensuring that both men and women are integrated meaningfully into all aspects of ENRM intervention planning and implementation has been advantageous for achieving success in the ENRM activities. Ensuring women have the skills, time, decision-making ability, control over assets, and increased access to money allows them to be more active and successful participants in all ENRM activities. As women remain at the forefront of the ENRM activities, their participation has been essential in the ENRM activities' success.

- **Success of the SGEF interventions was augmented by including ENRM activities in all five case studies.** The skills and capacities that women acquired during the ENRM grant programs built self-efficacy and human capital. In some cases, women developed skills that their husbands did not have, increasing the value of their labor on the farm. The ENRM activities gave women and men the opportunities to work together and highlighted the usefulness of more equitable divisions of labor. The CA and SLM activities that resulted in increased yields and increased income gave women involved in the interventions reason to be more involved in household decision making regarding land and natural resource use and household finances. The ENRM activities also gave women opportunities for leadership, which built their own confidence and enabled others to appreciate the women's leadership skills.
- **Both the ENRM and SGEF activities contributed to women's income and livelihoods, which facilitated shifts toward more equitable gender norms.** The VSLs and IGAs gave women opportunities to make, save, borrow, and invest money. The CA and SLM practices also led to increased income via increased crop yields that can be sold for cash, savings from not needing to buy food, and practices that save money, such as using composted manure instead of fertilizer. Many participants in the case studies report that higher incomes increase their status and their claim to be more equal partners in household decision making and in a more equitable division of labor. Increased self-confidence also boosts their willingness and credibility as leaders. The effect of increased income and livelihood outcomes leading to more equitable gender norms was not hypothesized in the program's theory of change; however, program planners should consider this flow in designing future programs.

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Appendix A.

Research Questions

Evaluation questions - Interim	Where question is answered	Evaluation questions - Final	Where question is answered
Individual ENRM and SGEF grants' evaluations			
Evaluation Questions on Grant Implementation			
1. Which intervention was implemented and what was the program logic underlying it?	Velyvis et al. 2019	Fully answered at interim. Not applicable for final evaluation.	
2. How was the program implemented? a. How did implementation change from what was planned and why? b. Which implementation factors supported or hindered the completion of the intervention?	Velyvis et al. 2019	1. How did the institutional arrangements put in place by the grantees evolve over time? (This applies to FISD alone and relates to institutional arrangements related to their solar irrigation and water use agreements).	Velyvis et al. 2022
Evaluation Questions on Conservation Agriculture and Land Management Practices			
3. To what extent did the intervention lead to adoption of conservation agriculture and land management practices by farmers and communities? a. Which land management practices are more readily adopted by farmers and communities, and why? Are there differences in adoption between male and female farmers? b. Is it possible to differentiate between effective training approaches and practices that farmers are predisposed to adopt? If yes, are certain training methods associated with greater farmer adoption? Are different training methods associated with better results for male and female farmers? c. What was the relationship, if any, between ease of adoption, farmers' perceptions of effectiveness, and farmers' tendency to adopt different practices?	Velyvis et al. 2019	2. Part 1. To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? Part 2. Were the farmers able to apply these practices appropriately since the end of the grants? a. Part 1. Which land management practices are more readily sustained by farmers and communities, to what extent, and why? Part 2. Are there differences in sustained adoption between male and female farmers?	Velyvis et al. 2022

Evaluation questions - Interim	Where question is answered	Evaluation questions - Final	Where question is answered
Evaluation Questions on Gender Roles in the Household and Communities			
4. To what extent did the intervention affect gender roles in the household and communities? a. To what extent did the intervention lead to greater joint household decision making regarding land and natural resource management and household finances? b. To what extent did the intervention lead to changes in division of labor on the farm and at home? c. To what extent did the intervention lead to leadership opportunities for women? To what extent did the intervention promote female-headed household involvement in community decision-making?	Velyvis et al. 2019	3. To what extent did the intervention result in sustained changes in gender roles in the household and communities? a. To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? b. To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? c. Part 1. To what extent did the intervention lead to sustained leadership opportunities for women? Part 2. To what extent did the intervention promote sustained female-headed household involvement in community decision-making? d. To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities?	Velyvis et al. 2022
Evaluation Question on Types of Grants			
5. Were grants that focused more on ENRM or SGEF activities more or less effective than grants that targeted both types of activities?	Velyvis et al. 2019	Fully answered at interim. Not applicable for final evaluation.	
Evaluation Questions on Stakeholders' Perceptions of the Sustainability of Grant Activities			
6. What are stakeholders' perceptions of the sustainability of grant activities to improve sustainable land management and address social and gender barriers? What factors were driving beneficiaries to continue to adopt SLM practices?	Velyvis et al. 2019	4. What are stakeholders' perceptions of the sustainability of grant activities targeting: a. improved land management? b. social and gender barriers? c. What factors were driving beneficiaries to continue to adopt SLM practices?	Velyvis et al. 2022

Evaluation questions - Interim	Where question is answered	Evaluation questions - Final	Where question is answered
ENRM and SGEF grant facility evaluation			
Evaluation Questions on Implementation			
1. How was the grant facility activity implemented? a. Was the grant facility implemented as planned? Why or why not? b. Which implementation factors supported or hindered the effectiveness of the grant facility? c. Did the grant selection process prioritize interventions based on the recommendations of the Middle and Upper Shire Baseline Assessments and Action Plan? Why or why not? d. Was the process guided by clear, fair, and transparent principles, leading to the selection of the most qualified applications? Why or why not? What were those principles? e. Was grant oversight sufficient according to stakeholders? Why or why not? f. Was the decision to establish a grant facility economically and programmatically efficient? What were the alternatives?	Coen et al. 2019	Fully answered at interim. Not applicable for final evaluation.	
Evaluation Questions on Achievement of Grant Facility Objectives			
2. Which objectives from the grant facility manual were achieved by the grant facility and which were not, and why? a. Did the grant facility objectives capture the recommendations in the Upper and Middle Shire Baseline reports?	Coen et al. 2019	1. Which of the following objectives from the grant facility manual were achieved by the grant facility and which were not, and why? a. Maintain ecological integrity of landscapes. b. Reduce soil erosion that contributes to sedimentation and aquatic weed infestation. c. Allow beneficiaries to innovate and implement technologies that have proved to reduce soil erosion. d. Improve control and sustainable management of resources by women and vulnerable groups (decision-making power). e. Support organizations to initiate or expand their efforts in addressing the environmental and natural resources management challenges. f. Address the social and gender disparities in the Shire River Basin. g. Improve participation of both men and women in the implementation of ENRM activities.	Velyvis et al. 2022

Appendix B.

Training Support for Partners Case Study

Training Support for Partners

Network for Learning and Innovation

Training Support for Partners Case Study

Training Support for Partners (TSP), a nongovernmental organization in Malawi, received a grant of $438,701 from MCA-Malawi to implement interventions focused on improving sustainable land management (SLM) in the Upper Rivirivi River subcatchment area in Ntcheu District, specifically in Traditional Authorities Mpando and Champiti, from 2015 to 2018. The table below lists grant activities.

Project title	Integrated Approaches to Natural Resources Management and Conservation for Sustainable Hydropower Project Grant: $438,701
Subcatchment	Upper Rivirivi River Two traditional authorities
Summary of activities	**ENRM** • Provide trainings on sustainable land management and soil conservation practices, including contour marker realignment and box ridge construction, vetiver grass planting, and tree planting • Provide trainings in the use of mulch and organic compost manure • Advocate for sustainable land-use practices at village government meetings • Establish clan forest areas and village forest areas • Promote alternative income-generating activities (such as beekeeping) and interest in and demand for a smart, fuel-efficient cooking stove. **SGEF** • Provide training in advocacy and lobbying for ENRM activities, including appointing and training women ambassadors • Establish REFLECT circles to support project implementation • Establish early child development centers to promote ENRM activities and child literacy • Teach adult literacy classes **1.** Establish and train Village Savings and Loans (VSL) groups

This case study presents results of the TSP grant as of 2021, three years after the close of the Malawi compact in 2018. We derive the results from key informant interviews and focus group discussions we conducted in July and August 2021 with program implementers and participants in two villages. This final case study updates key findings presented in the interim evaluation (Velyvis et al. 2019) and presents new findings about expansion, sustainability, spillover effects, and unexpected outcomes from the TSP grant.

Figure B.1. Reduced ridge spacing

We found that in the three years since the TSP grant ended, participants in the intervention villages where we collected qualitative data have sustained adoption of most of the ENRM activities implemented. The most popular have been planting vetiver grass; using sustainable land management and soil conservation practices, such as constructing box ridges; and maintaining tree woodlots. Women most actively sustained both SGEF and ENRM activities, both as participants and leaders, and still enthusiastically support and participate in VSLs. Women and men interviewed reported an increase in women's involvement in household decision making and the more equal division of labor within homes.

This final case study is organized by evaluation question and ends with a discussion of the logic model.

Summary of key findings

Findings on conservation agriculture and land management practices

- Participants have sustained adoption of conservation agriculture and sustainable land-management practices with spillover reported in tree planting, vetiver grass planting, contour ridge construction and realignment, use of compost manure, and use of fuel-efficient cookstoves.
- Participants cite reduced erosion, increased crop yields, and increased income from the sale of surplus crops as the main reasons for continuing sustainable land-management practices.

Findings on changes in gender roles in the household and communities and income-generating activities

- Increased joint decision making regarding household finances and land and natural resources has been widely sustained, and spillover to neighboring communities is reported.
- Women have increased their financial independence through VSLs, making them better-informed participants in household financial decision making.
- VSLs remain active and popular in communities, including many outside of the original implementation area, but REFLECT circles have decreased in availability and popularity.
- Most program participants interviewed report sustained increases in more equitable division of labor, both in homes and on farms, with spillover to neighboring communities.
- Women are taking on more leadership roles and interviewees reported spillover in neighboring communities.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Most respondents report that they are confident ENRM practices will continue, given their economic and environmental benefits, the high level of community buy-in, and the continued work of women ambassadors.
- Respondents largely agreed that they will continue with gender-equality principles taught by TSP, given the benefits they have seen in their families and communities.
- Respondents are confident VSLs will continue, given the financial benefits participants experience through the groups.

Findings on conservation agriculture and land management practices

The evaluation questions guiding this section focus on the sustained adoption of grant-promoted ENRM practices three years after the TSP grant ended and stakeholders' perceptions of the sustainability of these practices into the future. For a complete list of the evaluation questions, please see Appendix A. Each evaluation question will appear in green before the relevant subsection. We have found that motivated by the benefits of these practices, participants have sustained many of the conservation agriculture (CA) and SLM practices. ENRM activities including contour farming, vetiver grass planting, and making compost manure were among the most readily sustained, and interviewees reported that these practices spilled over in neighboring nonparticipating villages. Stakeholders were confident these practices would continue, because they provide financial and environmental benefits.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? (EQ 2 [Part 1][15])

TSP grant participants estimated that approximately 70 to 80 percent of community members in TSP's original implementation area continue to implement conservation agriculture and land-management practices. Table B.1 summarizes the extent to which the practices and activities were adopted at the end of the compact and three years after the close of the grant, as reported by respondents.

Table B.1. Adoption and sustained adoption of activities

Practice activities	Interim	Final
Contour farming practices (ridge alignment, etc.)	✓✓	✓✓✓ ⊞
Tree planting	✓✓	⏸
Making compost manure	✓✓	✓✓ + ⊞
Mulching	✓	⏸
Vetiver grass	✓✓	✓✓✓ +
Forest management/ natural conservation/ clearing brush and making firebreaks	✓✓	✓✓
Establishing woodlots	✓✓	✓
Crop diversification	✓	✓
Crop rotation	✓	✓
Gully reclamation	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

⊞ Spillover among non-participants in other villages

Which land-management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2.a [Part 1])

More readily sustained practices

TSP grant participants most readily adopted and sustained contour ridge realignment, box ridge construction, vetiver grass planting, manure fertilizer production, and management of forest areas and woodlots. Community

[15] Numbers listed after evaluation questions refer to which evaluation question is being answered.

observations during data collection confirmed that farms had box ridges or realigned ridges, and many farms were demarcated by vetiver grass and trees.

Figure B.2. Vetiver grass planted to act as a farm boundary

Planting vetiver grass continues to be an extremely popular SLM practice. One community leader credited the introduction of the grass to the community entirely to TSP, stating that without TSP, his village would not have known about or had access to the grass. The grass not only helps prevent erosion, it is also participants' new preferred thatching material for houses and a feed source for livestock. The grass has produced additional income as participants noted selling it to other villages and communities as thatching material, livestock feed, or live grass seedlings for their own implementation (or other organizations' implementation) of erosion control practices.

"The planting of vetiver has helped us a great deal in controlling soil erosion. In the event of excessive rains, our crops used to be washed away by the floods. There was little or nothing we could do in order to control soil erosion. But with the…planting [of] vetiver, the rate of erosion has been tremendously reduced in our fields." (CL_M1)

TSP conservation agriculture practices provided multiple economic and environmental benefits, according to project participants interviewed at endline.

Participants interviewed consistently stated that they continued to implement anti-erosion practices, such as constructing box ridges, planting vetiver grass, and planting trees.

"The planting of vetiver has helped us a great deal in controlling soil erosion. In the event of excessive rains, our crops used to be washed away by the floods. There was little or nothing we could do in order to control soil erosion. But with the…planting [of] vetiver, the rate of erosion has been tremendously reduced in our fields." (CL_M1)

Reduced runoff, increased moisture retention, and improved health of soil in fields have led to higher crop yields (mainly maize), more food for participants' families, and increased income from the sale of their crop surplus. One female participant shared that she went from harvesting three oxcarts of crop produce in 2019, to three and a half oxcarts in 2020, and by July 2021, had harvested five oxcarts of produce from her crops. Participants reported needing less water for crops because of SLM practices and reported longer growing seasons for crops that further contributed to higher crop yields, thanks to reduced water shortages and more water for irrigation farming. One male focus group participant spoke positively about his experience with crop rotation leading to higher yields, as it improved the fertility of his soil. Before implementing crop rotation, he reported that his yields were decreasing each year.

"I am heavily applying these practices because I have seen the benefits. I saw that when a small plot of land has been cultivated in [the] right way, applying the right [amount] and enough fertilizer and you constructed the box ridges, when the rain falls…maybe it stays for one or two weeks without [raining], the water is absorbed in the ground, which leads to having a good growth of maize…and we harvest a lot [more] than we were…in the past." (CL_M3)

But after implementing crop rotation, he reported that his yields have been steadily increasing and producing additional income from the sale of his crop surplus. Female focus group participants mentioned using this additional income to pay children's school fees and to repay small business loans from VSLs.

Participants stated that continued **use of manure to fertilize crops has improved soil health (and reduced runoff of manure fertilizer thanks to implementation of anti-erosion SLM practices) and has made it economically achievable to use manure fertilizer on a whole field.**

Why were some land-management practices more readily sustained?

In addition to the visible economic and environmental benefits of adopting these practices, participants cited TSP's novel method of delivering the project through hands-on trainings jointly with community leaders and community members as a reason CA and SLM practices have continued and expanded. Participants felt that they were able to sustain engagement with community leaders and members who were also implementing practices, because they all received the same training at the start of the project. In addition, ENRM women ambassadors continue to discuss land and natural resource management and actively encourage adoption and continuation of SLM practices in their communities. Ambassadors are still highly regarded and viewed as SLM experts in their communities by men and women, including other community leaders.

Figure B.3. Ridge realignment and box ridging on a farm

Participants valued SLM practices for their environmental impact, particularly on the health of the river and waterways. Two community ENRM leaders (one male and one female) and two male focus group participants cited water that is visibly clearer with less mud and trash. The participants also noted that the river flow is more reliable, even when there is less rain.

> *"I saw that they are not from our village, but they have managed to do what we do. I saw it as a good thing…I found them taking care of the trees. In the other area, I found that they planted pigeon peas together with cassava. It was a farm [that] was rented, and the owner was making the ridge realignment. We recognized that the practices are the ones we do in our community." (FG_F1)*

Less readily sustained practices

Participants value community woodlots, but communities lack the materials needed to continue sowing seeds in nurseries to continue planting trees. Participants in two Group Village Heads (GVHs) noted that they no longer have access to planting tubes and tools, such as watering cans and

wheelbarrows for sowing and caring for seedlings. So instead, they focus on maintaining already-planted trees in their community woodlots. Community members value woodlots for their cooling properties and because they act as windbreaks. In interviews, participants also claimed to observe a relationship between woodlots and power generation: the increase in trees improves rainfall, leading to better harvests, and protects the river by reducing siltation, thereby reducing blackouts and improving power generation for life-saving places, such as hospitals (Note: This claim might reflect TSP training that shows CA and SLM improves electricity generation. We do not have evidence to support this claim).

Communities have bylaws to enforce protection of the forests from fire and cutting, but enforcement has been difficult when individuals outside of the community cause the destruction. In one GVH, hunters started a bushfire in the community woodlot. As the interviewees noted, no one knew the hunters. Thus, the community could not impose fines or punish them. A land dispute in the other GVH resulted in a woodlot fire, and the ENRM leader for the area reported that community leaders were meeting to address the issue and offer more protections for the woodlot going forward. Most participants interviewed cited the bylaws when asked about the sustainability of their forests, but several also noted that threats from non-community members make it harder to enforce the laws.

Some focus group participants in one GVH noted that they had largely discontinued mulching, as they discovered snakes preferred hiding in the husks, posing a risk to farmers. Some farmers also noted that the mulch was a breeding ground for crop-destroying armyworms, further incentivizing them to discontinue the practice. Participants also noted that mulching was labor intensive, as it requires moving husks around the farm; as a result, many farmers are unmotivated to continue the practice. However, another focus group participant in the same group mentioned it when speaking of the practices that he continues to implement, so not all community members have discontinued the practice.

Spillovers and replication

Interviewees agreed that there has been widespread spillover to nonparticipants within their communities, as well as neighboring villages and communities as far as Mozambique (approximately 40 miles away). One female ENRM leader estimated that 60 percent of community members in neighboring villages have started following the SLM practices introduced by TSP, including contour bands, ridge construction, production and use of manure fertilizer, and vetiver grass planting. Nonparticipants' adoption of these techniques was largely driven by seeing the benefits they brought to participants, such as increased crop yield, increased income from the sale of crop surplus, and a better ability to protect community woodlots by enforcing fines.

SLM and CA practices continued largely as TSP taught them, but community members expanded the community woodlot to the school. Most respondents reported continuing SLM and CA practices as taught by TSP, mentioning expansion mainly in regard to vetiver grass's multiple uses (for anti-erosion, livestock feed, and thatching material), and with the expansion of a community woodlot to a school. In one GVH, community members planted and maintained not only a community woodlot but a school woodlot, as well. Using seeds and tubes provided by TSP, teachers and parents sowed seeds and planted seedlings for the woodlot. Children are now helping maintain the woodlot and planting trees, which helps them learn about conservation practices. Participants stated that they hoped using the woodlots as a teaching tool at school would encourage children to practice conservation while attending school instead of skipping school to work on farms.

Figure B.4. School woodlot

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2 [Part2])

Participants reported that they were largely able to apply SLM and conservation practices appropriately since the end of the grant, except in mulching and tree planting. Practices that have been applied since the end of the grants, such as box ridge construction, vetiver grass planting, and contour bands, have followed the practices TSP taught in their original trainings and implementation. This finding was reported by participants and confirmed in community observations. Interviewees reported discontinuing mulching due to unintended negative consequences (snakes hiding in the mulch and armyworms breeding in the mulch) even when they applied the practice appropriately. They discontinued tree planting in many areas, because they lacked supplies for sowing seeds and had limited access to funds to replace the tree planting supplies in nurseries.

Are there differences in sustained adoption between male and female farmers? (EQ 2.a [Part 2])

Although both women and men are implementing SLM and conservation practices, women adopted them at a higher rate than men according to numerous estimates from participants. One female community leader estimated that 80 percent of women and 60 to 70 percent of men in her community had implemented the practices. She estimated that before the project, only 30 percent of men were engaged in SLM and conservation practices. Women face more problems caused by environmental degradation, because they collect firewood for cooking and water for their family, and they travel farther when it is scarce. Women are also more likely than men to use maize mills and are more impacted by blackouts that cause electrical operations to cease at those mills.

> *"The woman is the one who was encountering a lot of problems as compared [with] men…because the woman went to the grind mill and there [have] been blackouts and…it was really hard for the woman. When a household…did not adopt good practices of farming, they harvested a small yield. The woman is the first person to be affected by hunger, because she is the one who stays with the children all day. This is what makes the woman join the groups, because she sees and feels the pain of the hungry children when the man is not around. This is why women are more involved than the males." (FG_M2)*

Female heads of household are still some of the most active practitioners of SLM practices according to men and women interviewed. Multiple male and female focus group participants noted that the additional income from the higher crop yields and firewood from trees on the land of female heads of household is particularly crucial to their families, motivating many of female heads of household to continue implementing SLM practices.

Findings on changes in gender roles in the household and communities and income-generating activities

The evaluation questions guiding this section explore the extent to which SGEF activities resulted in sustained changes in gender roles in households and communities three years after the TSP grant ended. We also address questions about stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers into the future. We have found that there has been a sustained equitable division of labor on farms and in homes. The community has reported spillover of increased joint household decision making. These changes have been sustained due to the benefits households perceive, women's increased income due to income-generating activities, and the continued encouragement of local leaders. Stakeholders were confident these changes would continue in the future supported by the continued financial benefits of VSLs and the encouragement of community leaders.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3)

TSP grant participants reported widespread continuation of gender-equality practices emphasized in TSP's trainings. VSLs supported joint household decision making with finances, and men's and women's attendance at REFLECT circles earlier in the project helped sensitize communities to the value of women's voices in decision making. Men and women interviewed reported a more equal division of labor in their households and further acceptance of women in leadership roles. Participants reported spillover of gender-equality principles in surrounding communities, frequently mentioning the popularity of VSLs, which have expanded in membership and number in and outside of their communities.

Table B.2. Sustained changes in gender roles in the household and communities

Gender roles	interim	Final
Increases in joint household decision making regarding…		
Land and natural resource management	✓	✓✓
Access and management of assets for a living	✓	✓✓
Household finances	✓	✓✓+
Changes in division of labor on the farm and at home	✓	✓✓+
Leadership opportunities for women	✓	✓✓+⊞
Female-headed household involvement in community decision making	✓	✓✓

✓ Adopted/Sustained
✓✓ Widely adopted /Widely sustained
\+ Spillover reported among non-participants in the same villages
⊞ Spill over among non-participants in other villages

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a)

Household decision making—land and natural resource management

Female and male participants interviewed reported continued joint household decision making regarding land and natural resource management, with women increasing their involvement in decisions on land compared with before TSP's involvement. At the interim evaluation, men and women reported sharing responsibilities

for managing land and natural resources and for making decisions. Participants reported that this practice has continued in many households. Women and men reported joint decision making on tree planting, acquiring and caring for livestock, practicing SLM on their land (such as applying manure fertilizer), and planting and caring for crops. Two male participants noted that decisions regarding tree conservation have been more difficult, because some men value trees for building materials and charcoal production, while women value trees for the firewood they need for cooking. (Building materials and charcoal require the cutting down of trees, but firewood can be obtained by harvesting only the trees' branches.)

> *"Before the project, when men had money, their mindset was that the money belonged to himself, but after receiving the training from [TSP]…men realized that the money belongs to everyone in the family. We took it as, "Because it's in our pockets, it's ours." …But when [TSP] came, they taught us…and right now, the little money we find, it is benefitting the whole family." (WH_F1)*

Household decision making—household finances

Nearly all male and female interviewees agreed that there has been widespread change in household discussions and decisions regarding finance, with women now included in financial decision making. According to participants, men were making all decisions about household finances before TSP's involvement. Both women and men reported that before TSP's trainings and interventions, men would keep all money from crop sales or businesses, and would not disclose or share the income with their partners. Couples reported a shift, noting that they now make decisions on finances together and hold a mindset that the money belongs to the family rather than the man alone. Multiple participants estimate that more than half of households in their village were now making financial decisions jointly. (Women tended to estimate higher, around 70 to 80 percent, while men were estimating somewhat lower, around 50 to 60 percent.) Men and women at interim also reported increased involvement of women in financial decision making.

> *"Right now, when money is found, people are able to sit down together and budget on what to do with the money…Back then, it would just stay in the man's pocket, and you would just see that he has bought this and that—real power. …We can see the examples that show that there is unity concerning finances. People are able to do big things, and the arguments concerning money in the families ended…Men understood that doing things together is very important." (WH_F1)*

Women reported feeling more empowered to make economic contributions, increasing their involvement in commercial farming, businesses, and economic groups and associations (like VSL groups) compared with before TSP's implementation of activities. Male participants valued their partners' contributions to their households' incomes greatly and expressed relief that they were no longer the sole financial providers for their households. Both male and female participants reported that joint household decision making has benefitted households in the form of more livestock, metal roofs for houses, more wood, and fertile fields, both because of budgeting and because of women being more involved in the household's financial decisions. One female participant noted that she has seen one household in her community make home improvements, pay for their children's education, and upgrade from a bicycle to a motorbike not because of a sudden increase in income, but because they were sitting down to budget, set goals, and make decisions together as a family.

Female participants valued being able to influence decisions about where money is spent and being able to put it toward materials for farming assets and toward children. They also reported increased confidence and satisfaction in their homes with their more prominent role in economic decision making. Many women interviewed also reported that they feel that they are now able to openly communicate their ideas and preferences to their partner, and that what they share is better respected by their partner. Multiple women and men also shared that marital disputes had been lessened with increased open communication and decision making regarding finances, with one woman stating that domestic abuse had decreased as a result. Women participants shared that they felt better respected with their contributions to decision making than in the past and have seen changes continue even after TSP's implementation ended. Participants felt that both partners were now both responsible for the financial goals of their household and can hold each other accountable to those goals. (Previously, men expressed that they felt solely responsible for financial provision in the household.)

Like at the interim evaluation, **participants still credited the shift in increased female involvement in household financial decision making to the skills and lessons learned from VSLs and REFLECT circles.** Participants also attributed the success of continued joint household decision making to the women ambassadors who have continued to promote both ENRM and SGEF practices after TSP's implementation closed.

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b)

Female and male participants agreed that there have been widespread changes in the division of labor on the farm and at home, mainly involving greater acceptance of the interchangeability of roles and division of tasks between men and women. Participants estimated that 60 to 90 percent of households now divide tasks on farms and in households regardless of gender, with one male community leader noting that adoption is higher among younger people. He attributed this trend to traditional gender norms being more engrained among older community members.

> *"Back then… the field was for the man. The chores for the house were for the woman… Right now, there is change. The man is able to take part in the household chores, the woman is taking part in the labor on farms." (WH_F1)*

The most common changes reported by men and women interviewed involve men being more involved in household chores previously given only to women and women being more involved in farm chores previously given only to men. The household tasks women were performing, including childcare, cooking, fetching water, cleaning, and laundering, were seen as chores for women; men did not view those chores as their responsibility. Women interviewed reported a major shift following TSP's trainings and the community's involvement in groups like REFLECT circles, with men taking on different roles on farms and increasing their share of household responsibilities. On farms, women reported that men are now carrying firewood, farming tools, or children with women when their work in the fields is done for the day. Before the trainings, these responsibilities belonged solely to women. Men reported that women now assist with farming tasks that were previously seen as men's responsibilities, including harvesting crops, constructing ridges, and watering. Men reported that when they are sick or engaged in other business, they feel confident their wives can execute the farming tasks as well as they can. Women reported that men are sharing more in the chores and housework within their households, fetching water, cooking, sweeping, and caring for children.

> *"Apart from giving birth and breastfeeding… work that a woman does, a man can also do." (FG_F2)*

With a more equal division of responsibilities, women reported spending less time on household chores, and men reported spending less time on farming tasks. Women reported using the time that they previously spent doing household chores on endeavors including community development, resting, and self-care. Men reported being able to accomplish more on their land faster, because women are helping with farm tasks men were previously doing on their own.

> *"In REFLECT circles…we were teaching each other, enlightening each other [about] the pain women go through when they [are] under pressure with work while the man is just sitting. How is this going to affect the woman`s life? So the man…sees those problems and thinks about…their welfare, the way it is supposed to be, and we now know that women were abused." (CL_M2)*

Participants reported that the change in division of labor occurred not only among parents in households, but among children, with parents dividing household chores among children regardless of gender. Before TSP's training, girls were helping with the same tasks previously done solely by women in households, such as sweeping, washing dishes, and drawing water, while boys, like men in households, were not expected to do the same. Women reported that boys are now doing chores alongside girls in families and are confident that with their parents' example and the shift to men taking on more household responsibilities, a more equal division of labor in homes will continue.

Participants reported that the sharing of specific responsibilities within homes and on farms has changed and believe that mindsets surrounding gendered norms in division of labor have also shifted. Men and women reported feeling shamed and judged by community members in the past when husbands were seen doing "a wife's tasks" in the home or wives were seen doing "a husband's tasks" on the farm. Participants attribute that embarrassment to initial hesitation to implement a more equal division of tasks in the home, but reported that as more people adopt the changes, it becomes easier for people to embrace change without fear of judgment. Even so, one male participant reported that this fear of judgement still exists, mostly among men. Some men remain hesitant to embrace the changes in division of labor, indicating that some community members are still holding on to long-entrenched gendered division of labor norms.

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c [Part 1])

Participants report a widespread increase in leadership opportunities held by women and in community support for women taking on leadership roles. Women are now holding leadership positions that prior to TSP's involvement were held primarily by men, according to participants. These roles include Group Village Head, chairperson, treasurer, and secretary positions. Participants also report an increase in women holding leadership positions in Village Development Committees (VDCs), Area Development Committees (ADCs), school committees, health surveillance committees, churches, and the Red Cross and Disaster Risk Management Group. Chiefs are choosing more women for positions, and more women are now becoming chiefs. Participants reported that many community committees, such as VDCs and ADCs, have adopted a 50/50 approach, requiring that women hold 50 percent of the committee's leadership positions. Participants

reported that women increasingly hold more than half of the committee positions and leadership roles in their communities.

Many women and men interviewed reported that their communities prefer women in leadership roles. Women are viewed as more trustworthy leaders; multiple participants reported that women who hold treasurer positions are not stealing money, unlike men who previously held the position. One male participant also reported that women in leadership positions are organized and visionary, with greater foresight than some of their male counterparts. Participants also believe women to be more reliable and relatable leaders, because they have experienced the same problems as many women in their communities and are able to lead the problem-solving to find solutions.

Women reported that their confidence has increased because of the trainings they have received and because of increased leadership opportunities. They reported speaking up more in community meetings and putting themselves forward for more opportunities. In the home, women reported that they no longer hold the belief that "men are always right, and women are always wrong." They have gained the confidence to share their ideas in their homes and report a decrease in marital conflicts.

"A woman is not supposed to look down on herself and…a woman can…control everything just like a man does...Some women are in positions that back then we thought [could only] be held by a man, and [now] women are doing it. That's why most women are motivated [and] are confident of themselves. If we give them any task, they'll probably do it, or give them any position, they'll do it." (WH_F1)

Men and women interviewed credited the increase in leadership positions held by women to TSP's gender-focused trainings and mentioned REFLECT circles, including adult literacy classes, and VSL groups. Male participants reported that women's involvement in leadership positions increased as their education increased through REFLECT circles and adult literacy classes. Women spoke positively of REFLECT circles and felt that the circles offered a space to teach each other, learn from each other, and encourage one another as women. Female and male participants reported that VSL groups gave women access to more financial capital, thereby increasing their decision making power in homes and communities.

Participants reported that because trainings were offered to men and women together, everyone was able to confront their biases and slowly adjust their mindset about women holding leadership positions. Participants noted that because women were so highly involved in VSLs, REFLECT circles, and implementation of SLM practices, community members grew confident that women could also be involved and capable leaders.

"At first, [women] were given positions…[and] were refusing the positions because they knew …people would not listen. But now, men have noted that they have to accept that a woman should lead. When we [look at] positions in the village or Village Development Committee, we do have women [in] good positions which are in front…Women are taking positions [that] are important and big, and people are following and appreciate that they lead." (CL_M2)

Men and women reported that seeing the success of TSP-appointed women ENRM ambassadors in their roles in communities was key to women taking on more leadership opportunities in other areas. Women were motivated and encouraged by seeing other women in leadership roles, and men were able to see women succeeding in these roles. As women gained more leadership positions, women reported feeling increasingly capable of putting themselves forward for similar positions, and community mindsets shifted and grew more supportive of women in leadership roles.

Some community members persist with stigmatized viewpoints of women in leadership. One female participant interviewed noted that in her community, women in leadership positions have been called prostitutes, because they interact with many people regularly and work closely with men on committees. Several men interviewed also shared similar anecdotes of backlash against women in leadership positions but noted that these mindsets are becoming less common as more women take on and successfully execute their leadership roles.

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c [Part 2])

Participants interviewed estimated that more than half of the leadership positions held by women are held by female heads-of-household, who are recognized as capable, hard-working, independent, and encouraging leaders in communities. Women interviewed reported that TSP's training, which was given without regard to marital status, helped all women—whether widowed, married, or unmarried—feel more empowered in their ability to lead within their communities. Participants also reported that groups like VSLs and REFLECT circles have given women an important communal space to discuss gender issues and encourage each other to take on more community leadership roles.

Women's participation in income-generating activities

Table B.3. Sustained adoption of income-generating activities and SGEF practices

Practice/activity	At interim	At final
REFLECT circles	✓✓	⏸
VSLs	✓✓✓	✓✓✓ + ⊞
Income-generating activities	✓✓	✓✓✓
Cookstove production	✓✓	✓✓ + ⊞
Beekeeping	⏸	⏸

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

Although there was no evaluation question on women's participation in income-generating activities, it is an important outcome of program activities. Part of the Theory of Change included building skills and opportunities to engage in alternative income-generating activities. Because the results in this area were significant, we report them below.

VSLs continue to be popular and fast-growing. These are composed mostly of women, and have increased members' awareness of economic rights, increased access to loans, and improved involvement in family decision making, especially in relation to finances. Most interviewees reported that the number of VSLs in their communities and surrounding areas has grown consistently since the beginning of TSP's involvement. Participants who are members of VSLs reported using loans and savings from VSL investments to buy food,

pay children's school fees, establish and grow businesses, buy farm inputs, and make home repairs and improvements. Multiple male focus group participants attributed a decrease in hunger and increase in educational achievement of their children directly to the loans their wives received from the VSL groups. Men interviewed spoke highly of VSL groups, and beyond the benefits of the loans, also appreciated the decreased pressure of no longer being the sole providers of income for the home, because most women were actively involved in VSL groups. VSL groups have also given members a platform to learn new skills from each other, and many women appreciated that they offered an opportunity to associate with and socialize with other women, which they felt was lacking before these groups were established.

VSL groups were particularly important for female heads-of-household to receive loans to start small businesses. Participants reported that female heads-of-household were often the leaders of VSL groups and some of the most active participants. As the sole providers of income for their households, they greatly valued the access to loans VSLs provided.

Although VSL groups continue to be popular, grow in membership, and expand to surrounding areas, some face threats because of financial strain related to COVID-19. One community leader interviewed reported that the number of VSL groups in their community decreased from six to four, because members' financial troubles increased as a result of COVID-19, resulting in a higher rate of loan repayment default in the VSL groups. Another community leader stated that they started managing their VSL groups more closely to curb the trend toward rampant defaults.

Woodlots have provided an additional source of income, as many women gather and sell firewood from matured trees. Women reported that because they know how to grow trees, they can comfortably sell firewood from more mature trees, knowing that they have planted more trees to replace them. One female participant stated when referring to her sale of trees and vetiver grass, "We are preserving the natural resources and at the same time we are getting money" (WH_F1). Women also reported selling tree seedlings as another source of income but noted that the lack of supplies for nurseries has threatened that income source.

> *"A lot of us did not know how to do business. We were depending on harvesting and selling beans and using the money for household use, but because this project introduced VSLs and planting trees and the like, it changed people because they are accessing money easily. Maybe someone wants firewood, he/she will come here and buy two trees, that person will find money and use it while in the past…there were few that…had trees, or you would go to the mountain, steal one tree, and come here to sell." (FG_M3)*

Interviewees had a more mixed response regarding appropriate application of beekeeping among communities. Some participants reported that their community beehives had been destroyed, largely by fires in woodlots. Multiple interviewees cited the lack of supplies (such as beekeeping suits and honey bottles) and lack of proper training as the main reasons beehives failed to thrive in their communities and as particularly detrimental to properly harvesting and selling of honey.

In communities where beehives still existed and were maintained, community members often sold honey, providing another source of additional income. Participants reported that sales from their honey harvests were distributed among the beekeeping club's members and put into the club's savings. One male participant said that instead of producing

charcoal, he is now maintaining beehives to supplement income through honey sales, which doubles as a protective measure for the woodlots where the beehives are kept. Women participants reported taking the income from the sale of honey to VSLs to apply for loans to start small businesses and reported that they were adopting better beehive harvesting techniques to encourage sustainable beekeeping and avoid destroying hives. However, multiple participants reported that membership fees for beekeeping cooperatives can be very high and difficult for people to attain, especially for younger community members with less money.

"Burning of charcoal was high…because we didn't have an alternative way of finding money, but now when we have conserved the forest reserve…we hang beehives from which…we harvest honey, so instead of going to cut down and burn trees, we just go and harvest honey, hence we have conserved the trees and that is helping us as we are seeing that the project had left us a hidden treasure." (FG_M1)

Participants agreed that community members, especially women, have widely continued the use of fuel-efficient cookstoves in their homes. Of the two interviewees (one a community leader and the other a community member) who were asked about continued use of fuel-efficient cookstoves, both estimated that nearly all households in their village and surrounding areas use the cookstoves introduced by TSP, and community observations confirmed that the households observed were using fuel-efficient cookstoves. Women focus group participants appreciated that the cookstoves allow for faster, safer, more economical, and more reliable cooking. The stoves require less firewood and can free up a woman's time previously spent collecting the wood needed for cooking.

Figure B.5. Fuel-efficient cookstove

The stoves produce less smoke and cook more food, faster. Participants noted that the stoves are durable and can be easily repaired or refurbished. One female ENRM leader noted that the stoves have made cooking in homes easier for both men and women. Participants also noted that energy-efficient cookstoves were extremely popular and their use had spread to neighboring villages.

"[The cookstove] has helped because [it] saves firewood…this Changu-Changu (cookstove) has helped the destruction of trees that was there because of the firewood problem. Because with three pieces of firewood a person can…cook…and it has also helped in the family, the woman [and] the man…are both cooking..." (CL_F1)

Participants reported that there is now an export market for the alternative crops TSP promoted planting when a market was lacking in the past, and many are now earning supplemental income from the sale of pigeon peas, groundnuts, and soybeans. Vetiver grass, while not promoted as an alternative crop originally by TSP but introduced by TSP, has also been a popular source of additional income for participants.

> *"In the past, these other crops were not taken as something important and marketable, but now we have markets for the crops…[and] we get money when the crops are on the markets…and improve our finances. It was easy to adopt these things." (FG_M1)*

REFLECT Circles gave women the opportunity to attend literacy, financial and budgeting, and mathematics classes, better preparing them to start businesses. Many REFLECT Circles have now paused or stopped because of the pandemic and decreasing attendance or availability, but many interviewees cited them as an important step in their ability to start businesses.

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d)

Participants noted that community members outside of the original intervention areas were inspired to adopt ENRM and SGEF practices when they witnessed the positive environmental, economic, social, and community outcomes of those who had implemented changes in their communities and homes. Participants reported that neighboring villages have increased leadership opportunities for women, started and expanded VSL groups, implemented joint decision making in households, and adopted more equal divisions of labor in their homes. Women reported that community members in surrounding areas have witnessed how successful women have been as leaders in implementing areas and are giving women more opportunities to fulfil leadership roles in their own communities. VSL groups have been a popular practice that has spread rapidly to neighboring areas, where community members have been eager to reap the benefits of loans. Participants also reported that community members in nearby areas have witnessed positive changes from men and women making decisions together and working together in their homes and have since adopted many of those practices.

> *"Women are admiring how their friends [are] progressing from the village savings and loans associations… so they also want to join… so that they will be getting their shares." (FG_F3)*

Findings on stakeholders' perceptions of the sustainability of grant activities

This section examines respondents' perceptions of the sustainability of grant activities into the future. We look at the sustainability of land-management practices, SLM practices, and grant activities targeting social and gender barriers. We also look at the unintended consequences of this project. Figure B.6 summarizes how the project's logic model held up in the years following the intervention. Financial benefits remain the main motivator for sustaining SLM activities. Participants also remain optimistic on the sustainability of SGEF activities, because there is high community regard for women's leadership in community organizations.

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a)

Most respondents expressed confidence regarding the sustainability of SLM grant activities, citing community buy-in—including support from leaders and bylaws focused on conservation—as a reason for continuing SLM practices. Respondents saw the continued active role of ENRM ambassadors as a positive sign for sustainability, because they expected the ambassadors would continue to advise on proper SLM practices in communities. Some

respondents, mainly community leaders, highlighted elements of their bylaws that address conservation and land management. They support the sustainability of SLM practices by including enforcement mechanisms, such as fines for cutting trees and destroying forests. However, some respondents doubted bylaws would continue to be enforced, particularly for lawbreakers from outside their community.

What factors were driving beneficiaries to continue to adopt SLM (Sustainable land management) practices? (EQ 4.c)

Interviewees expressed confidence about the sustainability of grant activities, largely because communities have seen the benefits of adoption and do not want to revert to a pre-adoption state. Respondents reported that they plan to continue maintaining trees in woodlots (and planting, if they can acquire the necessary materials), planting vetiver grass, using contour bands, making and using manure fertilizer, constructing box ridges, and rotating and diversifying crops. Implementing these practices has increased soil health, crop yields, and households' incomes. Respondents plan to continue cooking with fuel-efficient cookstoves, because these appliances are more economical, need less firewood, made food quicker, and are easier to use than traditional fire.

> *"When the organization was here, they were saying that today we are here and tomorrow we won't be around… So people know that we are benefiting, not just [that] there is an organization, but we have to do this. So even when [TSP] is not available, if there is need of planting of trees, let us plant trees, or even if we have to take care of soil erosion, let us take care of it." (CL_M2)*

Participants expressed doubt about the sustainability of tree planting, given the lack of materials, like polythene tubes, needed for nurseries in some communities. They also expressed doubt about mulching, given the danger of snakes and armyworms, and the labor-intensive nature of the task. Some communities have been using sugar packets or making their own tubes for tree planting, but this was reported only by a couple of respondents and does not appear to be a widespread practice based on interviews. Instead, interviewees noted that they were focusing on caring for already-planted trees instead of sowing seedlings for new trees.

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ 4.b.)

Overall, participants were optimistic about the sustainability of grant activities targeting social and gender barriers and generally agreed that they would continue with the practices TSP introduced that target gender and social barriers. Participants noted that since the beginning of implementation, TSP had strongly pushed community ownership of activities and outcomes, making continuation of activities more seamless once TSP's involvement ended. Many also cited confidence that their community's ENRM women ambassadors would continue promoting the practices TSP introduced, because the ambassadors promote the continuation of not only of SLM practices, but also gender equality by encouraging joint decision making in households, equal division of labor in homes, and women undertaking leadership roles. They also act as role models.

Respondents believed that their communities would continue to see an increase in women leaders given the positive outcomes so far. Men and women cited a greater trust in leaders, better organization of committees, and increased confidence of women in communities as some of the reasons they are confident that women will increasingly take on leadership roles.

Given the popularity of VSL groups among women and men, continued interest inside and outside communities that were part of TSP's original implementation areas, as well as the financial benefits many participants have received from VSL groups, most respondents were confident that VSLs would continue. Most respondents felt VSL groups would continue, not only because they had reaped the financial rewards of participation (allowing them to access loans and giving women financial contributions in partnerships that increased their confidence to play a greater role in joint financial decision making with partners), but also because they had few other options to borrow money. Two community leaders noted that COVID-19 posed challenges to their VSL groups, because of restrictions on group gatherings (many respondents cited smaller and less frequent meetings in large outdoor spaces) and an increase in repayment defaulting given pandemic-related financial strains among members.

The pandemic has had a negative impact on already-declining REFLECT circles, and many participants reported that membership is decreasing in their communities in part because the pandemic has prevented them from meeting in person, and because many community members have learned to read, write, and do math and no longer need the services offered. Several interviewees reported that the government had started implementing adult literacy classes in the community, but they were unsure of the status of these classes due to the pandemic.

Most female and male participants were optimistic about the continuation of joint-household decision making and a more equal division of labor, largely because they had seen positive effects in their own households. Changes in the perceptions of gender roles have become more commonplace in communities, with most families adopting the practices according to interviewees. Parents reported passing these changes in norms on to their children, with an expectation that boys and girls (not just girls) would contribute to household chores and tasks. A few male respondents were skeptical about the continued expansion of equal division of labor in homes, given the hesitation of men who are more attached to traditional gender norms and unwilling to take on roles they view as women's responsibilities.

Respondents in communities without active beekeeping clubs or cooperatives were not confident about beekeeping being restored given the lack of access to supplies (such as hives and harvesting equipment) and lack of proper training. Respondents expressed confidence about sustainability of beekeeping only in communities where beehives had not been destroyed and were still maintained.

Unintended consequences of the project

Few respondents reported unintended positive or negative consequences from the TSP grant. The minority who reported positive consequences reported additional uses and benefits of vetiver grass. A couple of respondents cited land disputes resulting from the use of contour bands as an unintended negative consequence of the project.

Unintended positive consequences

Few respondents reported unintended positive consequences of the TSP grant. Respondents mainly pointed out that vetiver grass has been more financially useful than they anticipated. Although they thought it would mainly reduce soil erosion on their farms, they have found it to be a source of additional income, because it can be used as thatching material for homes, livestock feed, and seedlings for farmers who want to plant it as an anti-erosion measure on their own land.

Unintended negative consequences

Most respondents reported no unintended negative consequences from the project. A couple of respondents noted that with the use of contour bands, farmers began paying more

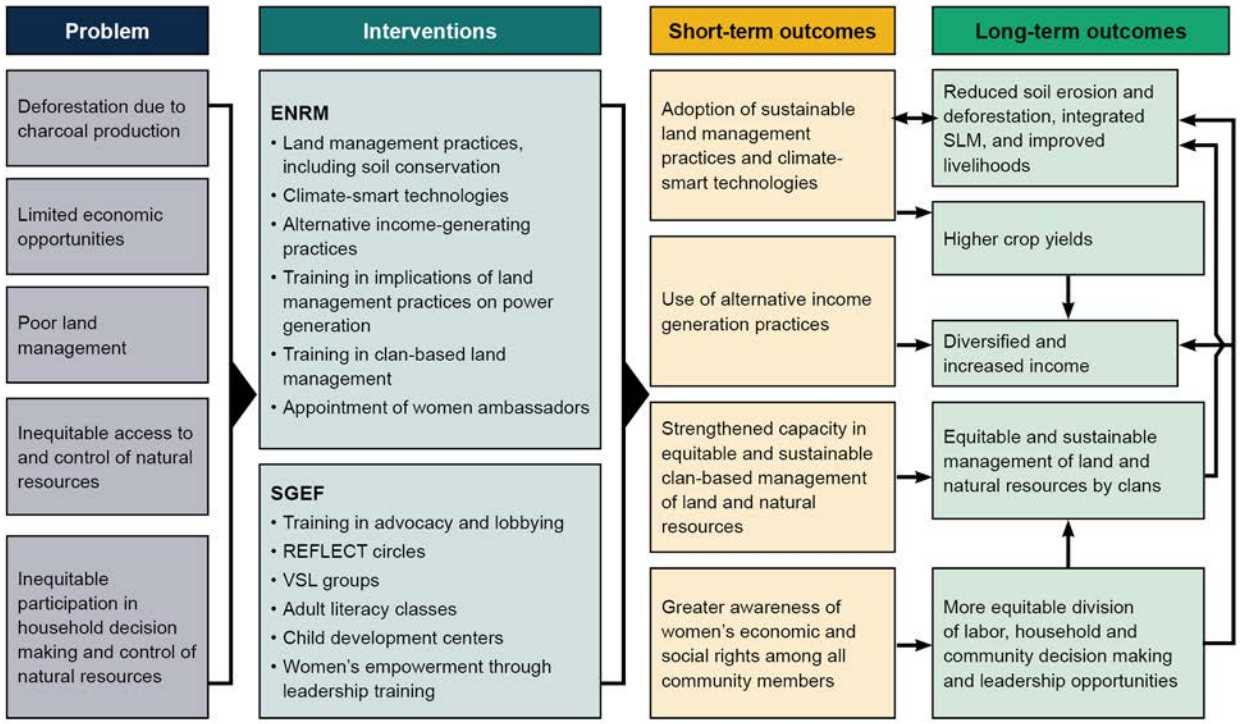
attention to their land boundaries, resulting in some land disputes. A few respondents also noted that many farmers in their communities discontinued mulching, because snakes were thriving in the mulch, and the mulch was acting as a breeding ground for crop-destroying armyworms.

Findings on how the TSP logic model held up

As second way to evaluate the success or failure of the TSP grant, we conclude with an assessment of how the logic model for the TSP grant program held up. In Figure B.6, we depict the TSP-specific logic model reported in our interim evaluation, including the issues the project was designed to address, the interventions envisioned for implementation, and the short- and long-term outcomes (Velyvis et al. 2019). Overall, we found that not only did the project's interventions follow this flow, many of the long-term outcomes have been reported as a result. Some of the long term-outcomes would require scale-up of these interventions to create an impact, but this pilot, at least among the villages where it was well-implemented and received, has shown proof of concept for this theory of change.

The program logic for TSP largely held up for the grant's activities. TSP's activities were expected to lead to three complementary outcomes: (1) on the environmental side, the changes in land practices and use of climate-smart technologies would reduce sediment runoff and weed growth in the Shire River Basin; (2) on the household livelihoods side, changes in farming practices and economic activities would diversify and increase household income; (3) on the social and gender side, strengthened capacity of clans in equitable and sustainable management of land and natural resources would support a clan-based system of land management; and (4) greater awareness of women's economic and social rights would reduce gender inequalities in access to productive resources and might also improve household income.

Figure B.6. Program logic for TSP grant activities



Although we do not have measurements of reduced sediment runoff and weed growth in the Shire River Basin, some respondents shared anecdotal evidence that they have noticed a positive change in reduced runoff leading to clearer waterways. Most respondents noted that they adopted and sustained ENRM practices because of the resulting increase in crop yields and household income from sale of surplus crops. On the social and gender side, respondents reported a more equal division of labor at home and on farms; an increase in join household decision making, especially regarding finances; and an increase in leadership positions held by women. Most women who reported participating in VSLs as part of the SGEF activities also reported an increase in their household incomes through participation in the groups. The spillover into neighboring communities reported by interviewees supports the logic model's feedback loop with these outcomes, as higher yields from sustainable land management practices and success in alternative income-generating activities prompted more households to engage in those practices.

Summary

MCC and MCA funded three-year grants to implement interventions focused on improving sustainable land management in the Upper Rivirivi River subcatchment area in Ntcheu District. The TSP grant ran from 2015 to 2018 and focused on a variety of problems that contributed to sedimentation and weed growth in the Shire River. These issues, in turn, disrupted the operation of hydropower plants on the Shire River. Our case study evaluation followed participants from the close of the grant project in 2018 to 2021 to see whether activities would be sustained. We found that respondents largely agreed that TSP grant participants have continued ENRM practices focused on SLM and soil conservation. Respondents also reported continued widespread sustained practice of gender equality principles taught by TSP as part of the SGEF activities with spillovers to nonparticipants inside and outside of the intervention area.

Appendix C.

United Purpose Case Study

United Purpose
Beyond aid

United Purpose Case Study

United Purpose (UP) was an MCA-Malawi grantee located in the Upper Shire region of the Balaka district in Malawi that implemented Environmental and Natural Resource Management (ENRM) and Social and Gender Enhancement Fund (SGEF) activities in 72 villages from August 2016 to July 2018 using a grant of $836,064. Core ENRM activities focused on conservation agriculture (CA) techniques, which included contour ridges, mulching, gully reclamation, manure making, and tree and vetiver grass planting. The main SGEF activities consisted of REFLECT circles, adult literacy classes, VSL groups, and business skill trainings.

The ENRM goals of the UP grant were to sustainably reduce land degradation, deforestation, and soil erosion and to contribute to the overall ENRM goal of improving the efficiency of hydropower production. For SGEF, UP aimed to raise awareness of women's rights and increase their participation in community decision making (Velyvis et al. 2019).

Project title	Improving Catchment and Natural Resource Management for Sustainable Livelihoods Grant: $836,064
Subcatchment	Upper Chimwalira and Upper Chilanga 72 villages
Summary of activities	**ENRM** 1. Provide seeds for crop diversification 2. Conduct trainings on soil and land management practices, including crop diversification, tree planting and management, and vetiver grass planting **SGEF** 3. Establish adult literacy classes using REFLECT methodology 4. Conduct leadership and assertiveness trainings 5. Conduct meetings to sensitize community members about equitable gender relations 6. Establish ENRM-sensitive village savings and loan groups to support alternative income-generating activities 7. Promote women's effective participation and decision-making influence at household and community levels

This case study is part of the final evaluation of MCC's ENRM Project. It updates findings from the 2018 interim evaluation and assesses the evolution, sustainability, and effects of the UP-grant activities. The results are derived from data collected in two traditional authorities[16] where UP implementation was among the strongest and most complete, and the participants most engaged. Data collected in mid-2021 consisted of key informant interviews, focus group discussions, and community observations.

We found that, in the three years since the UP grant ended, participants in the intervention villages have sustained adoption of many of the ENRM activities implemented, with ridge realignment and tree planting the most popular activities. Women remain at the forefront of sustaining most SGEF and ENRM activities as leaders and participants. SGEF activities, especially village savings and loan (VSL) groups, facilitated a positive cultural shift, increasing women's involvement in decision making within the household and community.

Summary of key findings

Findings on conservation agriculture and land management practices

- Three years after the close of the grant, participants continue many conservation agriculture (CA) and sustainable land management (SLM) practices promoted by UP, and there has been spillover to nonparticipants in nearby villages, who have adopted tree planting, compost manure, and contour farming practices.
- Adopters report CA and SLM methods produce benefits of higher yields, increasing food security, and financial gains.
- Community leaders have been key in encouraging the continuation of CA and SLM methods.

Findings on changes in gender roles in the household and communities and income-generating activities

- Most male and female respondents report sustained improvement in more equitable division of labor in housework and farm work.
- Women in participating communities have sustained increases in filling leadership positions and participation in community organizations.
- Increased joint decision-making regarding household finances and land and natural resources has been widely sustained and spillover to others in the community is reported.
- VSLs have continued to grow in popularity and have led to new agricultural businesses and home improvements that reduce reliance on natural resources, such as iron roofs.
- Increased financial independence for women has been sustained in part due to VSLs, enabling women to participate more equitably in household financial decision making.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Most respondents were confident about continuing grant-promoted CA and SLM activities in the future because they are financially beneficial.
- Community leadership encourages UP-promoted CA and SLM practices and more equitable gender roles, thus increasing the likelihood these practices will be sustained.
- VSLs continue to provide financial benefits, which explains their growth and expected sustainability.

[16] Traditional authorities are administrative units below districts, then come GVHs, and finally villages are the smallest administrative unit in Malawi.

Findings on conservation agriculture and land management practices

The evaluation questions guiding this section relate to the sustained adoption of grant-promoted ENRM practices three years after the UP grant ended and stakeholders' perceptions of the sustainability of these practices into the future. (For a complete list of the evaluation questions, please see Appendix A. Each evaluation question appears in green before the relevant sub-section.) We have found that, motivated by the benefits of these practices, participants have sustained many of the CA and SLM practices. ENRM activities such as tree planting, manure making, and contour ridges were among the most readily sustained, and spillover of these practices has been reported in neighboring nonparticipating villages. Stakeholders were confident these practices would continue in the future because of the financial benefits they provide and the encouragement of chiefs, lead farmers, and other leaders in the communities.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? (EQ 2 [Part 1][17])

The ENRM grant interventions led to sustained adoption of many of the CA and land management practices implemented. Table 1 summarizes the extent to which farmers and communities continued to adopt the practices and activities three years after the close of the grant.

Table C.1. Adoption and sustained adoption of activities

Practice activities	Interim	Final
Tree planting	✓✓	✓✓ +
Firebreak formation	✓	⏸
Check dams	✓	⏸
Vetiver grass	✓	⏸
Swales/watersheds	✓✓	✓✓
Contour farming practices (ridge alignment, etc.)	✓✓	✓✓ +
Making compost manure	✓✓	✓✓ +
Mulching	✓✓	✓✓
Planting one seed per station	✓✓	✓✓ +
Early maturity seeds	✓✓	✓✓

✓ Adopted/Sustained
✓✓ Widely adopted /Widely sustained
⏸ Less readily sustained
\+ Spillover reported among non-participants in the same villages

Which land management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2.a [Part 1])

More readily sustained practices

Overall, tree planting, manure making, and contour ridges were among the more readily sustained land management practices, according to farmers. The interim evaluation, conducted just after the close of grant activities, revealed that farmers had planted 258,393 trees, five times more trees than their initial target of 48,000 (Velyvis et al. 2019). In the eight villages represented in this sample, there was strong consensus among

[17] Numbers listed after evaluation questions refer to the question being answered. See Appendix A for a full list of final evaluation questions.

community leaders and participants regarding the **continued adoption of tree planting and maintenance activities in the forests, on riverbanks, and around households.** Participants reported benefits such as (1) reduced soil erosion and deforestation, (2) increased wood for domestic and commercial use, (3) increased rainfall and clean air, and (4) stable environments for bee farming. These benefits provided the necessary incentives to sustain the activity at the community and individual levels.

Community observations conducted in nearby forests supported reports of continued tree planting activities. Respondents pointed to increased diversity and an increased quantity of trees.

> *"Every year we plant trees, there [is] no year we do not plant trees. Every year we are conserving nature, and we are feeling happy because of this project, because they gave us guidance, added knowledge to us, and we still have it until now." (CL_M1)*

Respondents identified making compost manure as a popular activity, especially among women. Respondents preferred making compost to buying fertilizer, which can be expensive and difficult to get in a timely manner. One participant described buying fertilizers as a "weeklong" affair due to the difficulty of obtaining transportation to markets and wasted trips when fertilizer was unavailable. When asked about the benefits of compost manure, a female chief stated, "the land has changed because of the use of manure that we are doing. It's been good since you (farmers) can't depend on fertilizer again. We aren't worried if fertilizer is not available since we are using manure." (CL_F2)[18]

Figure C.1. Farm with ridge realignment and mulching after harvest in July

Project participants sustained adoption of several contour farming practices due to benefits of increased crop yields. As of mid-2021, most farmers in the UP project sustained ridge alignment activities, a main technique in contour farming, on portions of their land to conserve rainwater and reduce soil erosion. Although respondents agreed that most people in the participating villages maintained the practices of reducing distance between ridges to increase land utilization and box ridges to capture and retain soil moisture, many farmers admitted they initially hesitated to adopting ridge realignment practices, which they considered labor intensive. This hesitation led farmers to adopt partial ridge alignment methods on small portions of their farms. Most farmers only expanded the methods once they had witnessed their success in increasing crop yields and preventing topsoil runoff during heavy rains. One farmer stated, "As farmers we have greatly benefitted from this. At first, we could only harvest 4 bags on a one-acre piece of land by using the old farming practices. But now, on the same piece of land we can harvest up to 10 bags, this means that you are food secure." (FG_M4) Other farmers cited

[18] The following codes are used to identify the type of respondent quoted: CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; O = observation; F = female; M = male. Numbers differentiate the unique interviewees.

that some of their crops were not conducive to ridge and burrow furrowing as the main reason for not expanding ridge realignment throughout their farms.

The majority of respondents estimated that more than 50 percent of farmers in neighboring communities adopted at least one ENRM activity. The early implementers in neighboring villages were those in adjacent farms and villages who were able to witness the benefits from the participating farms. Some accounts list contour ridge spacing and one seed per station as the most commonly adopted practices by project nonparticipants. Tree planting and manure making were also adopted by nonparticipants in neighboring villages, although to a lesser extent. In many cases, these unplanned demonstrations were highly successful in encouraging other farmers to adopt the practices.

Three-quarters of the responding participants also sustained mulching to some extent or another, although they used the method contingent on weather conditions. Some respondents noted a decrease in this activity over the past two years due to the heavy rainfall in the Upper Shire region. The reduction was based on farmers' perceptions that mulching during heavy rainfall "causes harm" to the crops. Others believed that mulching wasn't conducive to all plant types, so they used mulch on only a portion of their farm where they found it appropriate. The respondents who continue mulching cited the benefit of increased crop yields as the main reason they sustained the practice. Most farmers who adopted mulching also constructed contour ridges, which is a complementary CA activity.

Figure C.2. A close-up of a swale

Participants revealed that digging shallow channels to direct and store runoff known as swales or "watersheds" was a sustained practice among many participants. Farmers understood the importance of these shallow channels in directing and storing rainwater during the rainy season, and the swales served as a water reserve, keeping the soil moist during the dry season. One male focus group respondent stated, "The watersheds, when they are dug properly in the farms, that means moisture keeps coming. Even when the sun comes, and it turns droughty, the maize does not die because moisture is moving silently." (FG_M7)

Planting one seed per station and using early maturity seeds were widely sustained. When asked why farmers sustained planting one seed per station, respondents stated that they noticed increased yields due to less crowding. During an observation, one farmer remarked, "It looks like a small piece of land, but if we plant one seed per station, we harvest more." (O_F3) Similarly, farmers initially sustained the use of early maturity seeds or "certified seeds," as they could produce crops that could be harvested up to three times a year for home use or commercial sale. One female focus group participant remarked, "Since the men were not always home, they told us to use this

seed because it was going to reduce our poverty and besides using [the crop] as food, we can also be selling [it] to get money in our households." (FG_F4) Those who did not sustain this practice cited an increase in seed prices as the main reason.

Less readily sustained practices

Less readily sustained practices were creating firebreaks, planting vetiver grass, and building check dams. Many respondents expressed willingness to create firebreaks, but the practice has been largely reduced due to (1) belief that the firebreaks created during UP implementation were still effective and (2) sourcing labor as farmers were discouraged by the vastness of the forest. One community leader stated: "It sometimes happens that when we ask Group Village heads (GVHs) to give us people to do firebreaks because the forest is big, it happens that people do not show up convincingly, that's the first method I see a problem." (CL_M1) Despite this, **many farmers claimed to still practice some methods of fire prevention by clearing out shrubs and dry grass.**

There were conflicting reports among the respondents on the sustained use of vetiver grass planting. While some farmers claimed that vetiver grass planting was sustained in their communities, others indicated a reduction in the practice. However, farmers who did not plant vetiver grass reported planting other types of vegetation, including bamboo, along the riverbeds. In addition, across multiple villages, many respondents seemed to agree there was a reduction in cutting vetiver grass. Two reasons were given: (1) farmers understood the importance of vetiver grass in preventing flooding and protecting soil, and (2) farmers were transitioning from thatched roofs, which use vetiver grass, to corrugated metal roofing.

Why were some land management practices more readily sustained?

Physical, environmental, and especially financial benefits were the primary reasons farmers sustained land management activities. Farmers appreciated the benefits that ENRM activities such as ridge realignment, mulching, and making manure had in improved food security through greater crop yields. The improved crop yields enabled some farmers to sell extra crops and improved output for those with existing agriculture businesses, increasing financial security for many families. Farmers also cited long-term benefits such as improved rainfall that adopting tree planting will bring, which will be beneficial to their crops.

Farmers identified village chiefs and community leaders as instrumental in encouraging the sustainability of ENRM practices. Chiefs had a major role in selecting and coordinating lead farmers to teach community members SLM practices. They also held assemblies to explain and encourage adoption of UP activities to community members. Chiefs also ensured compliance of community bylaws set by program participants by fining violators.

Group collaboration was also a factor that sustained UP grant activities, according to farmers. The activities that saw the highest sustainability rates were activities that farmers engaged in with a group. One female chief explained how this worked: "We have our lead farmers who are in this community, so we divided into groups. Everyone walks in their groups whether it is about going to make compost manure or water sheds, even the nurseries we divide so that the group from this side will plant trees and the group from the other side will also plant trees, and there is a day that we all go to plant." (CL_F1) In the past two years, COVID-19 has impacted the frequency and size of many groups, but despite these changes, farmers maintained groups for solidarity and encouragement toward SLM practices.

Planned and unplanned demonstrations were used in sustaining and expanding the UP activities. The village natural resources management committee (VNRMC), responsible for encouraging environmental conservation procedures and training talented farmers to train others, conducted demonstrations for ridge alignment and other CA practices. For example, some female participants educated other farmers by exhibiting their compost manure by the roadside. One focus group participant and member in the VNRM committee described what happens during a planned demonstration: "When we display our manure along the road, they (villagers) admire and ask us to explain everything to them. They call us to teach them so they can do the same." (FG_F7)

Community bylaws were also identified as a tool used for sustainability, especially for forest management. To combat reckless tree cutting and theft, program participants created committees that enacted bylaws that would fine violators who stole trees. Many respondents noted that these measures were especially effective in encouraging farmers to conserve trees and reduce tree cutting.

> *"Because of the bylaws and regulations that were put in place to safeguard the trees, if someone breaks these, they are punished." (FG_M1)*

Economic factors influenced sustained adoption, with those deemed "poor" seen as more likely to sustain practices. This was discussed in more than one focus group. As one respondent noted, "Most of the people who rush into taking part in conserving the environment are people that are very poor here in the village, because they follow knowing that when they follow, they will see the benefit. Those who have money just think when they follow these it will not help them." (FG_M19)

Barriers to sustainability

Many respondents pointed to COVID-19 as the single largest factor in preventing sustainability of ENRM practices. Responses suggested that COVID-19 had impacted nearly all the ENRM activities. In particular, multiple respondents reported that the pandemic restricted movement, which affected the ability of farmers to meet and perform ENRM activities in group settings. Farmers added that they received little help from the government to offset the effects of COVID-19, such as supplies of masks or education to facilitate safe meetings. One participant stated, "At first we were able to call for the people so that we should do the manure, but now with the coming of COVID people are asking how we can meet with how things have changed. So, we are not working as a group. Everyone is doing their agricultural activities in their homes." (WH_F2)

Both men and women pointed to a lack of tools or resources as a reason for not sustaining the practices. Activities such as gully reclamation require tools that were sometimes unavailable or expensive for farmers. One VNRMC member stated, "They helped us with wheelbarrows, shovels, tubes and watering cans…but in the past 2 years, the leaving of people (UP program) was not a good thing... They should help us from where we left off so we might continue because we have not completely stopped." (FG_M5) These claims were echoed by ENRM participants in another focus group: "There are places to sow trees, what is missing are the tools to start sowing trees again." (FG_F8)

Some farmers and community leaders cited a lack of understanding regarding the importance of ENRM practices as a reason some practices were not adequately sustained. According to the participants, misunderstanding the methods and gaps in information was the primary cause of not adopting UP practices among farmers in participating villages. Conservation of woodlots was given as one example. While some community members conserve woodlots throughout the year, others remain reluctant to oversee their woodlot during seasons when they are concerned about fire. A VNRMC chairperson said, "We need to conserve the woodlots starting from April to May and June. We don't reach August because we are afraid of the extreme fires. So, what happens is that the people are reluctant to work, and as a result the woodlots are not well conserved and face a lot of problems like the extreme fires that destroy the woodlot… The people don't understand how the resources would benefit them in their life, that's the problem here." (O_F1) In another interview with a community leader, a similar explanation was given regarding the low engagement of men in some SLM activities. She noted, "lack of understanding" as the main reason why some farmers didn't adopt SLM practices. (CL_F1) Some even attribute the misunderstanding to age. A male leader noted, "in the groups there was misunderstanding on the side of the youth and the elderly. But the other groups, we were working together men and women. The youth were thinking as they are youths, they cannot be going to conserve nature. But after we sat down and taught each other, it happened that we had youths in our groups." (CL_M1)

Participants also noted "labor intensity" and inability to find laborers as reasons for not sustaining some practices, especially for the elderly. Many respondents acknowledged that the elderly in the community did not adopt many methods due to physical limitations; most of them relied on youths or other members of the community for help with environmental conservation. A chief gave an example on how elderly farmers could face challenges fully adopting some practices such as manure application: "So for someone to apply it in a field close to an acre, it was very difficult for them (elderly), there are some people in our villages that are too old and can't do that." (CL_F1)

Other challenges to sustainability were natural factors such as worm infestation. Many farmers reported that worm infestation had ravaged some of their trees and killed plants. In one community observation account, farmers had planted 1,500 trees along a river, but only 59 percent (887) trees survived. Despite this setback, the farmers planted another 150 trees and were able to maintain an 80 percent survival rate during the second planting.

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2 [Part 2])

Responses indicate that, for the activities adopted, farmers understood when and how to apply the various UP grant activities depending on their needs. As an example, during the dry season, there was an uptake in mulching to mitigate the effects of drought. But during heavy rains, the practice was reduced to prevent rotting. The majority of respondents claimed that they applied the practices exactly as they were taught by UP and the benefits they reaped were a testament to that. A community leader spoke about the impact of sustaining ridge alignment on his farm: "Before this project came, the way I was farming in the past…I was harvesting…not more than 6 or 7 [bags and] was not reaching 10. But when this project came and taught us taking care of our farms like making contour ridge markers and making swales, I harvest 15 bags or 20 bags. This is the first benefit I can see." (CL_M1)

Are there differences in sustained adoption between male and female farmers? (EQ 2.a [Part 2])

Respondents unanimously agreed that women sustained more ENRM activities than men. This finding was also supported in the interim report, which revealed that the majority of participants who engaged in trainings and adopted practices were women (Velyvis et al. 2019). One community leader found this frustrating: "Most of the time, for us to work mostly with men, men are being less while women are being more, so women had to just be strong that they will be doing the work without thinking that some work needs the presence of men." (CL_F1) Generally, males were viewed as reluctant to adopt new practices. One male participant chalked this up to cultural norms: "In our culture it is the women who are always at the forefront when it comes to these issues." (FG_M1) Although female participants agreed that women were at the forefront of sustaining ENRM activities, many insisted that they often collaborate with their male counterparts as men have more knowledge about operating the farms.

Findings on changes in gender roles in the household and communities and income-generating activities

The evaluation questions guiding this section relate to the extent to which SGEF activities resulted in sustained changes in gender roles in households and communities three years after the UP grant ended. We also address questions about stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers into the future. (For a complete list of the evaluation questions, please see Appendix A. Each evaluation question appears in green before the relevant sub-section.) We have found that there has been a sustained equitable division of labor on farms and in homes. Spillover of increased joint household decision making has been reported within the community. These changes have been sustained due to the continued encouragement of local leaders, the benefits households perceive, and women's increased income due to income-generating activities. Stakeholders were confident these changes would continue in the future supported by the continued financial benefits of VSLs and the encouragement of leadership within the communities.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3)

Changes in gender norms that SGEF initiated have been widely sustained three years after the end of the UP grant. Nonparticipants have also adopted some norms. Table 2 summarizes the extent to which changes in norms were sustained and the effect they had on gender equity for nonparticipating women.

Table C.2. Sustained changes in gender roles in households and communities

Practice activities	Interim	Final
Increases in joint household decision making regarding…		
Land and natural resource management	✓✓	✓✓
Access and management of assets for a living	✓✓	✓✓+
Household finances	✓✓	✓✓
Changes in division of labor on the farm and at home	✓✓	✓✓
Leadership opportunities for women	✓✓	✓✓+
Female-headed household involvement in community decision making	✓✓	✓✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a)

During the interim evaluation, participants reported an increase in joint household decision making regarding land and natural resources, management of assets, and household finances (Velyvis et al. 2019). Since the interim, many of these gains have been sustained due to participants sustaining VSL groups and REFLECT circles. These groups provided the education and support needed for women to engage in decision making.

Although REFLECT circles have seen a decline in recent years, VSL's groups remain especially influential in encouraging joint decision making due to their popularity amongst participants.

Household decision making – Land and natural resources

Accounts from participants and their spouses suggest that joint decision making regarding land and natural resources has been sustained in up to three-quarters of participant households since the interim evaluation. Additionally, due to women's increased participation in SLM groups, husbands are deferring to women on activities such as planting nurseries and making manure as women become "experts" on these activities. Respondents indicated that women maintain engagement in land and natural resources discussions regarding tree conservation and crops, which can generate profit. One husband spoke of the benefits he experienced: "Women remind us men what to grow on the land that year when we have forgotten. We think that maybe we should just plant maize, women remind us that maybe we should plant soybean or pigeon peas." (WH M2) Many of the respondents indicated spillover among nonparticipating households. A lead farmer in a separate all-male focus group shared these sentiments (see quote in box). This claim resonated with and was supported by other male respondents in the same focus group.

Household decision making – Access and management of assets

Participants agreed that joint decision-making regarding access and management of assets has also been sustained. Women who were previously passive are now more active participants in asset management. One female focus group member stated, "in the past when there were chickens or goats at a house, the man could just make a decision when the woman was not there, taking goats or chickens and selling them. When the woman

comes and asks, she could even be beaten because of asking. But because of the organizations, men have fear, since there are organizations ending violence, and when they think of a woman reporting there, they change their minds and do things together." (FG_F12) A husband in a separate SGEF focus group reiterated this claim, "In the past it was only the man making those decisions, but right now the woman is also making those decisions. In seeing how things are now, maybe if we bought livestock, let's say a goat, so we can give it to one of our children to care for …those decisions are being made by both of us." (FG_M5)

Household decision making – Household finances

Joint decision making regarding household finances has not only been sustained, but also has increased noticeably since the interim report. Since the interim, participants and community leaders in one village estimated that up to 75 percent of households in the participating villages were practicing joint decision making on household finances. A common reflection among women was that the community was "enlightened" during the REFLECT circle interventions, and as a result of the circles, many wives reported they are still engaged in financial discussions with their husbands. Some women also reported a decrease in gender-based violence fueled by finances, as men and women were sensitized to changes in gender norms and more joint decision making. **Changes were most noticeable in households where women were active participants in income-generating activities.**

> *"Different families do things differently but, in my case, when my wife has made any sale from the charcoal burners... She would ask my thoughts on what we should do with the money. Then we could distribute the money according to the various needs at home, like buying school uniforms for our children, also re-invest some of the money in making more charcoal burners and other businesses." (WH_M3)*

VSLs have been instrumental in sustaining joint decision making on finances, as they provide a means for women to financially contribute to their households. VSL members indicated that women were generally viewed positively within the groups, with many respondents agreeing that women were less likely to flee after receiving funds. Many reported that the sustained increase of women's participation in VSL groups continues to financially benefit many households. One male focus group member shared his thoughts on VSLs: "At first women were relying mostly on receiving from the man... But right now, the women, with the coming in of different UP groups, they are able to give suggestions about how they can earn money as a household and take a part of the money that is earned and start a small-scale business." (FG_M14)

Additional insights about participation of women in income-generating activities

While our evaluation does not have an evaluation question specifically about income-generating activities, these activities were an important part of the UP grant program logic. These activities were very popular and had implications for gender equity and potentially for reducing the need for unsustainable natural resource usage. For these reasons, we describe the evolution of these activities and some of their effects. VSLs were sustained and continued to expand to nonparticipants despite difficulties caused by the COVID-19

pandemic. However, participation in income-generating activities and REFLECT circles diminished.

Table C.3. Sustained adoption of income-generating activities and SGEF practices

Practice activities	Interim	Final
REFLECT circles	✓	⏸
VSLs	✓✓	✓✓✓+
Income-generating activities	✓✓	✓
Cookstove production	✓✓	⏸
Beekeeping	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

The supports and resources from VSLs, REFLECT circles and Village Development Committees (VDCs) were integral in enabling women to adopt and sustain income-generating activities. In one community, respondents gave figures of up to 85 percent of women participating in some form of income-generating activity. **VSLs were especially popular among the majority of female participants as a resource for borrowing and saving money to invest in small business ventures.** One husband spoke about the increase of women's participation in the marketplace: "On your return trip, just stop by the market over there, you will notice that most of the traders there are women."

I**ncreased engagement in income-generating activities is resulting in modernized infrastructure in some communities, a benefit that many farmers are eager to sustain.** One community leader said, "now we are seeing that in the households most people are building houses with iron sheet roofs, which shows that farming has changed since there is no one who runs big businesses here. They are all small businesses, and the business happens when they have harvested their farm produce, so we are seeing that change is there." (CL_F1)

Since the interim, the success of income-generating ventures and VSLs has led to the increase of new financial institutions such as banks in some communities. Some respondents noted that banks have now gotten involved in lending money as they are witnessing the successes of local VSLs. Along with the financial benefits experienced at the household level, these factors contribute to the optimism amongst the majority of respondents that income-generating activities will be sustained long term.

Low prices, lack of markets, and lack of training raise doubt about the sustainability of some of the income-generating activities implemented. With the changing economic conditions, farmers share an uncertain future with their agricultural businesses, and many are discouraged by the price decreases on their products. In addition, women who participated in making charcoal burners for sale halted their work as they were unable to find markets. A husband in Balaka shared that up to 500 burners from the previous year (2020) remain unsold: "My comment is on the women who are involved with the making of charcoal burners. As I previously indicated, these women had a readily available market to sell their products. Concern[19] [UP] used to assist them a lot in this regard. But as of now, they can no longer find the markets. I wish Concern had taught them how they can navigate and find the markets on their own." (WH_M3) A REFLECT facilitator noted that the government used to buy the charcoal burners, but the community lacks access to that market buyer now. "The government used to come and buy from them

[19] United Purpose was formerly Concern Universal.

[charcoal burner sellers] but now they don't. So, the thing is that, when they sold the energy cook stoves and got money, [that is, when] they would buy our commodities, [it meant] that things are going well. But right now, we are hindered and lacking support." (FG_F4) Bee farming, another income-generating activity encouraged by UP, also received mixed sustainability responses. While some respondents experienced success and felt confident that they will be able to sustain the activity and benefit financially, others felt ill equipped to scale the operations in the future.

Figure C.3. Unsold cookstoves in a shed

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b)

Most respondents reported more equitable labor division on the farm and within the home. Both male and female respondents emphasized a shift in cultural norms surrounding gender in their communities. One male REFLECT circle facilitator stated: "If we regard our friends from the north, if a man clears grass, people say it is unacceptable. But here in this area, a man can clear grass and so can a woman, but in the north, only a woman can do that, which is not a good thing." (FG_M12) Another male participant in the same focus group echoed these claims: "Even water, the one who would always get the water was the woman. But now the man is able to carry a jerrycan of water on the bicycle to get water. Even the maize mill. It was only women who went there and now also men are able to do that." (FG_M14)

Cultural changes brought by UP's SGEF activities continue to reduce women's double workload, with men taking on roles that were previously reserved for women. Female participants reported that before the UP interventions, women worked both on the farm and at home, while their husbands only worked on the farm. Female community leaders and program participants reported decreased stigma regarding men taking on work once considered "women's work." Nowadays, many women expressed that their husbands have been taking on roles that were previously reserved for women. A male focus group participant spoke of the changes within his household: "Yes, we used to say that a woman was only going to do laundry and wash plates, and myself I go to the farm while the woman is at home. But right now… we get back, maybe the woman will go to draw water, she will tell me to do the dishes or even laundry." (WH_M2) Many respondents stated families are increasingly engaging in farm work together and involving children in age-appropriate activities. Participants credited the UP program for fostering the increase in division of labor. A female chief spoke about this new change: "Yes there is change, because now people are doing work together, there is no such a thing as this work is for a man or a woman or children, no. We do see people as families going to the farms, when time for school has come, they [the children] do go to school while the man and woman are left doing some other things at the household." (CL_F1)

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c [Part 1])

Respondents overwhelmingly agreed that the interventions led to sustained cultural shifts, which have enabled women to take up leadership in almost all aspects of community life. Since the interim report, women's leadership opportunities have spilled over to areas that were not part of the UP program, such as religious institutions. A contributing factor were rules mandating the inclusion of women in organizations. "There is big change, it is continuing, women are promoted in position…when there are meetings the village heads say that…on doing elections both men and women should be included, meaning that women are supposed to be taking part… different positions are led by women." (CL_M1)

> *"Sometimes they were saying that even at church women should not preach. … Most people were saying that we should be choosing men to be chairs. But now it's possible for a woman to be chosen as a chair and lead on some things. Even the adult school literacy teachers, they used to say most of them should be men, but now we see that most of them are women, which means that women are involved in a lot of positions." (CL_F2)*

Currently, women are leading in community organizations as treasurers and chairwomen, and in the overall community as chiefs. One female village chief believed that up to 90 percent of women in her village are holding some type of position. Prior to the grant activities, many women were afraid to take up leadership positions, but since the UP grant, respondents report an increase in women obtaining and sustaining leadership positions. One male focus group respondent stated, "Right now, a woman can lead a group of up to 60 people, or 50 people. Why is that? Because right now women for sure have the freedom in everything. Maybe three-quarters of the groups we have here in our community, most of them are led by women." (FG_M20)

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c [Part 2])

Female household heads have also shown sustained engagement in community activities. Prior to UP, participants noted that unmarried and single women were excluded from decision making in the community. UP grant activities sensitized the community and provided a platform for women to engage with the community. Today, many respondents believe that their communities have made positive strides in intentionally including unmarried women and women from female-headed households in community activities. This is how one female leader spoke of these changes: "A woman who depends on herself in the past, they used to be people who were suffering a lot…since the coming of this project a woman on her own when you see her, you see her as if she has someone helping her." (WH_F3)

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d)

There was notable spillover in gender role changes among communities that did not directly participate in UP. Program participants who were interviewed estimated that, in some communities where UP did not work directly, up to 75 percent of community members adopted new attitudes on gender relations due to outreach from former program participants. Outreach included sensitization activities such as assemblies, and door-to-door campaigns. However, many respondents noted that changes in gender roles within the

non-UP communities were easier to observe than within individual households. Respondents identified three main areas of spillover: (1) there was an increased presence of men and women working together on farms, (2) men increasingly took up traditionally female chores, and (3) women increasingly were taking up leadership roles within non-UP communities. All three activities were observable to differing levels in neighboring villages.

Findings on stakeholders' perceptions of the sustainability of grant activities

This section looks at stakeholders' **perceptions of the sustainability** of grant activities into the future. Despite climate change and setbacks from COVID-19, farmers are confident that the SLM activities will continue to be sustained. Financial benefits remain the main motivator for sustaining SLM activities. Participants also remain optimistic on the sustainability of changes due to SGEF activities, such as women's more active role in leadership in the communities. However, some of the gender activities such as REFLECT circles and some of the income-generating activities did not elicit as much confidence. We also look at the unintended consequences of this project in this section.

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a)

The majority of respondents reported confidence in the sustainability of SLM activities, with farmers pledging to continue these activities. Farmers actively continue enacting the bylaws formed during the program, which aimed to hold participants accountable for the protection of forests and woodlots. In these communities, cutting or stealing trees leads to fines enacted by local chiefs. Participants reported notable success of the bylaws in discouraging these harmful practices. Although respondents acknowledged that some farmers are reluctant, they continue to encourage farmers to adopt SLM practices in order to experience the benefits.

What factors were driving beneficiaries to continue to adopt SLM (sustainable land management) practices? (EQ 4.c.)

The majority of participants pointed to financial incentives derived from increased agricultural output as the main motivation for sustaining SLM practices. The UP grant activities that increased agricultural output were especially popular among farmers. Participants' responses indicate that activities such as ridge alignment, mulching, and manure making saw the highest sustainability rates. The majority of participants voiced a strong belief that these methods will continue as farmers continue to see the benefits.

> *"Here at GVH Katapira, almost everyone adopted these [SLM practices]. The chiefs made sure that all the people are adopting zero tillage and the land conservation practices such as blocking water channels prone to erosion." (O_FX)*

Chiefs and lead farmers were also identified by farmers as instrumental in facilitating continuous adoption of and engagement in SLM activities. According to respondents, lead farmers continue to delegate special days for farmers to carry out ENRM activities. They also hold gatherings to train farmers and supervised the progress of planned activities. Although accounts vary on the frequency of group SLM activities (due to COVID-19), the majority of respondents reported meeting at least once monthly.

As the main arbitrators of land-related disputes, chiefs had a dual role in sustaining SLM activities. First, they encourage adoption

of program activities, and second, they arbitrate and punish violators of community bylaws. Many respondents expressed that chiefs were instrumental in curbing tree theft and reckless deforestation through issuing fines. One respondent summarized, "This is simply because most people do fear and respect the chiefs. For instance, if you receive a summons from the chief, your heart will skip a bit, and you will be filled with fear." (WH_M3)

Some respondents pointed to climate change as a driving force for the adoption of SLM activities. The increase of mulching following the 2019 dry seasons and decrease of the methods in 2020–2021 following the heavy rainfall season indicate how farmers adapted practices to changing climate conditions. When asked why farmers adopted ENRM methods, one farmer stated: "Climate and weather changes. In some seasons, where the rain is scarce, people would still harvest a lot as they have managed to conserve enough water." (FG_M5)

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ4. b)

Overall, participants seemed optimistic on the long-term sustainability of SGEF activities targeting social and gender barriers. Although activities such as REFLECT circles were on the decline, the success of VSLs and women's expanded leadership roles were seen as positive indicators of sustainability.

As of 2021, the most promising and sustained SGEF activity among the participants remained VSL groups, with many doubling and splitting into smaller groups. One community leader shared why he believes VSLs will be sustained: "The easiest way for you to find and borrow money, is to get it from the VSL groups." (CL_M1) Additionally, since the interim report, participants have continued to expand VSL activities by involving youth in their own VSL groups.

The sustainability of increased female leadership remains promising. According to some community leaders, the election and re-election of women into leadership roles in VDCs, VSLs, REFLECT circles, and as chiefs, have reflected the success in changing mindsets. Female leaders have also demonstrated a desire to persevere despite challenges. One female community leader expressed her challenges: "In my village, I have many positions. Maybe in a week I can move about for four days. So, others see what I am doing as something useless, saying I have nothing to do, I am just moving around. It even reaches the extent of being called a prostitute—that I am going to meet men. Those are things that are said, but because that is not what I am doing, I just leave them to talk. They will not benefit." (WH_F3) Community leaders and participants also expressed a desire to continuously engage in and expand gender equity trainings, like the lessons that were taught through REFLECT circles, now that the government has provided facilitators.

On the other hand, **REFLECT circles have been on the decline since the grant ended in 2018. Currently, REFLECT circles continue to be sustained through government-appointed instructors,** although participants seem conflicted on the implications of this change. One male expressed doubts on the sustainability: "When they [UP] left it to the government, the circle facilitators that were chosen by the organization were stopped. So, the government brought in their adult literacy teachers... Now we have government facilitators, and with how the government runs things…you know how that is." (FG_M20) On the other hand, a female community leader felt that government intervention might be a promising way of continuing SGEF activities. She stated, "On the side of the adult literacy schools, the teachers are still encouraged since we can just say the government is the one encouraging them, so they cannot lose interest, they are supposed to try and find people to teach and hence that cannot

change." (CL_F2) Discussions about gender that were part of the SGEF activities implemented have currently been paused. However, many respondents reported that the committees that discussed gender are still maintained. It is unclear whether the activities that explicitly focused on social and gender barriers will continue with the new REFLECT instructors, but respondents seem optimistic that the changes in gender norms will remain.

Unintended consequences of the project

The majority of respondents did not report experiencing any unintended positive or negative consequences from the UP project. The minority who reported positive consequences reported infrastructural improvements in roofing and water access. Concerns over gender imbalance were brought up by one participant as a potential negative consequence of UP.

Unintended positive consequences

Improved water access through government provision of boreholes. UP's literacy program facilitated through REFLECT methodology unintentionally led to improved water access as women who participated in the program were empowered to utilize their literacy skills to petition their local government for boreholes. A program participant explained, "there were a lot of people who were complaining about water. They told us ways we can complain to the government. We wrote letters, we sent messages, we went to Balaka, and UP was the one that led us to the various offices. After our letters, the boreholes were brought everywhere here." (FG_F16)

Infrastructure improvement through iron sheet roofing. Multiple focus group participants noted that VSLs were instrumental in providing the additional income needed to transition from thatched roofs to environmentally friendly iron sheet roofs. One REFLECT facilitator in an all-male focus group stated: "You would hear someone has installed iron sheets on their house through the VSL. That is why a lot of people have joined the VSL groups." (FG_M14) This sentiment was echoed by a female participant in an all-female SGEF focus group, who said, "in the first year we bought 17 iron sheets…the next year iron sheets reached 32. The house was already built so we just removed the grass and replaced it with the iron sheets. Now we stopped cutting grass." (FG_F9)

> *"When they [participants] get money, they are able to buy iron sheets. After 2 years you find they have roofed their houses. And because of that, modern houses are appearing in the villages." (FG_M10)*

Unintended negative consequences

Although the vast majority of respondents reported no unintended negative consequences from the project, resistance to changes in gender dynamics were brought up. This was only mentioned by one participant, which suggest it is a minority opinion, but it is one that could unravel progress. The participant expressed concerns about the impact program activities have had on gender relations, noting women's elevated status in the community might lead to a gender imbalance. She stated, "others [women] are having exceeding [numbers of] leadership [opportunities] to the extent of looking down on the man, seeing him as a child because her eyes were opened. She is doing things on her own, and that is indeed a problem." (FG_F8)

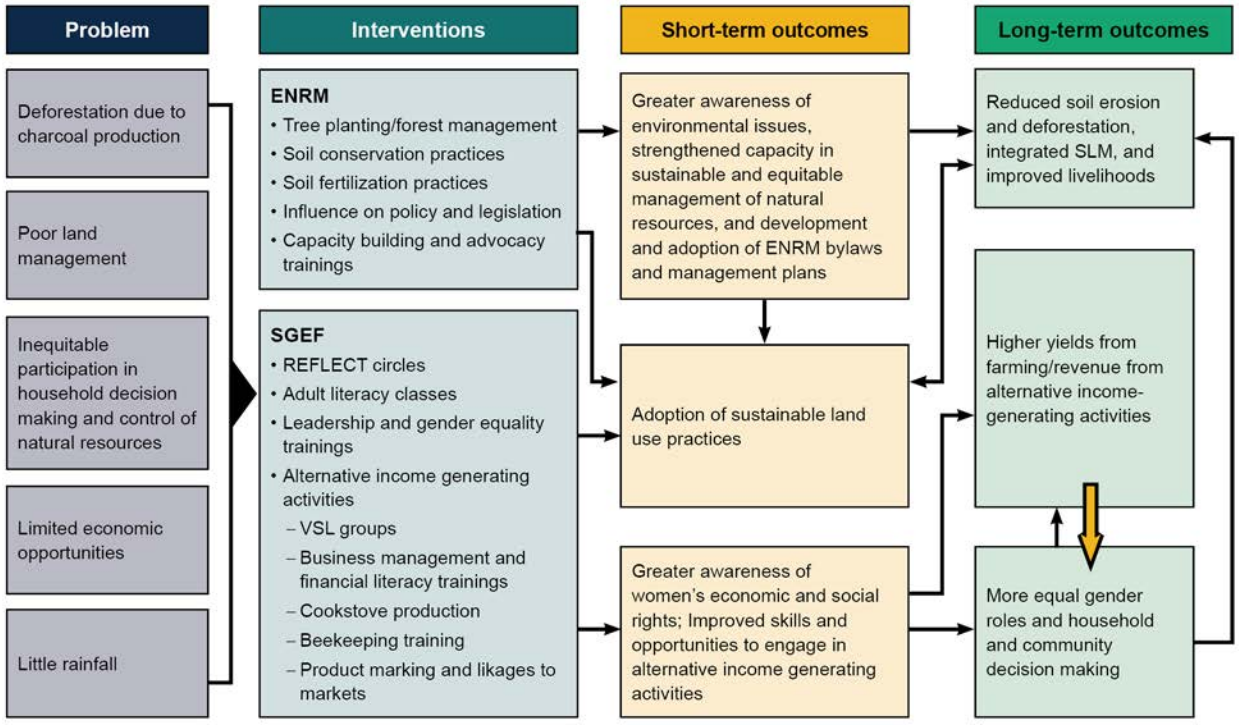
Findings on how the UP logic model held up

As a second way to evaluate the success or lack thereof of the UP project, we conclude with an assessment of how the logic model for the UP grant program held up. In Figure C.4, we depict the UP-specific logic model reported in our interim evaluation, which includes the issues the project was designed to address,

the interventions envisioned for implementation, and the short- and long-term outcomes (Velyvis et al. 2019). Overall, we found that not only did the project's interventions follow this flow, but also many of the long-term outcomes have been reported as a result. Some of the long-term outcomes would require scale-up of these interventions to create an impact, but this pilot, at least among the villages where it was well-implemented and received, has shown proof of concept for this theory of change.

Overall, we think that the logic model for the UP's grant activities as displayed in Figure C.4 is an accurate depiction of how the grant activities worked within the larger ENRM Project as a vehicle for ultimately contributing to poverty reduction and economic growth. UP's main short-term outcome was to increase awareness of women's economic and social rights, which was achieved and led to the longer-term outcome of more equal gender roles and decision making, as discussed above. UP's second SGEF shorter-term outcome was skills and opportunities to engage in income-generating activities, which was also achieved and led to the longer-term outcome of the involvement of women in and increased revenue for women from income-generating activities, although at a diminished number from that seen at the end of the grant. An important flow that we identified as missing from this model is that increased revenue from income-generating activities for women also led to more equal gender roles, as women were more able to partake in household decision making regarding finances. This flow is represented by the yellow arrow. UP also aimed to change land management practices in the hopes of increasing yields and reducing sediment runoff and weed growth in the Shire River Basin. With the improved SLM, many respondents reported higher yields. While we don't have any evidence of a reduction in sediment runoff, evidence has shown that the adoption of ENRM practices such as swales, ridge alignment, and planting trees should in the longer-term affect sediment runoff and weed infestation in rivers. Poverty reduction through improved farming practices also

Figure C.4. Program logic for UP grant activities



seemed to hold up as farmers reported greater agricultural outputs and more financial stability. Looking at these model villages offers proof that these interventions can lead to the longer-term outcomes proposed at this scale.

Summary

United Purpose was an MCC-Malawi grant that carried out ENRM and SGEF activities in the Upper Shire region from August 2016 to July 2018. UP's main ENRM goal was to reduce land degradation, deforestation, and soil erosion through introducing sustainable land management practices. These activities included tree planting, contour farming, and making compost manure among many others. The majority of participants sustained ENRM activities due to economic benefits derived from increased harvests. UP also aimed to increase women's participation in decision making at the household and community levels through SGEF activities. UP used REFLECT circles to facilitate gender equity trainings and VSLs to increase women's participation in income-generating ventures. Respondents reported an increase in women's participation in household and community decision making and, in some villages, women were elected to serve in key positions such as chiefs. There was evidence of the ENRM and SGEF activities introduced by UP extending to nonparticipating households both within and outside the participating villages. Overall, participants reported positive changes from the UP project and said they intended to sustain many of the ENRM, SGEF, and income-generating activities into the future.

Appendix D.

FISD Case Study

FISD Case Study

The Foundation for Irrigation and Sustainable Development (FISD) was an organization from MCA-Malawi that sought to improve land management in the Lunzu–Linjidzi catchment area of the Blantyre district from 2015 to 2018. Its goals were to implement sustainable land management practices through environmental and natural resource management (ENRM) and to improve gender equity through the social and gender enhancement fund (SGEF). In addition, FISD was unique in relation to similar grants in Malawi, as it incorporated a solar-powered irrigation scheme in its ENRM practices. FISD's training and support targeted women especially, to increase (1) their engagement in decision making at the household and community levels, and (2) their participation in income-generating activities. The $718,201 grant included the following, carried out in 113 villages:

Project title	Integrated Approaches to Natural Resources Management and Conservation for Sustainable Hydropower Project Grant: $718,201
Subcatchment	Lunzu–Linjidzi 113 villages, 2 traditional authorities
Summary of activities	**ENRM** 8. Provide trainings on sustainable land use practices, including tree planting, forest management, manure and mulch production, and gully and swale construction 9. Advocate for sustainable land use practices at village government meetings 10. Establish a solar-powered irrigation scheme **SGEF** 11. Conduct meetings to sensitize community members about gender equality 12. Establish village savings and loan (VSL) groups to support alternative income-generating activities

This case study presents results of the FISD project as of 2021, three years after the close of the Malawi compact in 2018. The results are derived from key informant interviews, focus group discussions, and observations conducted in July and August 2021 among program implementers and participants. This final evaluation updates key findings presented in the interim evaluation (Velyvis et al. 2019) and presents new findings on the evolution, sustainability, and outcomes of the FISD grant. We found that three years after the end of the grant, many ENRM conservation and land management practices remained popular owing to benefits such as higher yields and increased income. The new solar-power irrigation scheme has served fewer farmers on less land than expected and faces operation and access challenges, but farmers who have had access to irrigated land have seen large increases in yield and crop diversity. SGEF practices continue to be popular among participants, and changes in gender norms are accepted within the interviewed communities. Female leadership is also viewed positively, and SGEF's contributions to the community, households, and workplace remain well received.

Summary of key findings

Findings on conservation agriculture and land management practices

- Participants have widely sustained tree planting and several other land management practices.
- Because of alternative earning methods established through the VSL groups, many former producers of charcoal have abandoned the practice.
- The new solar-powered irrigation scheme is neither serving the number of farmers expected nor irrigating the hectarage promised.
- In areas with successful solar irrigation, farmers reported higher yields and great satisfaction.
- The main factors hindering full success of the irrigation scheme include (1) landowner control over irrigated land and rent increases, which reduce access to irrigated land for the least well off and least risk averse; and (2) pump maintenance issues, which negatively affect cultivation and the number of usable plots.

Findings on changes in gender roles in the household and communities and income-generating activities

- Increased joint household decision making has been sustained and is supported by women's new contributions to household income.
- More equitable division of labor on farms and in homes has been sustained, with women and men taking on new roles.
- Increased leadership opportunities for women have been widely sustained and remain well supported throughout the community.
- Female heads of household have sustained involvement in the community and have consistently taken part in VSL groups.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Stakeholders were confident regarding the longer-term sustainability of most conservation agriculture (CA) and sustainable land management (SLM) activities.
- Financial gains from CA and SLM activities were seen as the key driver of longer-term sustainability, through notable improvements in soil quality and resultant increases in yields.
- Without FISD's financial incentives, labor-intensive activities, such as gully reclamation, were seen as unsustainable.
- VSL groups were seen as highly likely to be sustained in the long term, especially as numbers have expanded in recent years.
- Participants remain optimistic on the sustainability of changes in gender roles brought about by SGEF activities, such as women's increased leadership opportunities in communities.

Findings on conservation agriculture and land management practices

The evaluation questions guiding this section deal with the sustained adoption of FISD's activities three years after the grant ended and stakeholders' perceptions of the sustainability of these practices into the future. (See Appendix A for a complete list of the evaluation questions. Each question will appear in green before the relevant sub-section.) Overall, we found that participants, motivated by the benefits of these practices, have continued, often widely, many CA and sustainable land management (SLM) practices. They have experienced improved crop yields and other benefits, such as the reduction of land degradation, deforestation, and soil erosion. The most popular CA and SLM activities among participants were tree planting, contour farming, and making manure compost. As participants' success is quite visible, spillover of these practices has been reported in neighboring nonparticipating villages. Participants were confident they would sustain land management activities into the future as a result of the financial benefits they provided and the improvements in soil quality, moisture retention, and soil erosion they had witnessed. They also cited as motivation the continued encouragement provided by chiefs, government support workers, and other leaders in the communities. The new solar-powered irrigation scheme serves fewer farmers on less land than expected and faces some operation and access challenges, but farmers with access to irrigated land intend to continue using and maintaining the infrastructure because of the large increases in yield and crop diversity they have experienced.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? (EQ 2. [Part 1])

The ENRM grant interventions led to sustained adoption of many of the CA and land management practices implemented. Table D.1 summarizes the extent to which respondents reported having sustained the practices and activities three years after the close of the grant. These rankings were assigned based on participant feedback in Key informant interviews (KII's), focus groups, and observations conducted during the final data collection process.

Table D.1. Adoption and sustained adoption of activities

Practice activities	Interim	Final
Solar-powered irrigation scheme	✓	✓
Tree planting	✓✓	✓✓ + ⊞
Establishing woodlots	✓	✓✓ +
Contour farming	✓	✓✓ + ⊞
Swales/watersheds	✓	✓✓ + ⊞
Making and using manure fertilizer	✓	✓ + ⊞
Mulching	✓	
Crop diversification	✓	✓
Gully reclamation	✓	⏸
One seed per station	✓✓	✓✓ + ⊞

✓ Adopted/Sustained
✓✓ Widely adopted /Widely sustained
⏸ Less readily sustained
\+ Spillover reported among non-participants in the same villages
⊞ Spill over among non-participants in other villages

Which land management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2.a. [Part 1])

More readily sustained practices

The majority of respondents spoke positively about tree-planting activities and their plans to continue them. Respondents identified environmental benefits that improved their farms: ground moisture retention, reduced soil erosion, shade and windbreaking, among many others. Farmers also reported overall benefits to livelihood, such as infrastructural improvements derived from the sale of firewood and more sustainable charcoal production. Prior to FISD, forests were said to be stripped for charcoal production. Since the introduction of SLM practices by FISD, the practice of tree cutting is controlled, and people are encouraged to preserve woodlots. Interviewees reported that income from charcoal production had been replaced by an array of small businesses.

Figure D.1. A woodlot

Grant implementation staff reported that these changes in small businesses led to a 12 percent improvement in access to productive assets for participating households, paving the way for environmental conservation to flourish. As one male community leader put it, "Everyone has managed to have woodlots to prevent destruction of trees and have their own" (CL_M2). Note that FISD was providing financial incentives to encourage participation in some ENRM activities, such as tree planting. In some instances, financial difficulty after the end of the project forced some people to return to unsustainable wood collection practices.

> *"Each and every village has a woodlot and the trees are doing great." (CL_FX)*[20]

Participants who had access to successfully irrigated land through the solar-pump scheme readily sustained SLM activities in order to maximize additional harvests. As these farmers now had access to reliable water, they indicated that they would continue farming through the irrigation scheme to maintain their improved crop production and income.

Box ridge alignment, swales, and one seed per station were also readily sustained. According to respondents, visible benefits such as increased crop harvests were responsible for the uptake and spillover of these activities. Participants reported notable spillover in nonparticipating villages, as these techniques were accessible in both understanding and application, which meant that many farmers could follow these practices easily.

[20] The following codes are used to identify the type of respondent quoted: SG = grant staff; CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; F = female; M = male. Numbers differentiate each unique interviewee.

> *"These things spread widely. It started from the group level to the village level. It moved from the traditional authorities to the group head, and from there it moved to the village. And in the villages, it spread to each and every house." (FG_M13)*

Practices less-readily sustained

Respondents in three separate interviews noted that gully-making activities had failed to continue. This was due primarily to the end of financial compensation from FISD, paired with the limitations on gatherings in response to COVID-19. Farmers also reported low motivation to continue digging gullies, as the work is hard, and the benefits are not direct.

Why did farmers sustain these practices?

The majority of participants listed financial and environmental benefits as the main reasons for sustaining ENRM practices. Since adopting the activities, many farmers saw an increase in agricultural outputs. For those associated with the solar scheme, some experienced multiple harvests per year. This change meant greater food security and, for some, a surplus of produce for commercial sale. Some farming practices also enabled farmers to save more money as they switched to compost manure instead of expensive fertilizer, and they were able to plant successfully with fewer seeds. These benefits motivated farmers to continue the practices and were the primary reasons for spillover among nonparticipants.

Village chiefs were identified for their role in encouraging farmers to maintain ENRM practices through local law making. Chiefs were noted to uphold communitywide respect for the ENRM interventions through new bylaws, in which they banned and reduced reversion to harmful practices such as tree cutting, herding livestock in the vicinity of seedlings, and setting of fires near the woodlots. Participants reportedly self-policed, and violators were punished through the payment of fines to the chief. The bylaws motivated farmers to maintain community and personal woodlots by creating fire breaks and constructing fences to prevent damage to trees. Participants reported that the bylaws generally improved farming and living conditions.

> *"If anyone is found not to be participating in the community development, they will pay a fine to the chiefs. So people in fear of the fine would come to the community development and work with everyone." (CL_M1)*

Interviewees also identified the government of Malawi as a positive influence on the sustainability of ENRM practices. Since FISD's departure, farmers reported that the encouragement of government extension workers reinforced information provided in the FISD trainings. Further, the government incentivized sustainability by providing grant payments to farmers for existing woodlots and providing seeds to village chiefs to demonstrate support for the FISD interventions.

Barriers to sustainability

Natural factors, such as crop and tree damage, proved a constant setback for participants. Damage from grazing livestock, persistent and uncontrollable weather, and droughts that stopped seeds from germinating were among some of the challenges that farmers experienced. In one of the villages where the irrigation scheme was implemented, heavy rains washed away the vetiver grass that was planted to reduce soil erosion, discouraging many farmers from continuing the practice. Interviewees also reported challenges from armyworm infestation and termites killing trees in areas where pesticides were rarely available. Though ENRM activities were viewed positively, uncontrollable natural setbacks may have been a factor in reducing

some of their positive impacts among participants.

Participation in some activities was motivated mainly by monetary incentives. Participants were reluctant to continue laborious activities once the grants were over and payments were ended. FISD incentivized farmers to participate in some ENRM activities (such as gully digging) through financial compensation. Laborious practices such as these proved unsustainable following FISD's departure, as farmers did not perceive any direct or indirect benefits to them. One respondent noted, "It won't work just to say, 'Let's get together here and do this work' [without payment] when there aren't necessities in our homes." (WH_M4) FISD appears to have organized the activities as well, as many participants noted that after the grant ended, they were left unprepared to maintain interventions alone.

Because of the rising prices of land and water, some farmers doubted that the solar-irrigation scheme would be accessible for the poorest. Some participants had already found the irrigation scheme unaffordable. As a result of the control landowners had over prices, as well as the demand for irrigated land, many saw access to this resource becoming unaffordable for the least well off.

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2. [Part 2])

Overall, it appears that participants understood and sustained most of the CA and SLM practices promoted by FISD as they were taught. For instance, farmers adopted and had success with manure compost making, recognizing that it was less effective at boosting land productivity than purchased fertilizer, but also less costly and more environmentally friendly. Farmers also sustained swale channel and box ridge construction following the end of FISD's involvement and reaped the benefits, which suggests appropriate application. Further, farmers experienced increased yields on small plots and savings from efficient seed planting, which likewise suggests appropriate application of ENRM practices. However, we were not able to ascertain whether these practices were applied appropriately for the full environmental advantages they could afford.

Are there differences in sustained adoption between male and female farmers? (EQ 2.a. [Part 2])

Overall, women were more active in adoption and sustaining SLM activities, although ultimately involvement was a collective effort between men and women. Respondents reported that men and women worked together on SLM activities. According to respondents, the ENRM groups reinforced gender equity and acted as a first step for encouraging greater division of labor among men and women. In addition, as women made up the majority of these groups, their leadership within them encouraged more women to adopt the activities. Women were keen for it to be heard that they work harder on the ENRM interventions than men. One female stated, "Women are being more active than men, but women are also more committed to the work, since men are reluctant." (WH_F2)

Findings on changes in gender roles in the household and communities and income-generating activities

The evaluation questions guiding this section are the extent to which SGEF activities resulted in sustained changes in gender roles in households and communities three years after the FISD grant ended. We also address questions about stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers into the future. We have found that there has been a sustained equitable division of labor on farms and in homes, with women becoming more involved in agricultural practices. VSL groups also

significantly aided women's financial independence and increased their opportunities for leadership. These changes were sustained through the continued encouragement of local leaders and the benefits of women's increased income. Stakeholders were confident that these changes would continue in the future, supported by the continued financial benefits of VSLs and the encouragement of leadership within the communities, while the only vulnerability mentioned was the return of household poverty.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3.)

Changes in gender norms that the Social and Gender Enhancement Fund initiated have been sustained three years after the end of the FISD grant. Table D.2 summarizes the extent to which changes in norms were sustained and the effect they had on gender equity for nonparticipating women.

Table D.2. Adoption and sustained adoption of activities

Gender roles	Interim	Final
Increases in joint household decision making regarding:		
Land and natural resource management	✓	✓
Household finances	✓	✓
Changes in division of labor on the farm and at home	✓	✓ +
Leadership opportunities for women	✓✓ +	✓✓ +
Female-headed household involvement in community decision making	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

\+ Spillover reported among non-participants in the same villages

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a.)

Increases in joint household decision making regarding land and natural resource management and household finances were sustained three years after the grants ended. Participants reported that VSL groups were a likely facilitator in sustaining improvements in household decision making for women.

Household decision making- land and natural resources

ENRM and SGEF activities positively affected women's household decision-making role regarding land and natural resources, and these positive changes were sustained three years after the grants ended. Before the intervention, men held decision-making power with minimal female input. Several interviewees spoke directly of the developments in leadership from women at the household level. Since the intervention, women reported providing input on areas such as the types of crops grown on family plots and what agricultural practices to adopt. A male community leader presented the image of an older marital dynamic where a woman withheld ideas out of male intimidation. However, in recent years, participants reported that "families are moving well." (WH_M1) Another male farmer who spoke of shared ideas in his family added: "They [women and men] enlighten and help each other." (WH_M3)

Household decision making- household finances

Participants reported growing respect and trust for women's contributions in financial decision making and affirmed that increases in joint household decision making regarding finances had been sustained. Women's increased influence in

community and household settings is attributed largely to their ability to access leadership roles through the VSLs and in Regenerated Freirean Literacy Through Empowering Community Techniques (REFLECT) circles. Further, in many cases, females attached to VSLs were financially able to contribute to their households. Both male and female interviewees identify this growing share of female contribution to household income as positive and noted that it contributed to more equitable household decision making around finances. One male in a KII spoke of the intergenerational effects that shared decision making had on his children: "The way I am and my wife, we are making decisions together. That means my child is seeing what I am doing, and when the child gets married, he or she will do as he or she saw from their parents. I believe this will continue." (WH_M1)

"Women did not have any decision making because…they were not practicing the activity. But with the initiation of the project and with the ENRM activities, the decision making has improved [in households] and almost…more than… in the community. As I said earlier on that, it was 50/50 involvement of the women." (GS_F1)

A small minority of female interviewees disclosed their envy towards women who are jointly included in decision making, stating that for women in their own group, joint decision making "is not possible." (FG_F27) Another female head of household suggested that increased financial independence created separation within marriages, with the empowered woman seen as less reliant upon men for daily financial support. (WH_F3)

"Women are able to be independent and not depend on someone to give you money. When you access the money from the VSL you are able to use it responsibly." (FG_F27)

Some respondents worried that joint household decision making might be contingent on household finances. According to participants, the ability to borrow money and start small businesses, paired with gender sensitization lessons, allowed many women to participate in joint decision making. In several interviews, however, participants suggested that a potential downturn in women's income could lead to a reduction in women's involvement in household financial decisions. They reasoned that if women were unable to generate sufficient income or were reluctant to borrow money from VSLs, this might limit their decision-making power in their households, since increased income and the ability to borrow allowed many women to participate in financial decisions.

Household decision making- access and management of assets

Increases in women's household decision-making power regarding access and management of assets for living were sustained. From the small number who answered this question, men were particularly appreciative of women's abilities, reporting that women were simply better informed in this regard. Easy access to credit for VSL members who were predominantly women also increased the female share of the breadwinner status. Respondents also credited supportive communities as a factor that encouraged women to participate in income-generating ventures. VSLs and income-generating activities (IGAs) combined with increased knowledge of agricultural inputs increased equity in decision making on household assets.

Additional insights about participation of women in income-generating and other SGEF activities

While this evaluation does not contain evaluation questions specifically about income-generating activities, they were an important part of the grant program logic. Some of the activities were very popular and had implications for gender equity and potentially in reducing the need for unsustainable use of natural resources. For these reasons, we describe the sustained adoption of these activities and some of their effects. Overall, we found that interventions resulted in widely sustained participation in VSL groups, with spillover inside and outside participating villages despite difficulties caused by the COVID pandemic. Income-generating activities were sustained, but REFLECT circles largely diminished. The enthusiasm for VSLs and IGAs appears warranted, with multiple effects on income, gender equity, and management of natural resources. Table D.3 summarizes the extent to which these activities were sustained three years after the close of the grants, and whether there were spillovers to non-project participants.

Table D.3 Sustained adoption of income-generating activities and SGEF practices

Practice/activity	Interim	Final
REFLECT Circles	✓✓ +	⏸
VSLs	✓✓	✓✓ + ⊞
Participation of women in income-generating activities	✓✓ +	✓ +

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b.)

The majority of respondents (both men and women) reported increased equity in the division of labor within households and in the community. Participants reported new roles for women in sectors such as construction and an increased presence of men in childcare and domestic tasks such as cooking and household upkeep. Further cooperation of men and women was described by one ENRM leader as “easing each other’s workload.” (CL_M1) Decreased reliance on men for household income was a further advantage, as households were more financially secure if the man was unwell. One female respondent shared her experience, stating, “Money is not scarce,” having now worked together with her husband. (WH_F1)

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c. [Part 1])

The success, the continuation, and in many cases the growth of SGEF activities such as VSL groups helped widely sustain leadership opportunities for women. Respondents noted that the majority of participants in REFLECT circles and VSLs were women. In these FISD-introduced groups, leadership roles were split 50/50 among men and women. In addition to roles within these groups, land committees and the water user association were also cited as settings where new leadership roles emerged for women. Since the interim, VSL groups and REFLECT circles continue to provide an access route for women’s leadership within communities. Among other leadership positions, some farmers also cited that the timing of group meetings in the afternoons when men were typically unavailable as a factor that further enabled female leadership.

Women's leadership extended past the FISD program as the interventions were timed to move in conjunction with growing sentiment for female leadership in Malawi. In both the government of Malawi and Christian churches, there was a push for "equal" involvement of women. As a result, female pastors were becoming more commonplace in Malawi. Interviewees showed a growing awareness and support for women breaking long standing barriers into leadership and believed they were laying foundations for future generations.

The Village Development Committee's 50/50 gender requirement for leadership positions between men and women was achieved in all specified accounts. The consensus among interviewees remained positive, with many complimenting women's leadership, dedication, and integrity. Village chiefs were also noted to have actively encouraged new female leadership within these groups.

A small minority of participants reported negative reactions toward female leadership, citing a preference for patriarchal leadership and instances of jealousy among women. Nevertheless, it was clear that the overall feeling toward female management and leadership in communities was positive, as those sentiments far outweighed the negative ones. It is also apparent that many interviewees attributed this change in part to the various arms of the FISD project and the education it provided to communities.

Participation of women in community organizations remains higher than in the years before the arrival of FISD. Since the interim, the enthusiasm surrounding women's involvement in community organizations has increased markedly. Interviewees referenced FISD interventions as encouraging participation of women and laying a clear pathway to leadership. One participant in an all-male focus group shared his observations: "You will find 15 women and 1 man in class. You will never find a class full of men. So, in my opinion, women are the ones developing and making us happy. Even at village banks, you will never find men." (CL_F2) These sentiments revealed the extent of the transformation of women's participation in the community.

> *"Women are the ones taking part mostly. For instance, if there is some work to be done few men are present while women come in large numbers." (CL_F2)*

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c. [Part 2])

Participants reported a positive community-wide attitude shift towards fairness and inclusion of female-headed households in community decision making. This change is attributed to the increased participation of women in female headed households as both leaders and participants in community organizations. As one male focus group participant put it: "They are also leading very well, which also brings jealousy to others, thinking is it all about this position because they are leading very well, they are acting like die hards [putting in their whole effort] because they have no hindrance." (WH_M2)

Income-generating activities for women also "erupted" due to the success of FISD initiatives. Many participants pointed to VSL groups, financial literacy classes, and greater crop yields from ENRM activities as factors that aided in this change. Since the interim, women continue to be seen in new areas of economic activity, such as small businesses that sell homemade foods, crafts, and livestock. This indicates the diversification of income within households previously reliant on subsistence farming. One female interviewee summarized this new economic order this way:

"FISD enlightened us on the need to find alternative means of income generation apart from subsistence farming. This saw men continuing with land cultivation, while women had to do some other activities such as small-scale businesses," (WH_F3) which indicates improved conditions and status for women and reduced financial dependence on men.

Business loans from the VSL groups were also sustained by many participants, as they gave women financial opportunities that they were not experiencing prior to the coming of FISD. Participants reported livestock as the most popular purchase, as livestock could be sold for produce or breeding. Next was home improvements, which ranged from smaller purchases such as doors and iron sheets to the building of stable, permanent dwellings. Last, personal business investments enabled members of the VSLs to gain the startup capital that wasn't previously available. Participants report using VSL funds to purchase basic household items, such as soap and shoes, as well as more expensive items, such as motorcycles. This range is a sign of the opportunities VSLs provide to members and their households.

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d.)

The presence of spillover for SGEF activities is noted in a few cases among nonparticipating villages. According to respondents, the lack of gender equity training and formalized support has made it harder for many to adopt these practices. Despite the challenges, one female interviewee noted that these practices have been emulated in other regions: "From this Lundu area, these ideas have spread in some other areas downhill." (WH_F3) Although gender issues persist, participants have seen visitors inspired by the depth of women's involvement in leadership and motivated to take these lessons home.

Findings on stakeholders' perceptions of the sustainability of grant activities

This section looks at stakeholders' perceptions on the sustainability of grant activities into the future. Despite setbacks from COVID, farmers are confident that the majority of SLM activities will continue to be sustained. Financial benefit remains the key motivator for sustaining SLM activities, and tasks with intense physical demands remain the least likely to be sustained. Participants remain optimistic on the sustainability of changes brought by SGEF activities, such as women's active leadership roles in the communities.

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a.)

Overall, participants were confident regarding the sustainability of most activities targeting land management as a result of benefits such as notable improvements in soil quality and productivity. Activities such as tree planting, swales, and contour farming were readily adopted and widely sustained by farmers, as they improved the environment and increased crop yields for farmers. Spillover for these activities and others was also reported by participants, which suggest farmer interest. Participants also reported wanting to experience the long-term effects of environmental changes from activities such as tree planting, which would require sustained change.

What factors were driving beneficiaries to continue to adopt SLM practices? (EQ 4.c.)

Improved finances due to increased crop yields was the main factor driving participants to continue SLM practices. This income benefit was repeatedly noted as a key factor in maintaining interest. For farmers

in the solar-powered irrigation scheme, the benefit of income from an extra harvest per year was a significant driver. Perhaps unsurprisingly, participants spoke more keenly of SLM practices that were ultimately profitable. As an example, participants stated that tree planting had improved water retention in soil and reduced water runoff while improving crop harvests. Participants also noted that while providing clear financial benefits, these practices did not require significant maintenance or time commitments. Where participants viewed no direct benefits from the sustained investment of time and money in the SLM activities, they saw those activities as untenable. Families showed a tendency to prioritize working to maintain immediate day-to-day income above spending time on activities that did not directly generate income or other benefits.

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ 4.b.)

Most respondents agreed on the sustainability of VSLs in the future as they mobilized and empowered both men and women socially and financially. VSLs enabled women to participate in the workforce through enabling them to borrow money to start small business ventures and generate their own income. Men and women reported benefiting from women's independence, as women were now generating income for households.

Although rare, the reduction of income-generating activities was noted to affect the stability of some VSL groups. Monetary issues were noted by some interviewees as disruptive to the confidence participants had in VSLs. Because of financial hardships, some financially vulnerable members were at risk of defaulting on their payments. Defaults were a detriment to VSLs and caused differing degrees of penalties, including exclusion in participating in future VSL groups.

Respondents thought that REFLECT circles would be less-readily sustained because of the lack of resources for leaders. Interviewees noted that following the end of FISD payments, teachers were unwilling to donate their time as group leaders, which caused many groups to end.

Most respondents were confident that the new norms surrounding the division of labor will continue. Although one participant believed that lack of money for basic necessities might reduce participant willingness to continue with changes in gender roles in households, most participants agreed that shared work showed clear benefits and multiplied the outcomes of the work. As one grants staff described it: "So the sharing of work in households, even the men now could do some core work because they could see that, at a certain time, some three hours, the women would go to business. So that means he could see the benefits of the women being in business, because at the end of the day, that woman—the wife—will bring some cash at home and be relieved." (GS-F1) The sole individual disagreeing on sustainability was a male farmer who noted a reduction in the availability of paid work due to COVID-19 and said that the preference of many men was to remain employed and provide for the household. This preference might result in a return to household roles for women if there is increased competition for paid roles.

Overwhelmingly, participants were confident in the sustainability of more women in leadership positions into the future. Words such as respect and admiration were used frequently while describing the growing progress and trust in women's leadership. As a result, women will likely continue to garner support in their role as leaders. The increase in women in leadership in the communities has meant that it is no longer seen as an all-male domain.

> *"Most women that have been put in positions of leadership have so far delivered the goods. People are satisfied with their performance as leaders and would not hesitate to give them a fresh mandate." (WH_F3)*

The consensus remains that contributions and capabilities of women in female-headed households are likely to be sustained. Respondents reported that community education empowered women in female-headed households by showcasing their contributions and capabilities. Several interviewees did note, however, that following the departure of FISD, these gains might be lost because such households might not have the required supports. As one participant put it, "The participation of female-headed households has declined because the assistance that was coming is not there. Such households have to mind the farm, the house, and everything." (WH_M4) The precarious nature of the involvement of these women in community decision making, along with the other burdens they must bear on the farm, house, and upkeep of families means their community involvement will need work to be sustained.

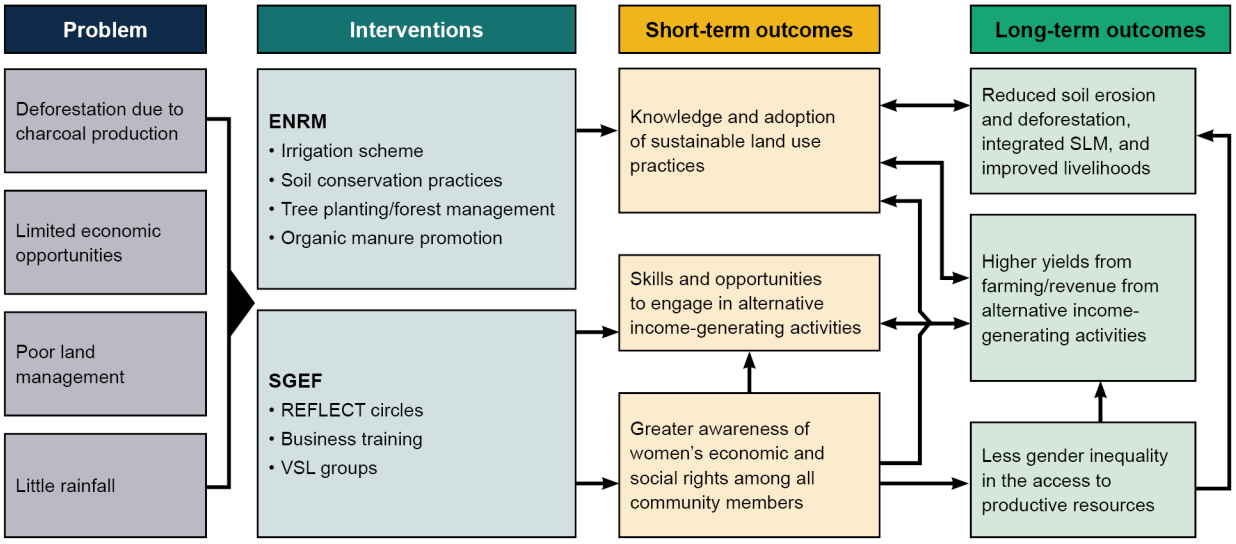
> *"These are being maintained, the reason being that we can see for ourselves the difference in the way households were being run previously when a woman was not involved in the decision-making process, and now that she is part of the decision process. The positive outcomes that we are witnessing now have motivated us to continue with the process." (FG_M4)*

Generally, interviewees were unsure whether women will continue participating in income-generating activities such as small business. Those who thought women's involvement in IGAs would be sustained in the future were encouraged by the notable improvement in income and upward social mobility women had experienced. Those who were doubtful were discouraged by several factors: the instances of crop damage due to pests and the absence of FISD incentive payments, which some women used to fund income-generating ventures. These factors were further worsened by COVID-19, which impeded the local economies and further limited women's participation in IGAs.

Findings on how the FISD logic model held up

As second way to evaluate the success or lack thereof of the FISD project, we conclude with an assessment of how the logic model for the FISD grant program held up. In Figure 4, we depict the FISD-specific logic model reported in our interim evaluation, which includes the issues the project was designed to address, the interventions envisioned for implementation, and the short- and long-term outcomes (Velyvis et al. 2019). Overall, we found that the project's interventions followed the program logic flow. As a result, two of the long-term outcomes (higher yields from farming and revenue from IGA, less gender inequality) were reported. There was no evidence in the interviews to assess a reduction in sediment runoff. Note that some of the long-term outcomes would require a scale-up of these interventions to create an impact. However, among the villages where the FISD interventions were well implemented and received, this logic model showed evidence of having worked.

Figure D.2. Program logic for FISD's grant activities



The FISD-program logic (see Figure D.2) held up for the majority of ENRM activities. By implementing the interventions as planned, participants reported experiencing many of the intended short- and long-term outcomes of adopting SLM practices. Among the many benefits, SLM practices resulted in the improvement of soil conditions and moisture retention, which increased yields and reduced sediment runoff. To a lesser extent, the program logic for SGEF activities also held up, as participants were able to develop businesses with loans from VSL groups. The trainings and REFLECT circles produced the positive outcomes of (1) more equitable division of labor and increased joint household decision making, and (2) promotion of income-generating activities through building of business capacity.

Summary

FISD was an MCC-Malawi grantee that carried out ENRM and SGEF activities in the Lunzu–Linjidzi catchment area of the Blantyre district from 2015 to 2018. In addition to these activities, FISD also introduced a solar-powered irrigation scheme to supply water to local farmers. The scheme was partially successful: though it provided irrigated land for fewer participants than expected, those who received irrigated plots experienced a great deal of success in farming. In addition, participants with and without irrigated land used ENRM practices to improve their crop yields and experienced other benefits such as the reduction of land degradation, deforestation, and soil erosion. The most popular ENRM activities among participants were tree planting, contour farming, and planting one seed per station. Since implementation, farmers have sustained these activities as a result of the financial benefits they experienced from increased harvests. FISD also introduced interventions intended to reduce gender inequality through its SGEF activities. Since implementation, women have increased their participation in community decision making through taking leadership roles in various community organizations. In addition, SGEF activities helped change attitudes surrounding women's household tasks, which resulted in more shared household labor, freed up time for women, and increased joint household decision making regarding land and natural resources and finances. These activities saw widespread adoption and sustainability, as did VSLs, which allowed women to contribute to household income. Overall, participants responded positively to the changes that occurred as a result of FISD interventions.

Appendix E.

CCJP Case Study

THE CATHOLIC COMMISSION FOR JUSTICE AND PEACE
THE DIOCESE OF LILONGWE, MALAWI

CCJP Case Study

MCA-Malawi granted the Catholic Commission for Justice and Peace (CCJP), an organization in Mangochi District, $362,084 to implement Environmental and National Resource Management (ENRM) and Social and Gender Enhancement Fund (SGEF) activities. The three-year grant spanned August 2015 to July 2018.

CCJP implemented a variety of ENRM activities to improve land conservation, such as planting trees and training communities to make contour ridges in their farm plots and crop fields, and SGEF activities, such as gender equality trainings, household planning and budgeting trainings, village savings and loans (VSL) groups, REFLECT circles, beekeeping, and a goat pass-on project (where those who receive goats pass on kids to other project participants)

Project title	Empowerment of Lingamasa Communities for Power Generation Grant: $362,084
Subcatchment	Communities along Lingamasa in Mangochi District 31 villages of Traditional Authority Chowe
Summary of activities	**ENRM** 13. Tree planting 14. Natural resource management trainings a. Contour ridges b. Clearing bushes and making fire breaks c. Establishing nurseries d. Mulching e. Planting vetiver grass 15. Establishing village resource committees **SGEF** 16. REFLECT circles 17. VSLs 18. Gender equality trainings on household decision making and division of labor 19. Empowering women through leadership training 20. Bee farming 21. Goat pass-on scheme

This case study presents the results of the CCJP project as of 2021 in villages where interventions were well-implemented and community members were enthusiastic about the activities, three years after the close of the Malawi compact. We analyzed this case study using data from key informant interviews and focus group discussions with program participants and community leaders. This final case study provides updates on key findings presented in the interim evaluation (Velyvis et al. 2019) and presents new findings on sustainability and spillovers of outcomes from the CCJP grant. Five years after the grant began, participants continue to plant trees, clear bushes, and implement other sustainable land-management practices. Participants report that their incomes and food security have improved from better crop yields. Community members continue to implement SGEF practices, particularly gender equality in household labor and decision making, leadership opportunities for women, and income-generating activities through VSLs, which also improve household incomes and quality of life.

Summary of key findings

Findings on conservation agriculture and land management practices

- Planting trees is the most widespread ENRM practice, followed by clearing bushes, fire breaks, and contour ridges.
- Improved soil fertility and crop yields have increased incomes and food security.

Findings on changes in gender roles in the household and communities and income-generating activities

- Expanding joint household decision making has improved household well-being for women and men.
- More equitable division of labor has increased women's independence and status, helped men be more proactive regarding household tasks, and in turn, improved marital satisfaction.
- VSLs have helped women generate income and improve household welfare.
- Leadership opportunities for women have increased since the end of the project.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Participants and community leaders agree that improved land management and gender equality practices will be sustained in the future.

Findings on conservation agriculture and land management practices

The evaluation questions guiding this section focus on the sustained adoption of grant-promoted ENRM practices three years after the CCJP grant ended and whether stakeholders perceive these practices as sustainable. (For a complete list of the evaluation questions, please see Appendix A. Each evaluation question appears in green before the relevant subsection.) We found that, motivated by increased soil fertility and productivity, participants have sustained many of the land-management practices. ENRM activities such as tree planting, making contour ridges, and mulching were among the most readily sustained, and some of these practices have spilled over to non-project participants.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land-management practices by farmers and communities? (EQ 2 [Part 1][21])

Participants reported that the ENRM grant interventions led to sustained adoption of many of the conservation agriculture and land-management practices. Table E.1 summarizes the extent to which farmers and communities continued to adopt the practices and activities three years after the close of the grant, as reported by respondents.

Table E.1. Adoption and sustained adoption of activities

Practice activities	Interim	Final
Tree planting	✓✓	✓✓✓ + ⊞
Mulching	✓	✓✓
Vetiver grass	✓	✓
Forest management/natural conservation/clearing brush and making firebreaks	✓✓	✓ +
Contour farming practices (ridge alignment, etc.)	✓	✓✓ + ⊞
Planting one seed per station	✓	✓ + ⊞
Planting fruit and vegetable gardens	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

Three years after the project ended, community members continue to plant trees and nurseries, clear bushes, build fire breaks, and make contour ridges in their fields. Project participants and community leaders report that communities are continuing to practice most of the activities implemented by CCJP. In addition to the most widespread practices listed above, community members report they continue to work on natural-resource committees and conduct meetings on land-conservation activities. They also report that they continue implementing practices such as mulching, planting vegetable gardens, and establishing and enforcing rules and regulations to preserve forests. Community observations confirm that nurseries have been established and are producing trees for replanting. For example, one community has

[21] Numbers listed after evaluation questions refer to which evaluation question is being answered.

produced banana pups for replanting. Community observations also confirm vetiver grass growing and a forest regenerating. Photos from field observations also show mulching and a thriving village woodlot (see Figure E.1).

Figure E.1. Photographs of continued ENRM practices from community observations

From top left to bottom left, clockwise: Vetiver grass, forest regeneration, a woodlot, mulching in project GVHs. Photos were taken in July after harvest and before land preparation for the next season.

Which land-management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2.a [Part 1])

Planting trees is the most widespread ENRM practice in project areas, followed by clearing bushes and making fire breaks, making contour ridges, and planting vetiver grass. All communities continued to plant trees after the completion of the project. According to respondents, a majority of the ENRM trees, both those in the forest reserve and those that were planted in people's farms during the project, are doing well, because community members feel ownership that motivates them to take care of the trees. Respondents with fruit trees on their farms report that the trees are thriving and some are bearing fruit. Most communities continue to make fire breaks and clear bushes in the forests. Making contour ridges is also a common practice project participants are continuing. According to respondents in the focus groups and interviews, approximately 70 percent of community members continue to make contour ridges on their farm plots. Some community members implemented this practice before the project, but they credit the project for training them to make more and better contour ridges and for their better ability to maintain them. Respondents also mention planting vetiver grass to further help prevent soil erosion.

Improved soil fertility and crop yields resulting in increased incomes and food security motivate community members to sustain land-management practices. Community members report that planting trees near their farms helps improve soil fertility by preventing erosion and water damage. The improved soil quality and resulting improved harvests motivate community members to continue this practice. Project participants are also motivated to continue clearing bushes and building fire breaks because they see that doing so preserves trees during fire season. Participants also report that soil fertility is improved through the prevention of fires. In addition, protecting trees from fire produces more harvestable offshoots for community members to plant trees in their farms.

> *"We had this problem of prolonged hunger, but because of the construction of contour ridges we are better. And even in our farms we have contour ridges because of them. We are thankful that there was not much water in our farms up to the time we harvested." (FG_M5)*[22]

Participants also continue to build contour ridges, because they see how this practice is preventing damage to their fields and improving their yields. One respondent said that although this activity requires a lot of work, they are motivated to continue doing it because it produces large benefits. Some see this practice as essential to the survival of their farm; in one project community, several focus group participants said that the main motivation to make contour ridges is fear that their farms will be ruined if they do not.

Chiefs' commitments to the activities have contributed substantially to the continuation of many land-management practices. Other motivation for continuing ENRM practices include feeling ownership over the activities and wanting to comply with rules and regulations. Community members in both GVHs where data were collected said chiefs were instrumental in facilitating the continuation of most project activities. For example, focus group participants reported that they were motivated to continue to clear bushes, make fire breaks, and plant trees in the forest, in part due to the leadership of village chiefs, who motivate the villages to get together for communal workdays.

> *After CCJP [ended], the chiefs and chairmen are playing a big role in protecting the forest reserves, since people do something with an aim of getting something out of that, because when they were being called they were getting some benefits. In some communities, the chiefs are like a backbone of protecting the forest reserves from being destroyed. (FG_M4)*

Fines established by the village committee meetings as part of the project have also discouraged community members from burning and cutting down trees. Community members report feeling ownership over the project activities, which motivates them to sustain the practices. For example, community members feel invested in the well-being of the trees they planted and thus feel motivated to continue their upkeep by clearing bushes and making fire breaks.

CCJP's departure from the communities has limited the reach of some activities, such as protecting the forest from deforestation and tree upkeep. Although most program participants continued CCJP activities after the completion of project, several focus group participants said that CCJP's departure left the community with insufficient support for continuing or expanding some practices. One respondent explained that some activities, such as tree maintenance, had not yet spread to the entire community, and a few respondents said that the community members were not able to fully develop some of the skills taught by the program before CCJP's departure. A few participants cited CCPJ's departure as the reason why some forest destruction is occurring now. A mixed group of individuals in one project village explained that during the CCPJ project, most communities strongly enforced protection of the forest. However, since CCJP left, respondents argue, some people have gone back to taking wood from the forest for charcoal and firewood.

[22] The following codes are used to identify the type of respondent quoted: CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; F = female; M = male. Numbers differentiate each unique interviewee within a case study.

> *Those who plant one seed get greater yields on small plots of land, so when others see that someone with less land is getting greater yields than them, they start to ask themselves if what they are doing is right… So next year they try doing this on a small plot and see that they get more bags [of maize], and then next time they do it on the whole farm. (FG_F6)*

Lack of information and misinformation are barriers to adopting practices. Focus group participants explained that community members who lack information or understanding of the program activities were less likely to adopt practices. For example, some individuals who have not adopted making contour ridges do not understand that this practice improves crop yields. Community members report that individuals who have not adopted this practice believe that individuals with higher crop yields are achieving this effect by using expensive fertilizers, not by implementing contour ridges. A group of women in one GVH reported that some people expect to be paid to plant and maintain trees in the common spaces. Some community members mistakenly believe that others who are mulching, weeding, and pruning trees in the forest reserves are getting paid for this work. This misunderstanding keeps individuals from planting trees because they are waiting to get paid to do this activity.

Land-conservation techniques, such as planting trees and making contour ridges, have spilled over into neighboring communities, because neighbors see benefits from these practices. There are significant reports of people in neighboring communities adopting ENRM practices for themselves. Most communities report that contour ridge making and planting one maize seed per station has spread to neighboring communities. Other soil-conservation techniques, such as minimum tillage farming, planting trees, and not burning bushes have also spread. Neighboring communities are reported to be taking up these activities because they can see the benefits to ENRM communities, such as higher yields and better soil. For example, community members in neighboring villages near a village where data were collected planted their own forest after observing others in the project village do this. The village where data were collected has become known in the area for being the village that is "for conserving the environment." Demonstration plots have helped spread practices to new communities. For example, leaders from neighboring villages visit the project village demonstration plots and then bring back the practice to their area. Leaders in the project village invite these neighboring leaders to visit the plots as a way to give back, as they have also been invited to past demonstrations.

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2 [Part 2])

Project participants were able to apply project practices following CCJP's recommendation since the end of the grant. Respondents described that all practices, such as making contour ridges or planting one seed per station, were done appropriately; no participants said they were unable to apply the new practices. In additional, respondents did not report needing to adjust or change the practices to make them more suitable for their context; they continue to follow the ENRM practices as they were taught.

Are there differences in sustained adoption between male and female farmers? (EQ 2.a (Part 2))

Women were more likely and faster than men to adopt most land-management practices. Although some respondents believe that there is no difference in how groups have adopted activities, most respondents agree that men were less likely and slower to adopt ENRM practices than

women. Men and women reported that men were less likely to take the program seriously and put effort into it. For example, women participate more in the group meetings; a group of mixed-gender respondents in one project village reported that one of their committees has eight women and two men. In another project village, a group of women reported that few men show up to the collective forest-upkeep days; sometimes its only women. One group of women and a mixed group of women and men both stated that men started to take up activities after seeing women implement them.

> *Mostly us women listened and followed the program; men were mocking us, but some were understanding. It is up to women to take the activities to improve farming, the man will not do anything. If the woman works hard then you will see the man maybe adopting little by little since everything is looking like it's in the hands of women. If the woman loses interest, it means nothing will happen. (FG_F5)*

Respondents believe that women are more likely than men to adopt ENRM activities because these activities are closely related to their household tasks, they are eager to take advantage of the new leadership opportunities, and men are busy with other types of work. Women are also more likely than men to value CCJP activities, because women take care of most household chores that are related to ENRM issues, such as cooking with charcoal and firewood; they are more aware of the source of these household essentials, because the scarcity of these items affects their household duties. In addition, ENRM activities help alleviate hunger through improved crop yields; women are more keenly aware of this benefit, because they tend to oversee feeding their families and providing childcare. Men and women report that women work harder than men, partially because women want to take advantage of the new opportunities for participation, and partially because they need to work harder to get a leadership position. One respondent explained that men do not have time to do these activities because they are busy with work, and thus need more convincing to start participating.

Findings on changes in gender roles in households and communities and income-generating activities

The evaluation questions guiding this section relate to the extent to which SGEF activities resulted in sustained changes in gender roles in households and communities three years after the CCJP grant ended. We also address questions about stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers into the future. There has been a widely sustained change toward more equitable division of labor on farms and in homes, and widely sustained changes in increased joint household decision making and leadership opportunities for women since the interim evaluation. Spillover of increased joint household decision making and more equitable division of labor has been reported among non-project participants in the same villages. These changes have led to increased household well-being, improved status for women, and more peaceful marriages. Stakeholders were confident these changes would continue.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3)

Changes in gender norms that SGEF initiated have been widely sustained three years after the end of the CCJP grant. Nonparticipants in

the same villages have also adopted some of these new norms. Table 2 summarizes the extent to which changes in norms were sustained and the effect they had on gender equity for non-project participating women.

Table E.2. Sustained changes in gender roles in the household and communities

Gender roles	Interim	Final
Increases in joint household decision making regarding…		
Land and natural resource management	✓	✓✓+
Access and management of assets for a living	✓	✓✓+
Household finances	✓	✓✓+
Changes in division of labor on the farm and at home	✓	✓✓+
Leadership opportunities for women	✓	✓✓
Female-headed household involvement in community decision making	✓	✓✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

\+ Spillover reported among non-participants in the same villages

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a)

CCJP activities greatly improved gender equality in decision making about household finances and agricultural activities in all project communities. The improvements in gender equality are palpable. Overwhelmingly, male and female participants in focus groups agreed that SGEF trainings improved gender equality in household decision making. Before the project, respondents said, families had more disagreements about household decisions related to cultivating land and finances. Three years after the end of the project, most families are discussing financial decisions as a group, according to focus groups. Focus group participants report that before the project, men would take all the money from crop sales and would not share profit information with their wives, but couples who attended SGEF trainings now decide together what to do with the profits. For example, one respondent said that men would manage the sale of the tobacco crop, while women would take care of household chores, but now, husbands and wives grow tobacco together, and both manage the money from tobacco sales. Gender equality has improved on decisions related to expenditures for land purchases, agricultural inputs, school fees, and food. Couples also make joint decisions about agriculture and whether to use village bank services. For example, respondents report that husbands and wives decide which crops to plant and whether to use fertilizer.

Increased joint decision making has improved household well-being for women and men and motivated project participants to continue this practice. Participants in focus group discussions report that improvements in gender equality in household decision making resulted in fewer disagreements in families. Women and men report that women feel more empowered than before these activities. These changes have shifted some household expenditures from entertainment-related purchases to investments in household welfare. Some community members reported that when men had more control over household finances, they would spend money on alcohol and prostitutes, but now husbands and wives agree to spend money on food, children's education and well-being, or investments in agriculture and other income-generating activities. Lastly, respondents report that there are fewer conflicts in homes, because this

approach has improved harmony between husbands and wives. The chiefs played a role in supporting these changes by encouraging people to attend the project trainings on gender during the grant and by continuing to promote gender equality.

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b)

> *Women are clapping their hands [from joy] because husbands are sharing knowledge with them. [The men used to] sell goods and take all the money for … alcohol or prostitutes, but now women and men ask each other how things should be done and share opinions. The children also involved in decision making. (FG_M3)*

Participants state that labor division between men and women has significantly improved thanks to the project activities, both in quantity and type. Most respondents agree that SGEF trainings have improved the division of labor between men and women. Before the project, labor unfairly burdened women; one female respondent said that women were working all day while men relaxed most of the time, but now household labor is divided more equally. In addition to the amount of labor, the types of tasks that each gender carries out are more equally distributed. For example, men now also help with cleaning, cooking, laundry, and even child care, while before the project, men were only doing farm labor and relaxing, according to several focus group participants. Spouses are now helping with each other's chores, so there is less division regarding which spouse "owns" each chore. Even agricultural labor is more equally divided: one example a respondent gave was that both husbands and wives carry firewood and farm equipment now, while previously the women had to carry everything, and the man would just walk next to her.

> *Men cannot do breastfeeding or childbirth no matter what. But all the other tasks we should do them together and share the time to do them. (FG_M3)*

Improvements in division of labor have increased women's independence and status, increased men's proactivity, and in turn, improved marriages. According to respondents, changes in the division of labor due to SGEF trainings have helped women become more independent and improved their status in their households. One male community leader explained that women used to be viewed as "useless, just like a tool to use for work," but now they are respected more as empowered actors with agency. SGEF activities have helped men become more proactive in identifying household needs, rather than relying on women to give them directions. These improvements are also reported to have positive effects on marriages by reducing quarrels.

> *Yes! It has increased because the group that was doing this, there were many of us coming to do this as a group. There were many men and women. The households changed because the men were hearing it for themselves, that 'ah, if we do this then it'd be like I'm abusing the woman.' Now things have changed indeed. (FG_F4)*

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c [Part 1])

Female and male community members agree that leadership opportunities for women have increased after the project. Focus group participants estimate that women hold approximately 50 to 70 percent of leadership positions in their communities, both in project groups and in other groups. Not only

has the number of women in leadership positions increased, but the type of positions that women are elected to has also diversified. Before the project, women were mostly elected only as secretaries or committee members. However, thanks to the SGEF program trainings, women are village chiefs, members of parliament, chairpersons, school committee members, treasurers or Village Development Committee (VDC) members, and church group leaders. Some reported that women can be sheikhas (although one report said women are still not leading in mosques). More women hold the highest leadership positions, such as chairperson or committee leader, than before the project, but men still outnumber them in these roles. Previously, people doubted women's ability to lead, but now community members perceive that women are as capable as men of serving as chairpersons. There were several reports of women being elected over male candidates. In one example, men and women were running for a position at a fishery, but a woman was elected. Both men and women support women in leadership positions. Respondents mentioned that both married and unmarried women are empowered to take up leadership positions.

> *Not only men were suppressing us, but we [women] also used to underestimate ourselves in front of the group. They used to tell us, maybe madam you should take this position, and we could say, eeeh I won't manage, those who could manage were only men. Now we don't look down on ourselves anymore. We now take positions properly. (FG_F3)*

> *At first when women were leading a large group of people they were being regarded as prostitutes, but today because of being given knowledge, it removed the bad thought of thinking a woman is a prostitute if she leads. (FG_M2)*

Improved transparency and outcomes motivate communities to support women in leadership positions. Male and female focus group participants report that they prefer women leaders, because women are more transparent than men in the same positions. Some community members also reported that women leaders are better able to understand the problems of other women.

> *In addition to that point that we are happy with that, when men are in positions, they do not disclose things. But, when women are in the same positions, they disclose things. But women call all the executives and tell them that this is what we have, and we feel happy with that [compared] with having a man as a chairperson. (FG_M1)*

Despite overall improvements in leadership opportunities for women, some barriers remain for women in leadership roles. One female leader reported that she is insulted for being in a leadership role as a woman. Another respondent mentioned that some women are still hesitant to volunteer for leadership positions, because some negative associations with women in leadership positions linger from before the project. But most respondents, women and men, report that women are more confident about taking on leadership roles now as a result of the project trainings.

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c [Part 2])

Female-headed households participate in decision making and leadership positions in communities thanks to the project trainings. Both male and female respondents reported that female-headed households are participating in village groups and leadership opportunities after the project. Many focus groups with mixed genders reported that they believe that women from female-headed

households are included in decision making and leadership positions in the community thanks to the project trainings, and they believe that they will continue to be included going forward. For example, one participant noted that they value the opinion of single mothers and thus want to include them in decision making. Another focus group of mixed gender reported that most women who participate in leadership positions and village activities are household heads. One participant from a focus group of female-headed household said that she was the chairperson of the program. This participant reported feeling included in village gatherings.

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d)

There is some spillover in improvements in gender equality in household decision making and division of labor within targeted communities, but no spillover to neighboring villages. Many focus group participants reported that improved joint household-decision making has spread from family to family within project communities. Several community members reported that improved division of labor between women and men within households has also spread to others outside the training attendees. Some families who did not attend the SGEF trainings are now starting to follow in the footsteps of those who have attended the trainings after learning from them about gender equality and seeing how those families are experiencing the benefits of these practices. However, there are no reports of changes in joint household decision making spreading beyond the targeted community to other villages in the vicinity.

Additional insights about participation of women in income generating and other SGEF activities

Although we do not have an evaluation question about income-generating and other SGEF activities, these activities were an important part of the logic behind the CCJP grant program. Some of these activities were popular and had implications for gender equity and potentially for reducing the need for the unsustainable use of natural resources. For these reasons, we describe the evolution of these activities and some of their effects. VSLs were sustained and continued to expand to nonparticipants. However, participation in the goat pass-on program and REFLECT circles diminished.

Table E.3. Sustained adoption of income-generating activities and SGEF practices

Practice/activity	Interim	Final
REFLECT Circles	✓	⏸
VSLs	✓✓	✓✓✓+
Income-generating activities	✓✓	✓✓✓+
Beekeeping	✓	⏸
Goat pass-on program	✓	⏸

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

VSLs are the most successful SGEF activity and have been continued thanks to their popularity with community members. Before the project, there was a large unmet need for savings and loans products. VSLs have proliferated in project participants' communities, because they are filling an important need and helping participants improve their incomes substantially. Due to

their popularity, VSL enrollment has increased since the end of the project, and all the project communities have created new VSL groups to absorb the demand. VSL membership has increased from less than half of the households in the community to the majority of households. Although men also participate in VSLs, women are more active in these groups. Respondents attribute women's involvement in VSLs to the belief that women care more about the well-being of their households than men. Although some VSLs existed in the project areas before the project, CCJP's intervention greatly improved how the VSLs function, and made them more popular. For example, CCJP's intervention taught VSL to improve their operations and adjust the loan amount to the incomes of loan recipients.

VSLs have helped women generate income; invest in farm production, home improvement, household goods, and children's education; and ultimately improve household welfare. VSLs grant loans to members that enable them to finance investments in their households and businesses. In addition, the project provided trainings on budgeting, financial literacy, and agricultural techniques. Loans from VSLs have helped project participants start small businesses, such as a selling fritters, fried fish, or chips. One respondent noted that she has taught her son some of these business skills, so he helps her with the business by making tea for customers while she is frying fritters. Focus group participants have noted that such lucrative activities are spreading to other community members; some individuals have observed their neighbors making profits from planting potatoes or selling fried fish, learned from them, and followed suit. Many community members use VSL loans to purchase farm inputs, such as fertilizer, that improve crop yields, food security, and household incomes through crop sales. In addition to agricultural investments, some VSL members use loans for home improvements, such as corrugated metal roofs. Others improve their living conditions by purchasing household essentials, such as cooking tools, mattresses, and bicycles. Some project participants also use VSL loans for school fees and uniforms, and for medical emergencies.

> *The benefit is that when the people keep money at the VSLs, they use it for most of the needs at home like buying livestock [and] buying needs for the home [such as a mattress], which is like developing the home. Even when they did not have a bicycle to use, when going to the farm, they are able to buy such things and use even the home utensils. At home, women have a good lifestyle because of VSLs. (FG_F1)*
>
> *We borrow money, pay children's school fees, and buy their uniforms. That means we are educating the children, and the future is surely progressing, it is not going backwards comparing to back then. (FG_F2)*

CCJP has been instrumental in increasing income-generating opportunities for women. In addition to VSL loans, CCJP provided other income-generating opportunities for women, such as bee farming, fruit farming, and a husbandry pass-on scheme. For example, the program has taught recipients to plant certain lucrative crops, such as fruit and potatoes, and these activities are spreading to other community members. According to a few community leaders, some community members were initially reticent to participate in these activities, but the activities have now become habit. An important benefit of these income-generating activities is that they have helped project participants diversify their incomes from a dependence on maize and rice cultivation, and thus improved financial stability. Respondents estimate that about 70 percent of families are participating in these activities, and most activities are done by women. For example, in one community in a project village where data were collected, the group managing the bee farm is three-fourths women. However, men are also participating and benefiting from income-generating activities. Respondents say that

they are motivated to continue these activities to stay out of poverty. Participants use the proceeds from these activities to pay for school fees, food, and cloth.

> *Before this project was here…women we were just sitting at home since we had no education. We were not there when people were learning about money, so we were just staying in our homes. So, we were just farming, sleeping, and waking up. But since CCJP came, even myself right now, although I am an elderly person… I am thankful. I wasn't civilized, but now I am… No, it's not about whether the man or the woman will be the one who will find the money, no. But everyone should have the knowledge of generating income and when you find the money, you should have knowledge to think of how you are going to save the money. Even the man should have knowledge of knowing how he is going to find money on that day. (CL_F1)*

Bee farming has seen limited success due to the establishment of a forest reserve after the project. The majority of beehives that one project village received from CCJP (13 out of 20) were hung on trees in a forest that the government later fenced off to make a game reserve, limiting community access to the beehives. These fenced-off beehives became damaged as a result of limited upkeep. In one community, respondents claimed that no one was trained in beekeeping, so they couldn't do anything productive with the materials that they were given. However, in the other GVH where data were collected, the beehive program was more successful. One community in that GVH reported receiving 15 beehives that are helping recipients make money for children's school fees by harvesting and selling honey. One challenge in this community is that people from outside the village are trying to steal honey from them. Some respondents reported that they are now purchasing their own beehive equipment to further invest in this income-generating activity.

The husbandry pass-on scheme was only partially successful due to difficulties keeping the goats alive and other unforeseen obstacles. CCJP gave goats to some community members for income generation. Recipients were expected to gift any resulting offspring to other members of the community to help spread the benefits of this program. The goat pass-on scheme is partially successful despite several barriers. One obstacle is that it is hard to find food for goats during the rainy season when people are busy working the farms. Another obstacle is that some goats died prematurely, sometimes due to poisoning from pigeon peas or because they were too young (still nursing) when given to recipients. Yet another obstacle is that goats sometimes get loose and destroy neighbors' property, and goat owners must pay for the damage. Because pigeon peas are poisonous to goats, one downside of this program is that people have had to stop planting them. Lastly, some goats are being eaten by hyenas, or they suffer from diseases, and project participants lack access to medicine to treat them. However, the project participants who have kept their goats alive have experienced significant benefits, and some have passed on new goats to other community members per program design. For example, in one project village, one respondent said that 10 goats were distributed in their community, and there are now 20 goats because of reproducing, so the benefits are sustained, spreading, and multiplying. Some people have sold the goats that their initial goats have given birth to, so they can buy food, cloth, and blankets. The financial support that people were able to generate with goats helped people not cut down trees, by replacing that as a source of income.

REFLECT circles have not been sustained in most communities despite their popularity with community members. According to focus group participants, approximately half of REFLECT circles have

been discontinued, even though participants found these groups helpful. Facilitators lost motivation to continue REFLECT circles after the departure of CCJP, because they were no longer being paid for this role. Although CCJP deigned the facilitator roles to be community development volunteer positions, the small stipend that CCJP provided to facilitators created expectations about the financial reimbursement and nature of these roles. When CCJP left the community and payments to facilitators halted, many facilitators did not want to stay on without payment and left the circles. Some of the materials needed to carry out REFLECT circle activities have been depleted, and members have not been able to replace them due to a lack of funds, further contributing to the decline of this activity. For example, the blackboard was eaten by termites in one community, so the group was not able to conduct literacy classes.

REFLECT circles were popular with community members and helped improve literacy and math skills. Both in communities where REFLECT circles have been discontinued and where they are still sustained, focus group participants report satisfaction with these groups. REFLECT circles helped improve participants' literary and math skills. Respondents reported that REFLECT circles were particularly helpful, because the attendants could provide input into the topics chosen in the sessions, so the material was relevant to the community.

Findings on stakeholders' perceptions of the sustainability of grant activities

This section looks at stakeholders' perceptions of the sustainability of grant activities into the future. Overall, stakeholders believe that their communities will sustain the improved land-management practices, income-generating activities, and gender-equality practices introduced by the program. Community members are motivated to sustain the land-management practices, such as planting trees, and income-generating activities, such as VSLs, because these practices are producing palpable financial and environmental gains. Stakeholders also report that gender equality practices will be sustained, because community members are enjoying the improvements in labor division and decision making that result from these changes.

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a)

Stakeholders agree that improved land-management practices will be sustained in the future. Stakeholders have observed that project participants are reaping many benefits from both ENRM activities, including financial rewards, so they believe the community members will keep sustaining these activities. Most community leaders noted that they have not seen most ENRM project activities slow down, so they believe there is no reason why the activities will not be sustained. Stakeholders are particularly positive about the prospects of tree planting and making contour ridges. The project communities have not only continued these activities, but improved land-management practices have spilled over to neighboring communities, indicating that this program will be sustained into the future.

What factors were driving beneficiaries to continue to adopt SLM (sustainable land management) practices? (EQ 4.c)

Project participants are motivated to continue SLM practices due to the environmental and financial rewards they are experiencing and thanks to the support of village chiefs. The benefits that respondents are getting from planting trees, such as improved soil quality, the resulting increase in crop yields, and improved incomes and food security, are likely to motivate them

to sustain this practice in the future. Project participants are also likely to keep making contour ridges, because this activity is increasing their crop yields and incomes. The commitment of village chiefs to continuing the SLM activities will also be an important factor in their sustainability going forward. Key stakeholders note that the chiefs' commitment to SLM practices has contributed to practices' sustainability.

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ 4.b)

All stakeholders believe that improvements in gender equality will be sustained in project communities. Respondents agreed that those who have adopted joint household decision making and shared division of labor will continue these practices going forward. Families who have begun to implement improved SGEF practices are motivated to continue doing so because they have experienced the benefits of these practices in their households. For example, improved joint household decision making has resulted in fewer disagreements in families, as well as other outcomes such as household financial well-being. Focus group participants also expect that women will continue taking on leadership opportunities. One stakeholder explained that now that the community has gotten accustomed to female leaders and seen that women are capable of leadership roles, they will not go back to dismissing women in such roles.

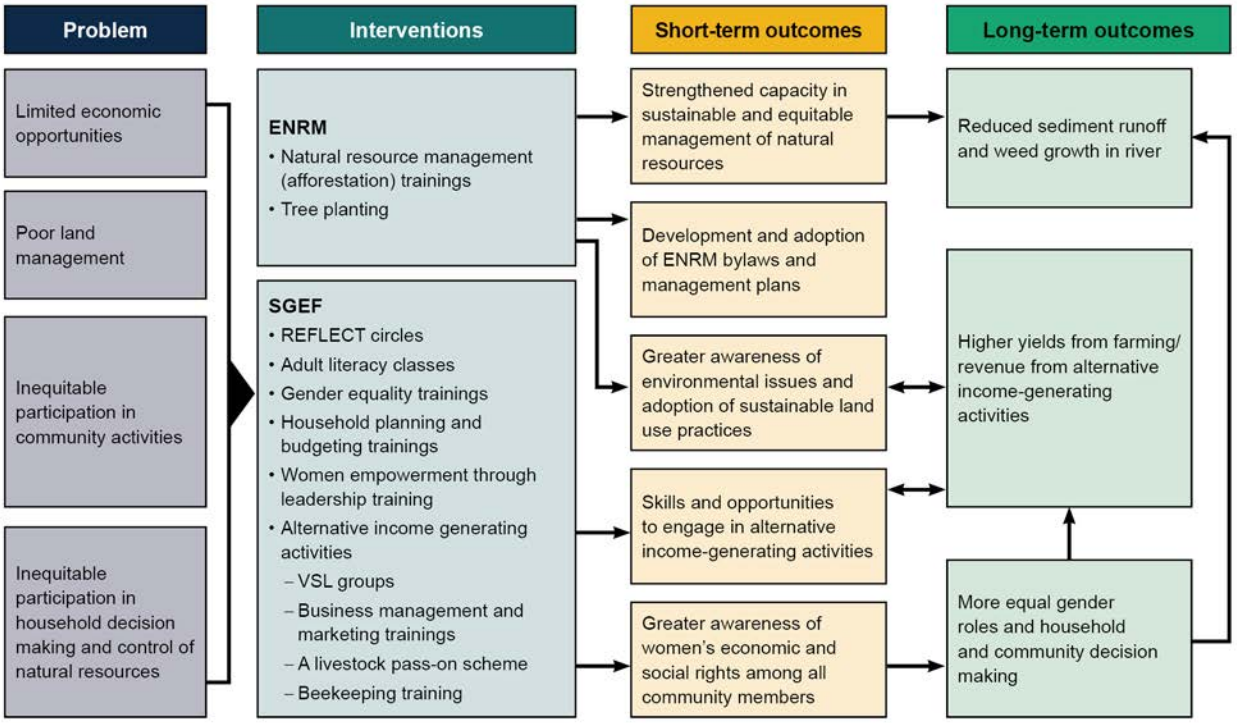
Stakeholders believe that project participants will sustain most income-generating activities because they produce financial rewards. Most community leaders noted that they have not seen SGEF activities slow down, except for REFLECT circles and bee farming in some areas, so they believe there is no reason why the activities will not continue. Stakeholders are particularly positive about continuing VSLs and income-generating opportunities for women. The sustainability of bee farming depends on the community's ability to access the beehives. REFLECT circles will likely discontinue because the project set up false expectations about reimbursing facilitators. The goat pass-on scheme will likely not be sustained either, despite some of its benefits, because it is difficult to keep the goats alive.

Findings on how the CCJP logic model held up

As a second way to evaluate the success or failure of the CCJP project, we conclude with an assessment of how the logic model for the CCJP grant program held up. In Figure E.2, we depict the CCJP-specific logic model reported in our interim evaluation, which includes the issues the project was designed to address, the interventions envisioned for implementation, and the short- and long-term outcomes (Velyvis et al. 2019). Overall, we found that not only did the project's interventions follow this flow, but also many of the long-term outcomes have been reported as a result. This pilot, at least among the villages where it was well-implemented and received, suggests that this theory of change is valid.

ENRM practices such as planting trees and making contour ridges improved soil quality, erosion, and incomes. The SGEF activities that were adopted provided income-generating opportunities, and improved women's status in the communities and, ultimately, crop yields and household revenues.

Figure E.2. Program logic for CCJP grant activities



Summary

MCC and MCA funded three-year grants to improve land conservation and gender equality. The CCJP grant was part of that effort and ran from 2015 to 2018. Our case study evaluation followed participants from the close of the grant project in 2018 to 2021, to see whether activities would be sustained. Overall, CCJP programs were well-received by the project communities. Participants adopted and continue most ENRM and SGEF practices introduced by CCJP. Among ENRM activities, planting trees, making fire breaks and contour ridges were the most popular and the most likely to be sustained going forward. Most SGEF activities have also been successfully adopted in CCJP communities; gender equality and women's empowerment in household decision making, division of labor, and leadership opportunities have improved thanks to the project. These activities are popular with community members and will be sustained going forward.

VSLs are also incredibly popular—communities have not only adopted VSLs but replicated them to absorb community members' demand for loans and will continue to adopt this practice.

Appendix F.

WOLREC Case Study

WOMEN'S LEGAL RESOURCES CENTRE (WOLREC)

WOLREC Case Study

The Women's Legal Resources Centre (WOLREC) in Malawi received a $442,461 grant from Millennium Challenge Account Malawi (MCA-Malawi) to implement a set of grant activities in the Balaka and Ntcheu Districts carried out in 81 villages from 2015 to 2018. WOLREC implemented both Environment and Natural Resources Management (ENRM) and Social and Gender Enhancement Fund (SGEF) activities, although the main focus was on SGEF activities. WOLREC used REFLECT[23] circles as the main implementing structure throughout the grant activities.

Project title	Promoting the Socioeconomic Status of Women to Achieve Sustainable Environment and Natural Resource Management in Balaka and Ntcheu Districts Grant: $442,461
Subcatchment	Upper Rivirivi and Nkasi 81 villages
Summary of activities	**ENRM** 22. Provide training on sustainable land use practices, including elephant grass planting, tree planting, and forest management **SGEF** 23. Establish community groups to discuss improved gender equality 24. Conduct training with women on leadership 25. Conduct meetings/training to sensitize community members/leaders on gender equality 26. Establish adult literacy classes 27. Establish village savings and loan groups to support alternative income-generating activities

[23] REFLECT, which stands for Regenerated Freirean Literacy Through Empowering Community Techniques, is a participatory technique to support constructive and open community conversations to address common development challenges.

This case study shares the results of the WOLREC project as of 2021 in villages where interventions were well implemented, and community members were enthusiastic about the activities. This report updates findings presented in our interim report (Velyvis et al. 2019) and presents new findings on the evolution, sustainability, spillover effects and unexpected outcomes of the WOLREC grant. Six years after WOLREC began activities, participants state they have widely adopted conservation agriculture (CA) and sustainable land management (SLM) practices taught by WOLREC with some spillovers to nonparticipants in the same villages and other communities. Respondents also state that SGEF project participants continue to practice gender equity concepts taught by WOLREC and perceive spillovers to nonparticipants in the intervention and other communities. For both land management and SGEF practices, participants identify tangible and nontangible benefits as their motivation for continuing.

This case study is organized by research question. For a complete list of the evaluation questions, please see Appendix A. Each evaluation question will appear in green before the relevant subsection. We begin by discussing sustained adoption of ENRM practices, continue in the following section with sustained changes in gender roles due to SGEF practices, and finish with a discussion on sustainability.

Summary of key findings

Findings on conservation agriculture and land management practices

- Three years after the end of the grant, participants have widely adopted the CA and SLM practices taught by WOLREC.
- Adopters cite the real and perceived benefits of CA and SLM as motivation for continued adoption.
- Extension workers and village chiefs encourage the practices.
- Other organizations continue WOLREC's work.

Findings on changes in gender roles in the household and communities and income-generating activities

- Respondents estimated 70 to 90 percent of project participants have adopted the new gender equity principles.
- Joint decision making has continued in participant households.
- Most participants apply the principles of more equal division of labor on farms and at home.
- More women are in leadership positions now, and opportunities for women have increased in participating communities since the start of the project.

Findings on stakeholders' perceptions of the sustainability of grant activities

- Respondents report they will continue with the ENRM activities.
  - Participants perceived benefits they do not want to lose.
  - Communities took ownership of the activities.
  - Other organizations after WOLREC provided further motivation and support to continue.
- Most respondents were confident gender principles taught by WOLREC will continue.
  - Practicing gender equality principles has become a habit.
  - Participants perceive benefits.
  - Village chiefs encourage community members to apply these principles.

Findings on conservation agriculture and land management practices

The evaluation questions guiding this section focus on the sustained adoption of grant-promoted ENRM practices three years after the WOLREC grant ended and stakeholders' perceptions of the sustainability of these practices.

To what extent did the intervention lead to sustained adoption of conservation agriculture and land management practices by farmers and communities? (EQ 2. [Part 1])

Respondents largely agreed that project participants have widely adopted the CA and SLM practices taught by WOLREC and continued practicing them since the end of the project in 2018. When asked to provide an estimate of how widespread the adoption of these practices was, a few respondents said that approximately 75 to 80 percent of project participants have adopted these practices as of 2021. Respondents also mentioned that community members who were not part of the project adopted some of the practices (such as tree planting, creating firebreaks, planting elephant grass) after seeing their neighbors' benefit.

The main motivations for continued adoption were that participants saw benefits, extension workers and village chiefs continued to encourage them, some participants took ownership of the activities and expanded them, and other organizations came after WOLREC and supported them. The main reasons for not adopting the practices, according to respondents, was that non-adopters were lazy, elderly, or renters.

Table F.1 summarizes the extent to which farmers and communities continued to adopt the practices and activities three years after the close of the grant, as reported by respondents.

Table F.1. Adoption and sustained adoption of activities

Practice activities	Interim	Final
Tree planting	✓✓	✓✓✓ + ⊞
Forest management	✓	✓✓ ⊞
Mulching	✓✓	✓✓
Watersheds / gullies to trap water	✓	✓
Making compost manure	✓✓	✓✓
Planting vetiver / elephant grass	✓	✓ ⊞
Ridge realignment	✓	✓
Planting one seed per plant station	✓	✓
Crop rotation	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

Which land management practices are more readily sustained by farmers and communities, to what extent, and why? (EQ 2a. [Part 1])

Respondents reported continuing with the following ENRM practices:

- **Tree planting and care: planting** reeds, elephant grass, and trees along the riverbanks; planting trees (including fruit trees) and regenerating existing shrubs; taking care of the woodlots by guarding them and creating firebreaks;

- **CA and SLM practices: ridge** realignment (mound ridges, box ridges); planting one seed per plant station; mulching and zero tillage; crop rotation; and making fertilizer from tree leaves or livestock manure.

"The WOLREC project was instrumental in teaching us a lot of modern methods of agriculture and we, as the people of this area, have been able to adopt them. I can personally tell you that as an individual, I have not been able to harvest the kind of harvest that I managed to get after following the advice that I got from WOLREC about planting one seed per station. I was able to get enough fertilizer which I was able to apply to my crop, and through mulching, which was a method I learnt through this project, I have been able to harvest so much. All because of the advice I was able to get through this WOLREC project." (FG_M22)[24]

WOLREC conservation agriculture practices provide a number of food-related and financial benefits, according to project participants, and experiencing those benefits served as the main motivation for continuing to adopt the ENRM practices taught by WOLREC. Practices such as planting one seed per station (seed spacing), making contour ridge markers, making and applying the correct amount of composted manure, and mulching plots to conserve water have led to improved production and increased harvest of maize and other crops. Increased harvest has led to great food stocks for participants, who state they have food throughout the year. Increased food stock has reduced their need to purchase food; they have become more self-reliant in food. In addition to improved food stock and reduced expenditures on purchased food, participants identified benefits from selling their increased crops. One community leader and female focus group participants said they were able to pay children's school fees from their increased farming income.

"Yes, the project has brought about so many unexpected, pleasant surprises. Certain things about modern ways of farming could only be understood by those people who went to school and studied agriculture. They were never known to villagers like us who never went to school. But through this project, all these things have been taught to us, and now we understand them, and are able to apply them." (FG_M25)

Respondents reported that planting trees during the intervention has been beneficial for them and the environment. In both villages, participants have a community woodlot (planted during the intervention) that provides them with income opportunities by growing and selling medicinal herbs and selling dry firewood. The income is used for various village developments (for example, buying materials used for digging graves when old materials are damaged). Some participants also planted trees on their farms during the intervention and reported that those trees provide shade, leaves for composting with manure, and protection to their houses from the winds (respondents reported friends who did not plant trees on their farms are still having their houses destroyed by winds). Planting fruit trees has also provided participants with fruit to eat and sell.

Respondents also reported that they noticed improvements to the water flow in the rivers Shiri and Rivirivi after planting trees along the river shores which has resulted in improvements to electricity supply.[25] Planting elephant grass, reeds, and trees in the river and along the shores slowed down

[24] The following codes are used to identify the type of respondent quoted: CL = community leader; FG = participant in a focus group; WH = female SGEF participant or husband of a female SGEF participant; F = female; M = male. Numbers differentiate each unique interviewee.

[25] Note: this is a conclusion respondents made but we don't have evidence to support this claim.

the water flow and reduced the rate of soil erosion, according to respondents. In one focus group, female respondents reported that the river in their village hadn't flooded for several years and they attributed the change to the planting of trees along the riverbanks that they had done during the project.[26]

Figure F.1. Woodlot with ground cover and box-ridging but clear of weeds

One community leader and a focus group participant in a project village reported that before this program they used to have electricity problems (it was turned off on Thursdays) but now it only flickers occasionally and comes back on after two minutes. They believe it is because the community has restored the environment and the river is almost back to the way it used to be without erosion.[27]

Respondents also reported that extension workers, chiefs, and village agents continue to remind community members of practices taught by WOLREC. Those who participated in the program and adopted these practices said that having this continued encouragement helps motivate them to continue with the practices. However, some community members who did not attend WOLREC meetings expect to receive something when attending meetings now, and when they don't, they are not motivated to participate and learn. This presents a challenge for community leaders to recruit new members to participate in these community activities (such as planting trees).

Several respondents mentioned taking ownership of the community SLM practices taught by WOLREC and expanding them after the project has ended. One respondent mentioned that they bought plastic material and made sowing tubes themselves to plant tree seedlings to make sure that WOLREC work did not end. They also began a program where if someone in the community did not have enough trees on their farms, others would share tree seedlings with them. Another respondent mentioned that in their community they chose one man and they have a nursery at his home where they plant new seedlings every year, and they send him to buy seeds. They manage to contribute a little to buy the seeds and sow the tree seeds and then they share the seedlings when wintertime comes. The program has also adapted to continue. One respondent discussed that some trees planted with WOLREC withered because of termites. To manage that, now his community plants trees that are more resilient to termites such as acacia and *mitangatanga.*

[26] Note: We do not have data other than from the respondents to verify this report.

[27] This connection might reflect WOLREC training that improving electricity is an outcome of tree and grass planting.

> *"There are benefits found in there, to say that before we were taught, we were just farming blindly not knowing how to conserve the soil. After we started adopting the methods WOLREC taught us we see a difference to how were farming previously before we were taught. There are benefits in this indeed. Because the harvest is now plenty, our soil is also not getting infertile, yes." (FG_F40)*

Program participants mentioned that other organizations coming after WOLREC provided them with further motivation to continue. In one project village, the World Food Programme through the Food for Assets project encouraged people to continue with CA and SLM practices after WOLREC left. Food for Assets distributed a 50kg bag of fertilizer to each of its enlisted households, which has encouraged many more farmers to practice mulching in their fields. Another organization, Find Your Feet, taught them to trap the water using swales in places where it runs off and use the water later to irrigate their fields. They also helped with planting vetiver grass on steep slopes, which helps keep the water from running off. This organization has reached almost every village in the area, so they have added to where WOLREC stopped and the groups have increased.

In another project village, Feed the Future took over some of the activities WORLEC had been implementing in the area. Feed the Future distributed bamboo plants to program participants and encouraged them to plant bamboo trees to prevent soil erosion.

Other communities who did not participate in the WOLREC program started adopting CA and SLM practices from project participants such as making gardens and village woodlots, planting and sowing trees on their farms, practicing mulching, realigning ridges, planting pigeon peas, beekeeping, constructing firebreaks, planting one seed per station, and planting reeds and elephant grass. The main motivation was that they saw how their friends were benefiting—for example, seeing that their friends had higher crop yields from their farms and were food secure, observing what they were doing (planting trees along the riverbanks).

Some respondents said that their communities have regressed on a few practices taught by WOLREC. For example, one male respondent in a focus group discussed how WORLEC taught them not to set fires everywhere in the communities and some members in his community have regressed on that because they forgot. WOLREC also taught them not to cultivate along the riverbanks; however, some community members went back to cultivating there because maize in their own fields was washed out by heavy rains.

Were the farmers able to apply these practices appropriately since the end of the grants? (EQ 2. [Part 2])

Based on observations conducted by our data collection team, respondents understood how to properly plant and take care of trees (a few respondents mentioned they used to think trees grow naturally on their own and do not need care). Respondents mentioned understanding the need to conserve the environment by not burning trash on the farms and not cutting trees excessively. A few respondents also mentioned that before the project came, they used to farm "blindly, not knowing how to conserve the soil" but now they understand and practice conservation agriculture practices like ridge making, planting one seed per station, and mulching successfully to have soil regain its fertility and obtain increased crop yields.

> *"That's when we were taught to plant trees, we should also be able to care for the forests. We should do clearing. We were taught very well with this project of WOLREC. Since that time our community was lagging behind, we didn't realize anything. That we can sow trees and plant, making forests in order to restore the environment, we didn't know about that to say the truth. But when WOLREC organization came and this project of caring for the environment. We see that it changed this community because everyone now is able to sow trees on his or her own. We now know that we can sow a tree like this whereas I never knew ever since but I have known from that time that ah trees are sown like that. Ah ah so when the tree is small it looks like this." (CL_F3)*

Are there differences in sustained adoption between male and female farmers? (EQ 2.a. [Part 2])

Before beginning project activities, WOLREC conducted a baseline survey and facilitated discussions with community leaders to get a broader picture of the community background and trends. These processes revealed that most women in the initial REFLECT circles in Ntcheu were pre-literate, did not participate in income-generating activities as much as men (especially those from male-headed households), and participated less in community development activities. To address these issues, the SGEF activities implemented under the grant were aimed to generate greater awareness of women's rights, which was theorized to lead to more women participating in community and household decision making and lead to more equal gender roles and decision making. WOLREC particularly encouraged women to participate and created male-only and female-only training groups for certain activities (stakeholders for the interim report noted that women in female-only training groups were more engaged with the training).

Respondents consistently said that women were leading environment conservation activities and have adopted these practices more than men have. Respondents think that WOLREC had women in mind when designing the project and encouraged them to participate in activities more. Overall, respondents agree that women continue to be more active in project activities and men are more interested in business and are usually away. There are few work prospects aside from agriculture in the area, so the men are away searching for opportunities. One respondent mentioned that some men hate being in places where there are a lot of women, so they avoided participating.

Findings on changes in gender roles in the household and communities and income-generating activities

The evaluation questions guiding this section are regarding the extent to which SGEF activities resulted in sustained changes in gender roles in households and communities three years after the WOLREC project ended. We also address questions about stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers into the future.

To what extent did the intervention result in sustained changes in gender roles in the household and communities? (EQ 3.)

WOLREC taught participants about gender equality and that men and women should work together and encouraged women to participate in community organizations and take on leadership positions. WOLREC also taught participants about financial literacy—how to save, how to make a budget, how to invest in a small business.

Respondents estimate that 70 to 90 percent of people within and outside their communities have adopted these new gender equality principles since the end of the project. In communities taught by WOLREC, participants understood the gender equality principles taught, adopted them, and realized they were benefiting from them.

Table F.2 summarizes the extent to which changes in gender roles in households and communities were sustained, as reported by respondents.

Table F.2. Sustained changes in gender roles in the household and communities

Practice activities	Interim	Final
Increases in joint household decision making	✓	✓
Changes in division of labor on the farm and at home	✓	✓ +
Leadership opportunities for women	✓	✓✓ ⊞
The involvement of female household heads in community decision making	✓	✓

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

Women have gained a lot of confidence since WOLREC trained them that they can do anything that a man can do, including being financially independent and taking care of their families. Participants thought that women are also continuing with these principles because women are not underrating themselves anymore (after being trained by WOLREC not to). One female focus group participant said she was severely abused by her husband but did not leave until she found the strength after attending the gender sensitization trainings from WOLREC. Other women said that their husbands did not allow them to leave the house alone (because of jealousy that they may interact with other men) and participate in community activities or do any business before the WOLREC project. But with the arrival of WOLREC, these women and men were included in trainings and started seeing benefits of women participating in income-generating activities.

Community members continue to encourage each other to keep up with the gender equality principles. One community leader interviewed said that he is continuing to encourage others in the village on the gender equality principles taught by WOLREC, even the young adults, and he is sending anyone who is violent to court. Community members also chose other people in the community (model men or model couples) to come and speak to other families about the gender equality principles and that encourages participants to keep these practices.

Respondents reported a reduction in gender-based violence and fewer divorces in their communities since the project came. For example, a community leader in one project village said they used to have many cases of drunken men perpetrating gender-based violence on their wives in their village but, after the project came, there have been no such cases. Respondents reported fewer divorces in these two villages, and they thought it was because there is less violence against women and less fighting about finances among couples, and because now couples work together and divide farm and household work.

To what extent did the intervention lead to sustained increases in joint household decision making regarding land and natural resource management and household finances? (EQ 3.a.)

Both male and female program participants reported that they started making decisions together with their spouses after attending gender sensitization trainings. According to respondents, before WOLREC conducted gender sensitization trainings, most men and women in the intervention communities made decisions separately on how to spend their money, with men leading decision making in the households.

> *"There used to be more cases [of] fights between a man and a woman in homes, maybe about finances—not agreeing on that. Maybe the man [...] will just get the money and use it to drink beer, just recklessly spending. But right now, those kind of cases in my court have ended. They do it together, maybe they want to share that money and do the same thing. He can even send the woman to go and bank the money. The man is taking part by giving the money to a woman to bank, this is what excites me more." (CL_M2)*

Respondents largely agreed that since the end of the program, joint decision making has continued to prevail in most households that participated in the trainings. Men and women continue to sit down to discuss finances together and make a budget, and they are encouraging each other. A few respondents also mentioned including their children in the family discussions on finances and farm management.

Families are continuing to apply these principles because they appreciated the lessons taught by WOLREC and saw how they have benefited them. Program participants (majority of whom were women) learned about financial literacy when attending the REFLECT circles—how to count, make a budget, save money, invest in small businesses. Female participants realized they can also help their families either financially or by doing tasks that were thought to be for men only in the past. Female participants reported feeling more empowered to contribute to decisions on finance, household and farm assets after being educated in the trainings and after participating in income-generating activities—such as village savings and loans (VSLs)—as encouraged by the program.

> *"At first, I used to find it hard to tell my wife when I got money so that we could budget together. But since the project came, we learned how to sit together as a family in peace and harmony with each other working on different projects together. . . . I used to budget everything on my own whenever I had money, and my wife used to agree to everything because I am the head of the family. Since we learned the importance of budgeting together, we have seen a lot of things progressing in our family because we discuss things first, before anything." (WH_M8)*

Community leaders and program participants also reported that there are fewer arguments in the families about finances and more peace, and that they are now saving money and using it to better their homes. Some respondents said that before, men and women used to gamble and spend their money carelessly, stealing money from their friends. However, now women and men learned that women can participate in small businesses for the benefit of the whole family, and husbands and wives sit down together to discuss the family budget.

To what extent did the intervention lead to sustained changes in division of labor on the farm and at home? (EQ 3.b.)

Respondents largely agreed that the program trainings have helped men and women to appreciate and adopt the practice of working together at home, in

the field, and in community activities (such as taking care of the community woodlots or attending community development meetings). Respondents described that before the project came, household work was gender specific. Certain work was done only by women (for example, cooking, fetching water, sweeping), whereas other work would only be done by men (for example, fixing the roof, making fences, cutting trees).

> *"Back then when we would go to the farm, the man would tell the woman to plant alone while he is just supervising activities on the farm. But now, we are both involved. Everyone picks a [plot] and is planting." (FG_F42)*

Almost all program respondents said that participants continued applying the principles of more equal division of labor on farms and at home since the project ended. The main reasons for continuing was that the project participants understood the principles taught in trainings that men and women are equal and can do any job. Both men and women reported that they also saw benefits of this approach. For example, men said they no longer waited for their wives to cook or fetch water and could do that themselves. And women said they no longer had the burden of all the household and farm work on themselves and had help from their husbands. Together they were able to finish work faster. This freed them up to participate in income-generating activities, with the benefits for the whole family.

Although most respondents thought that more equal division of labor was widespread in their communities, one participant thought that this has continued in households that participated but has decreased overall in her community because people lack the necessary motivation to continue (motivation provided by the trainings, for example).

> *"With the coming of WOLREC, I am so happy because at my house I had problems with the issues of gender. Now I am seeing change in how work is done at home. Now me and my husband, we work together and equally. During the rainy season, we had a heavy storm to the point that both the toilet and bathroom collapsed, so we had to work together, while I was working on the bathroom he was working on the toilet, hence we finished it all at the same time. So we are very much excited." (FG_F37)*

A few respondents mentioned that these practices of more equal division of labor have expanded to households that did not participate in the trainings (there is no information on how widespread this is). A few participants reported that some of their friends (who did not participate in the program) expressed interest after seeing these new dynamics of a more equal division of labor in the household when visiting them. For example, the friends hadn't seen a man or a boy cooking or sweeping before. Once they realized it was possible for a man and woman to work together and saw the benefits the participants were experiencing, they also began adopting those principles in their households. Others in the community observed men doing tasks that were previously done by women only—for example, carrying water or carrying their own hoes from the farm field—and expressed interest.

To what extent did the intervention lead to sustained leadership opportunities for women? (EQ 3.c. [Part 1])

WOLREC encouraged women to take leadership roles in the community and encouraged community members to embrace women in leadership roles**. In interviews in 2021, program participants reported an increased number of women in leadership positions than before the WOLREC program,** and some respondents noted that

leadership opportunities for women have increased since the end of the project. Women now hold leadership positions that were previously mostly taken by men: chairing different committees (such as the school committee, village health committee, and other different village committees), secretary, treasury, group village head, health workers, councilors, teachers, reverends in churches.

According to interviewees, women are more confident and do not refuse leadership positions, as they did in the past, after being trained and encouraged by the program. In the past, women were undermining and underestimating themselves and did not think they could manage being a leader. Both male and female community leaders noted in our 2021 interviews that women appear more relaxed when they speak up in meetings and community gatherings and that women are no longer afraid to take on leadership roles.

> *"There is no longer fear of leadership. We only thought it was for men. When women were selected to be the chairperson, they would turn it down, and say they wouldn't manage it, and give it to the men. But right now, no. The chairperson can be a woman. Even in the VDC, can also be a woman. In the groups they are able to hold different positions, a lot. While being a woman. That is happening. Even in the church, can be a woman and preacher better and preaching to the men too. It is very possible." (WH_F7)*

Respondents reported that, in their communities, people view women in leadership positions as good examples and admire and respect them. Women interviewees said they like to see women in leadership positions because *"women can't discriminate against fellow women,"* and they were sure women will advocate for them. In one community, a female participant said that the community does not allow the treasurer to be a man because of theft in the past and that women are more responsible and are afraid to steal, so they trust a woman in this position more. One female participant, who also holds a leadership position in her community, said that it is not easy for women leaders because they are often criticized if something goes wrong and are blamed for small mistakes.

To what extent did the intervention promote sustained female-headed household involvement in community decision making? (EQ 3.c. [Part 2])

Women who are heading their households also are involved in the community's development activities and are given leadership positions. Several participants estimated that 60 to 80 percent of women who are heads of households participate in community activities in their villages, and some of them also hold leadership positions. Two female community leaders reported that these women participate more in community development activities than they did before WOLREC came. This is because they have realized that they can achieve a lot by themselves. Many respondents commented that these women now have high self-esteem (after attending trainings taught by WOLREC). However, one female participant in a project village thought that participation of female heads of household has decreased since the project ended because many of those women still doubt their capabilities and there are no continued trainings to encourage them. A few male focus group participants reported that these women were active in several activities in their community although not many of them were involved.

> *"That time I didn't know about business but when I found capital from WOLREC VSLs and started my business . . . my household changed. It is the same thing my friends are saying that I have livestock; I can pay school fees for my child. For me I can say, my husband comes behind, in the front there is me." (FG_F30)*

Additional insights about participation of women in income-generating and SGEF activities

Although our evaluation does not have an evaluation question specifically about income-generating activities, VSLs, or REFLECT Circles, these activities were an important part of the WOLREC grant program logic. These activities were very popular and had implications for gender equity and potentially in reducing the need for unsustainable natural resource usage. For these reasons we describe the evolution of these activities and some of their effects.

Table F.3 describes the extent to which participation in income-generating activities and SGEF practices has continued as of 2021, as reported by respondents.

Table F.3. Sustained adoption of income-generating activities and SGEF practices

Practice activities	Interim	Final
REFLECT Circles / adult literacy schools	✓	⏸ + ⊞
VSLs	✓✓	✓✓✓ + ⊞
Income-generating activities	✓	⏸
Beekeeping	✓	✓✓ + ⊞
Goat pass-on program	✓	⏸

✓ Adopted/Sustained

✓✓ Widely adopted /Widely sustained

✓✓✓ Additional checks reflect expansion among project participants in the final round.

⏸ Less readily sustained

\+ Spillover reported among non-participants in the same villages

⊞ Spill over among non-participants in other villages

Men and women who participated in the project are continuing with the income-generating activities encouraged by the project such as beekeeping, goats pass-on program and VSLs in addition to the usual farming such as cassava production. Participants use money from VSLs to do business (selling fritters, buying fish for sale, running tuck shops), and use the profits to buy farm inputs, pay school fees and for home improvement, buy clothes, livestock, mold mudbricks and build better houses, buy necessities such as soap and salt, buy land to farm and sell the extra harvest, and build houses for others to rent.

Since the end of the project, VSLs have continued and expanded both in number of groups and number of members (doubling from 60 to 120 in one village), according to respondents. People from within and outside the community have joined the VSLs since the end of the project because they have seen how the others are benefiting. Members also noted that it is easier to borrow money from VSLs and the interest is low (compared to borrowing money from a neighbor or relative). People are encouraging each other to participate and continue the VSLs. In one focus group, respondents mentioned that young adults who recently got married were showing interest in VSLs as well.

In one project village, women created a similar program to VSLs but for buying utensils (people contribute money as they do for VSLs, and the interest they get from that is used to buy utensils). People in households have accumulated utensils through this program.

In another project village, Feed the Future (an organization that came after WOLREC) encouraged continued VSL participation by providing larger loans with smaller interest (10 percent interest that needs to be repaid within 4 months). Because this is a different intervention that followed WOLREC, it could account for some of the success or expansion since the end of WOLREC.

> *"The VSLs, I would say they have benefitted. . . . Even if I died today or tomorrow, what would I leave? I was very poor. That even on my funeral, they will not have anything to eat. But right now, because of the VSL, I have everything. I am keeping goats. I am keeping pigs. I keep chickens. The local ones. But starting from year that we started, my household has been changed. I used to wonder whether I would ever live in a better house than I do now. All that was made possible from WOLREC." (WH_F7)*

Even though the VSLs are expanding, they face hiccups, as some people are reluctant to pay back loans, making it difficult for the members to share the money in time. In one village, respondents mentioned that they began restricting members to only be able to borrow up to their invested share.

Since the COVID pandemic started, VSL participation has gotten worse because members were not able to continue with their businesses as they did before. Farmers cannot access good markets because transportation is more expensive now and some are afraid to travel. This has resulted in vendors coming in and buying their farm produce at lower prices. At the same time prices for farm inputs (such as fertilizer) and basic needs (soap, salt) went up. This has resulted in lower or no profits and lower investments in VSLs during the pandemic.

WOLREC also provided beehives and goats (goats pass-on program) to certain villages as part of its program, and those continue to be an important income-generating activity for these communities. The beehives continue to be a source of income through the honey participants sell and, in some communities, participants have built additional beehives on their own. In one project village, most of the goats died from a disease. In another project village, the goats reproduced, and all families who were in the program received one through the goats pass-on program (there is a goat's kraal at each household). They are also able to use the goat manure to make fertilizer for farm soil.

As during the project, there are more women participating in VSLs than men in 2021 because WOLREC had a priority of empowering women. According to interviewees in 2021, women value VSLs more than men do because men typically seek other work for money and VSLs are something women were trained for and found easy to participate in. For some women, VSLs continue to offer an option to generate income where they lacked any before the project.

Figure F.2. Beehives

Because of WOLREC trainings, women realized that they can be financially independent, according to interviewees. VSLs provided women financial freedom because they were able to run small businesses and earn their own money. In the past, women did not participate in income-generating activities because they thought businesses were for men only. Also, because of gender sensitization meetings, men continue to let their wives travel and operate small businesses, whereas before the project many were not allowed to leave the house. Respondents report that there is less fighting in families because women are busier and because they are earning money that helps their families do better financially.

To what extent did the intervention lead to spillover effects in neighboring villages incorporating key activities or exhibiting changes in gender roles in the household and communities? (EQ 3.d.)

Respondents reported that people who were not part of the program have also adopted several activities and gender principles after witnessing their friends or neighbors benefiting from them (there is no information on the extent of these spillover effects). People from nearby communities joined RELFECT circles (where WOLREC ran the adult literacy school and taught gender sensitization meetings). People from within and outside the community have joined VSLs and adopted beekeeping practices because they have seen how others were benefiting.

Program participants reported that their friends were interested in changes in the division of labor after observing men doing work that was previously considered to be for women only (such as fetching water, cooking, and sweeping).

Several respondents mentioned that people who were not part of the WOLREC project have also adopted putting women in leadership positions and treating them as equals to men. One community leader confirmed that in the communities where WOLREC wasn't working, he is able to find female chiefs.

Findings on stakeholders' perceptions of the sustainability of grant activities

Overall, respondents reported that they will continue with the ENRM activities because participants perceived benefits they do not want to lose, communities took ownership of the activities, and other organizations after WOLREC provided further motivation to continue. Respondents also thought that participants will continue practicing gender principles taught by WOLREC because they have become habit, participants perceive benefits, and village chiefs encourage others to apply these principles.

What are stakeholders' perceptions of the sustainability of grant activities targeting improved land management? (EQ 4.a.)

Respondents thought they would continue with the ENRM activities because they do not want to lose the benefits that come with the practices (more on that in the following section) but WORLEC's return to continue the trainings would be a big motivation, they suggested. Respondents mentioned that they plan to continue planting trees (including fruit trees) and will continue with crop rotation and mulching. They also plan to continue with the CA practices; however, one respondent mentioned that the price of fertilizer went up and they may not be able to continue.

Communities put bylaws in place for environmental protection (for example, they established a fine for cutting trees without

permission, and the person caught doing so has to plant 10 trees in return). However, some respondents suggested that people might be tempted to break those rules because of the worsening economic situation due to COVID and not having enough money to buy essentials. COVID is also preventing them from meeting in groups to take care of the woodlot, as they were doing before the pandemic.

What factors were driving beneficiaries to continue to adopt SLM practices? (EQ 4.c.)

The biggest motivation for continuing with the SLM practices is that participants saw the benefits and they do not want to lose them. The benefits include higher crop yields, the river hasn't flooded, trees provide wind shelter for their houses, and community woodlots serve as a source of income (for example, they sell medicine plants grown there and dry firewood) and a place for beehives (harvesting honey and selling it is another source of income).

Communities took ownership of the activities done at the community level—for example, getting together and taking care of the community garden or woodlot (by constructing firebreaks), and establishing bylaws to prevent others from cutting trees without permission. Community leaders and village chiefs continue to encourage others in their communities on these practices and enforce the bylaws by sending those who break the rules to court.

> *"They will continue almost everyone is staying in groups which are following the case of taking care of the environment. Because if they were few people that are staying in these groups, we would say it will be hard for us in future, but now almost everyone and the youth or those aging from 15 are found in the groups. We are discussing with them about taking care of the environment and developing families on finances. In future this job will have grown than the way it is now." (CL_F3)*

Program participants received support from other organizations to provide them with motivation to continue. As mentioned above, other organizations (WFP Food for Assets and Feed the Future) came after WOLREC and continued to provide similar trainings, distribute tree seedlings, and encourage communities on the CA and SLM practices. Some respondents mentioned that this motivated them to continue as well. It is possible these intervention villages may need support from outside organizations to continue with the CA and SLM practices.

What are stakeholders' perceptions of the sustainability of grant activities targeting social and gender barriers? (EQ 4.b).

Respondents largely agreed that they will continue with the gender equality principles taught by WOLREC because it has become a habit and they can't go back, they have seen the benefits, and village chiefs continue to encourage others in their villages on these principles. A few respondents thought that communities will not continue with these activities because they need more trainings as refreshers or reminders.

Respondents thought that VSLs will continue because people are interested in continuing (children and young adults are also becoming interested) and have benefited financially from participating in VSLs. Also, there are no alternatives for borrowing money because borrowing from friends or relatives is more difficult. In one project village, Feed the Future took over some of the activities WOLREC was implementing in the area such as expanding VSLs with larger loans. However, in the male focus group, respondents said that even if Feed the Future were to leave, they were still planning to continue with VSLs because they've seen the benefits (such as receiving

interest from their investments at the end of the year, having easy access to borrow money when needed, being able to borrow money and run their small businesses) A few respondents mentioned that VSL groups might not continue if COVID-19 does not go away because people are scared to be in group meetings.

Program participants who adopted gender equality principles taught by WOLREC, such as equal household decision making and division of labor, said they and their children will continue because they are seeing benefits. Couples will continue sharing household and farm work because they have seen how work is easily done when they work hand in hand. They realized that the way their parents taught them was wrong and it is more appropriate to work together.

In one of the villages where data were collected, a respondent mentioned that extension workers are still teaching and encouraging them to continue. But respondents were not sure it will spread because there is no one to teach these principles to other families, especially to young families that did not get a chance to participate in the trainings. Further trainings on this are needed. For example, WOLREC taught participants financial skills and how to make a budget in the REFLECT circles, and further training is needed to continue those.

Respondents thought that women will continue taking leadership positions because they have seen how beneficial it is to be included in things concerning their communities. Both men and women have seen benefits. Women said they are no longer fearful or shy and are not going back to being oppressed by men. Men said that now they are aware that women are capable of taking on leadership positions and they've seen benefits of working together with women.

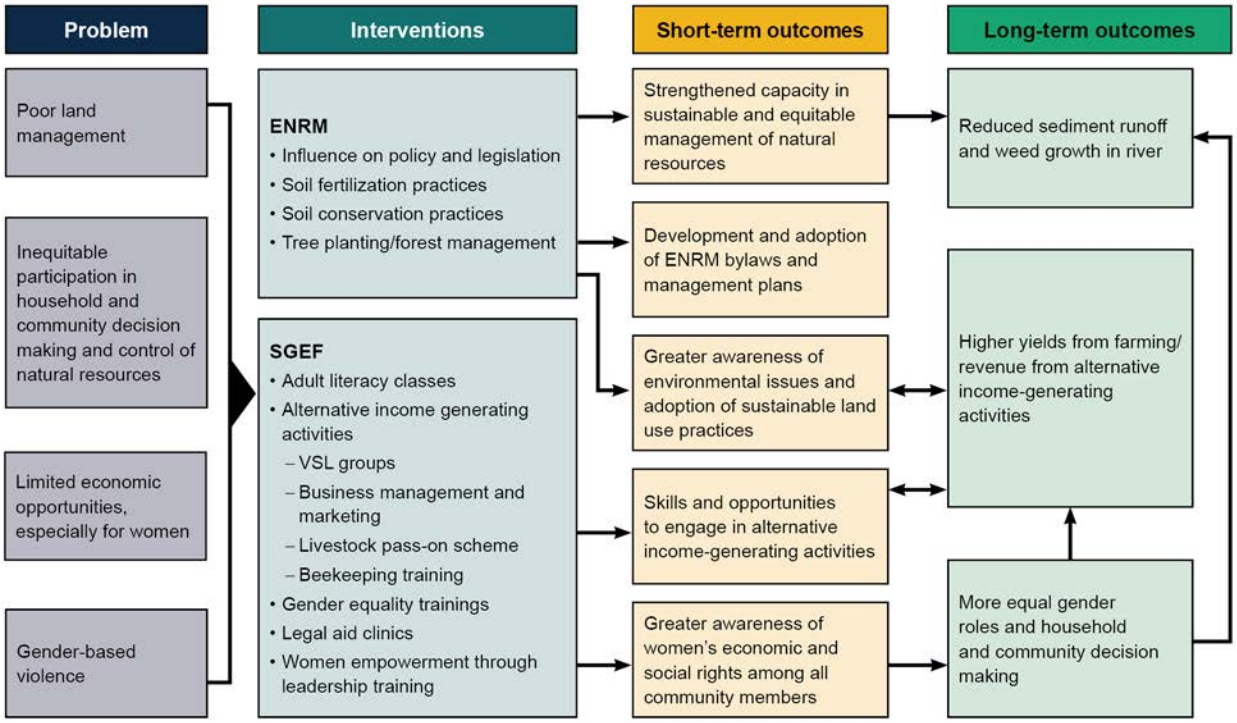
Findings on how the WOLREC logic model held up

As a second way to evaluate the success or lack thereof of the WOLREC project, we conclude with an assessment of how the logic model for the WOLREC grant program held up. In Figure F.3, we depict the WOLREC-specific logic model reported in our interim evaluation, which includes the issues the project was designed to address, the interventions envisioned for implementation, and the short- and long-term outcomes (Velyvis et al. 2019). Overall, we found that not only did the project's interventions follow this flow, but many of the long-term outcomes have also been reported as a result. Some of the long term-outcomes would require scale-up of these interventions to create an impact, but this pilot, at least among the villages where it was well implemented and received, has shown proof of concept for this theory of change.

> *"Because we have realized, women were given the opportunity that even us women we can be in any position. The woman can hold any responsibility. We shouldn't undermine ourselves because women have been oppressed for a very long time. So, when the light has reached us, we cannot go back to the dark." (CL_F3)*

Based on the WOLREC logic model, changes in land use practices were designed to reduce sediment runoff and weed growth in the river basin in the longer term. A few respondents mentioned observing such outcomes (river not overflowing like it was before the project, better electricity supply); however, we do not have evidence to support such claims. On the household livelihoods side, changes in farming practices and economic activities were designed to increase household income and, in the longer run, the interventions were intended to reduce poverty.

Figure F.3. Program logic for WOLREC's grant activities



Many respondents commented that they and their families are better off financially since participating in the project and continue to engage in income-generating activities taught by WOLREC. The grant activities were also expected to lead to more equitable gender roles and decision making, which participants report taking place in the two intervention villages.

Summary

Overall, respondents agreed that project participants have widely adopted CA and SLM practices taught by WOLREC, with some spillovers to nonparticipants in other villages as well. Since the end of the project, participants continued planting trees along the river, in the community woodlots, and on their farms. Participants continued with the SLM practices that saw them produce higher yields, which allowed them to have enough food for longer and even sell some of their crops and earn income. On the SGEF side, respondents also agreed that project participants understood and continued to practice gender equality concepts taught by WOLREC. As of 2021, there were also spillovers to nonparticipants in the intervention and other communities. Respondents reported that women feel more confident after the trainings and are more involved in community activities and take on leadership roles in their communities. More women participate in income-generating activities. Men and women interviewees reported that, after the trainings conducted by WOLREC, husbands and wives sit down together to discuss the family budget, make decisions together, and work together at home and on their farms. This has led to better financial decisions for the whole family, less family conflicts, and less violence against women.

Appendix G.

MCC and stakeholder comments on draft report

MCC comments

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	Executive summary	Recommend moving section B (Evaluation type, questions, methodology) to the end of the executive summary.	Section B has been moved to the end of the executive summary.
MCC M&E	1	"The final evaluation questions for the grants focus on… perceptions of the future sustainability of the ENRM and SGEF Activities." Should clarify the language here - the stated activities themselves are complete, as of the close of the compact. This is referring to the perceived sustainability of *results*, i.e. the adoption of *practices promoted by* the ENRM and SGEF Activities, etc.	Thank you. Changed this to "future sustainability of the practices promoted by the ENRM and SGEF Activities."
MCC M&E	3	"Details on activity implementation and a full discussion of how and why targets were achieved are provided in our interim report." Might it be more accurate to say "how and whether targets were achieved" or possibly "how and why targets were achieved or not achieved..." ?	Thank you. Change has been made.
MCC ESP	3	FISD's role: As I mentioned on a call, there is some concern about the long-term sustainability given the dependence of the irrigation scheme on FISD's support. Note that the FISD management was arrested for stealing money from a Govt of Malawi program. The future of FISD is in question.	Thank you. This has been added.
MCC M&E	7	Consider double-checking against the final # as reported in the MCC Star Report: $257.4 million. https://www.mcc.gov/resources/story/section-mwi-star-report-country-context	Thank you. Changes have been made to reflect the amounts actually disbursed for all components of the compact.
MCC DPE/EE-ME	7	disbursed?	We changed all amounts to the amounts actually disbursed.
MCC M&E	Page 8 Program Logic Section	It would be helpful to put this in the context of the overall project objective from the compact. In your logic diagrams, only the ENRM activities lead to the reduced sediment. Is that consistent with the project objective?	We agree that an arrow was missing indicating the contribution of reduced gender inequities to reduced sediment runoff. We have made the change. This is now consistent with the overall project objective. We have added a reference to the overall project logic model found in Volume 2.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	8	"Grants implemented various activities (inputs), which were expected to … (1)…(2)… (3) increase awareness around women's economic and social rights within their communities (outputs)." Just a minor clarifying note -- in MCC's parlance we do not typically refer to "inputs" -- the activities and interventions directly produce *outputs* (i.e. goods, services, training, etc.) that then lead to outcomes. The 'outputs' listed in 1, 2, and 3 of the sentence above are more accurately characterized as short-term outcomes. The downstream outcomes listed in the sentence that follows are viewed as long-term outcomes.	Thank you for the clarifications. We have changed all the Program logic figures, replacing column headings: "Inputs" with "Interventions," Outputs-Outcomes" with "Short-term outcomes," "Outcomes" with "Long-term outcomes," and "Longer-run goals" with "Longer-run outcomes and goals." We have also updated the use of these terms throughout the text.
MCC DPE/EE-ME	11	This sounds like an outcome and not an output	Thank you. We have updated the language in the text.
MCC M&E	Page 17 - Effectiveness of women's empowerment programs	Should the title allude to the objective of the programs being not just women's empowerment, but women's empowerment that leads to better land use practices?	Thank you. We have updated the language in the text.
MCC M&E	Page 17	"Given these factors, interventions that address the immediate and underlying drivers of inequities between men and women could positively impact SLM" Do you mean that the program logic posited this?	Thank you. We have updated the language in the text.
MCC M&E	Page 18 - VSL section	Is there evidence that VSLs support SLM or CA?	Thank you for the question. Yes, we have added an example of VSLs supporting SLM adoption through increased capital for inputs and social influence from other members.
MCC M&E	Page 20 Evaluation Type	Can you be more explicit about the identification strategy? I think we would call this an ex post since the last report was more of an interim. IS that correct?	Yes, this was the final evaluation, conducted about 3 years after the end of the compact, so we have adding references to these as "ex post" performance evaluations in serval places in the report to reflect the timing of the evaluations.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	Page 21 Evaluation Questions Table	Can you flag where in the questions were we evaluate the project objective?	The project objective was to improve electricity reliability and increased electricity production for the Malawian people and businesses, which was designed to lead to reduced poverty through sustainable and equitable economic growth (compact goal). We look at the outcome that would lead to the project objective - efficiency of hydropower generation in Volume 2. Otherwise the EDR focuses more on providing evidence about whether the program logic held up for outcomes leading to the efficiency of hydropower generation outcome.
MCC M&E	Page 29 FISD Findings	What is the main takeaway here? The list of key findings doesn't give me a good picture of the overall success and/or lesson of the program.	We have added an overall takeaway to the list of key findings. It is also stated in the first paragraph beneath the list.
MCC M&E	Page 32	"An implication of the power imbalance between the WUA and landowners has been that landowners have increased the price of cultivation beyond the reach of poorer farmers. " Is it a correct interpretation to say that the land is worth more because it has a valuable asset (irrigation), so the rent has a higher market price? If so, that does not seem unreasonable. It still sounds like those that have access are willing to pay the higher price and are better off. It could be helpful to dig a little deeper into the population that is using the irrigation and how they are different (or not) from the intended beneficiaries.	Our understanding is that the irrigated land was meant to benefit local farmers. However, the land has become so valuable that people from nearby cities - who can pay more than local farmers can - are renting the irrigated land to grow cash crops. The WUA has no ability to control prices so that more of the intended beneficiaries can rent (and thus benefit from) the new resource. It is correct that some local farmers are paying the higher rents, but many are not able to, so many of the benefits are accrued by the land owners and wealthier city dwellers instead of the original "intended beneficiaries."

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC ESP	32	The tensions with landowners and farmers is not shocking. FISD did not have the agreements in place with the landowners before setting up this system. The setup of the WUA was an after-thought. Wrongly, the FISD team got agreement from the village leadership to setup the solar-powered irrigation, but did not confirm if the land was already owned by private owners before building. After the fact, they tried to setup a WUA. It is not surprising that the land owners have more power and have raised rates. Plus FISD does not have expertise in WUAs. They initially wanted the WUA to do everything from seeds to water to land leasing to marketing. For a weak, poorly supported WUA, this would have been unworkable. It appears this weakness is still plaguing the operation. Would the upfront work to establish the WUA and work through the institutional arrangements have helped with the operation and sustainability. It may not save MCC's project, but it may help other organizations think about sequencing this type of the work in the future.	Thank you. We has added some text to make this situation clearer and to highlight your suggestion for organizations that take on similar efforts.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	33	Great summary of FISD results. Was there any indication that the position of the pump-house (below water level) had any relation to the frequent breakdown of pumps - e.g. due to recurring / sporadic flooding, etc.?	Thank you. We had only one respondent associate the problems with the pumps with flooding. He noted that "due to floods which occurred in 2019 water entered our pump house and all the pump motors got burned. So we asked FISD. They got them fixed, but from that time till today they are not working properly. This is what I am saying that 2 pumps stopped working. Only one remained, which if it also dies we will have big problems." The only other person to discuss the flooding worked at FISD and stated that the floods in 2019 did not go to the level where water could get inside the pump house, and that the issue of the pump placement was taken care of in the design stage. It sounds like one flood was potentially problematic, but we do not have data regarding whether recurring or sporadic flooding has been causing the problems with the pumps.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	Page 36 Summary of Key Findings	Can you link the findings to the project objective? For SGEF, in particular, is it possible to link the findings to the objective?	The project objective as far as the grants were concerned was to reduce siltation and weed infestation, which was designed to lead to increased efficiency of hydropower generation, improved electricity reliability and genertion, and reduced poverty through sustainable and equitable economic growth (compact goal). In the program logic (Figure V.1.) we show how the SGEF interventions were designed to feed into this objective. You can see that the links are direct and indirect to the objective of reduced siltation and weed infestation. Our report provides evidence about whether the program logic held up for outcomes directly and indirectly leading to the project objetive. We discuss how the program logic held up in Section V.G. “Findings on how the logic model for the ENRM and SGEF grants held up.” In addition, we add mention of this assessment in the section directly after the Summary of Key Findings.
MCC M&E	38	Table V.2 is a helpful display of various practices and levels of adoption - that said, some of the practices listed aren't readily understood in terms of their meaning, such as “planting one seed per station,” “Swales/watersheds,” “Early maturing seeds,” “Gully reclamation,” and “Check dams.” I appreciate that this section is concise, but is there a way to clarify the meaning of these? This wouldn't necessarily below in the main text, although it would make for a lengthy footnote, so open to a creative way to inform the reader -- perhaps more descriptive wording within the available space of the table.	We have tried to clarify the meaning of the more obscure CA and SLM practices within the table itself.
MCC M&E	40	Workers?	Yes, thank you for catching the error. It has been corrected.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	45	Table V.4: what is the 'Goat pass-on program'? Same comment as on Table V.2 applies, if this can be concisely described.	We have added text to clarify that this is a program where community members receive goats from the grantee and then pass on kids born to their goats to others in the community to continue the program
MCC ESP	46	REFLECT: is there anything that could be done to sustain this if the main reason for its lack of continuation is the grant support to sustaining the facilitators? Did these groups not serve other support roles for local women that was valued even outside of the literacy training? Repurposed?	We only heard about government-funded teachers taking over the role of teaching literacy. However, the REFLECT methodology and the training facilitators received seem to be missing necessary elements for the groups to be useful in the way there were during the grants. These groups seem to be unlike VSL groups, which community members were able to use in different ways, perhaps because learning how to lead them is more obvious.
MCC M&E	Page 52 Unintended Consquences	Can you eloborate on the fact that there were none? It would be helpful to know what you mean by this.	We found that there were very few unintended consequences that were detailed during the final round of data collection. Certainly some things did not go as planned, such as a forest fire destorying bees, goats dying, saplings getting eaten by goats, etc., but we did not identify any systematic unintended consequences that were striking themes.
MCC M&E	52	Figure V.2: Having a box labeled 'Outputs-Outcomes' is confusing, as we usually make a clear distinction between the two, and those listed in the results directly below tend to better reflect short-term outcomes; outputs would be the trainings, REFLECT Cirlces, VSL support/establishment, or other materials/services directly provided under the grant activities. Also, what about 'unsustainable farming practices' and/or sedimentation / aquatic weed infestation as among the problems addressed by the grants?	We assume this refers to Figure V.1. Program logic for ENRM and SGEF grants. We agree and have changed the column headings to reflect these comments. As far as the Problem category, we tried to pick some of the main problems, but were not all inclusive.
MCC M&E	52	It seems like the block of text beginning with “Overall, we found that the projects’ interventions followed this flow… etc.” could fit under the paragraph under the heading that follows.	We agree and have moved this.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	52	Figure V.1	We have corrected this typo.
MCC M&E	52	It seems like these two sentences could fit under the heading / paragraph below	We agree and have moved them.
MCC M&E	55	Table VI.1: "Survival rates of trees are lower than numbers planted…" This is inherently always going to be true - but can you clarify whether the survival rate itself is considered lower than would be expected?	Thank you for flagging this point. We have removed it. It was meant as a comment highlighting the idea that just planting trees is not enough, but we do not have any data to suggest the survival rates should be considered lower than what would be expected nor do we have data on whether trees were planted in a forest-like configuration.
MCC ESP	58	Lack of innovation: The comment on the grant faciltiy not fostering innovation is interesting. The original idea was to pilot a range of grants and methodologies to evaluate a range of approaches (both techniques as well as working with small groups intensely or large groups sporadically). Unfortunately, as the grant facility went on, there was more similarity interventions. Some of this was from cross-learning; some was intentional like all the groups adopting similar gender interventions. It is interesting that this now a finding as it does reflect the departure from the original intent. I think the one thing that we heard from our MCA colleagues is that a lot of these NGOs have simply done many of the same activities. There is very little innovation. Related: the hope was the Trust could provide sustained funding that would allow it to tackle long-term issues by working with the same farmers - move from more production practices to better markets to incentivize change. This takes a longer vision, which many NGOs working from donor to donors cannot sustain. No real action here, but it goes to the intention of the Trust, another limitation of the Trust due to the fragility of its funding and institutational capacity.	Thank you for your insights.
MCC M&E	60	…?	Thank you for flagging this. It looks like a few words were errantly changed during editing. This has been corrected.

Reviewer Role (e.g. DCO, GSI, EA)/ Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Responses
MCC M&E	63	Table VII.1: Evaluation Q2 -- Suggest adding a point in relation to the question about appropriately applying practices.	We have added the following point: Most project participants have had the capacity, resources, and motivation to apply these practices appropriately since the end of the grants.
MCC DPE/EE-ME	B.2	Why is this different than above?	Thank you for catching this typo. It has been corrected.

Stakeholder comments

Institution	Page Number (please reference the number at the bottom of the page)	Comment	Evaluator Response
Malawi Millennium Development Trust (MMD)	General	Just to say that in respect of both volumes, MMD has nothing of value to add to these reports. We think a lot of work went into their production. Please excuse the tardiness of our response. We are currently inundated with the second compact development work.	Thank you for reviewing and sharing your comments.
Malawi Millennium Development Trust / Former MCA-Malawi	General	Apologies for responding late, as we were on another tight deadline to have the Compact II Aide Memoire finalized and signed. This is an interesting report, particularly the issues of sustainability for the FISD irrigation scheme and the power plays between landowners and renters. I wondered if the WUA keeps records on the exact number of hectares they are cultivating. It is also interesting to note that FISD never really thought of having a sustainable maintenance plan from the beginning and should have thought of the maintenance contributions earlier than they did. How committed are they to ensuring that they continue to maintain the system and avoid frequency breakdowns? And it would also be interesting to know whether the frequent breakdowns are attributed to improper use by the beneficiaries. I am also impressed that many communities continue to sustain the interventions, pointing out that it is always important to think of what is in it for them to keep the interventions running. Excellent report.	Thank you so much for your comments. We do not have data on whether the WUA keeps records on the exact number of hectares being cultivated, but agree that would be interesting to have. We also agree that a sustainable maintenance plan should have been put into place much earlier. For the community being at the mercy of FISD's commitment and FISD's ability to service the pumps puts the scheme in a tenuous situation, largely out of their control. We do not have any data indicating whether the frequent breakdowns are due to improper use.
TSP	General	Thank you for the email. I have go through the document. it is well written the conclusions are a true reflection of what happened in the project Much appreciated. Thank you so much for the good work	Thank you for reviewing and sharing your comments.
CCJP	General	Thank you for the opportunity to input into the Evaluation report. After going through CCJP case studies, I am contented to bring any dissenting views as it reflects the true picture on the ground.	Thank you for reviewing and sharing your comments.

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