

Malawi - Environmental and Natural Resource Management

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Overview

Identification

COUNTRY

Malawi

EVALUATION TITLE

Environmental and Natural Resource Management

EVALUATION TYPE

Independent Evaluation

ID NUMBER

DDI-MCC-MWI-IE-ENERGY-2020-v01

Version

VERSION DESCRIPTION

Not applicable to this evaluation; no quantitative data to be shared

Overview

ABSTRACT

The WSM activity impact evaluation include an interrupted time series (ITS) analysis to estimate impacts of the activity on the operations and productivity of the hydropower plants. We also conduct a qualitative implementation analysis.

The performance evaluations of the ENRM and SGEF grant facility and the Environmental Trust will examine activity implementation, achievement of results, and longer term sustainability.

The performance evaluation of the ENRM and SGEF grants include in-depth qualitative case studies with five grantees to examine activity implementation, changes in sustainable land management practices, changes in gender roles and household decision-making, and sustainability of results.

The mixed-methods evaluation of the ENRM Project determines how the overall project and individual activities help to improve the efficiency of hydropower generation and reduce costly generation disruptions. We conducted a remote sensing analysis to examine land use changes over time in the Shire River Basin. We also modeled how changes in land use management affect sedimentation rates in the Shire using the Soil and Water Assessment Tool.

EVALUATION METHODOLOGY

Interrupted Time Series or pre-post, descriptive and qualitative analysis (performance evaluation)

UNITS OF ANALYSIS

Community, administrative units, other

TOPICS

Topic	Vocabulary	URI
Agriculture and Irrigation	MCC Sector	
Gender	MCC Sector	

KEYWORDS

ENRM, WSM, SGEF, Malawi, Malawi Compact, Environmental Trust, Land Management, Shire River, Hydroelectric, Hydropower, River Sedimentation, Power, Environmental and Natural Resource Management, Erosion, Conservation Agriculture, Tree Planting, Forest Management

Coverage

GEOGRAPHIC COVERAGE

The WSM activity took place at the Nkula and Kapichira power stations and at the Liwonde barrage along the Shire River in Malawi. The ENRM and SGEF activities took place in the Shire River Basin sub catchment areas in 6 districts in Malawi: Neno, Mangochi, Machinga, Blantyre, Balaka, and Ntcheu.

UNIVERSE

ENRM and SGEF grant staff and grant beneficiaries; EGENCO staff at Nkula, Kapachiri, and the Liwonde barrage; Environmental Trust staff

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Mathematica Policy Research	

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Mathematica Policy Research	Mathematica		Independent Evaluator

DATE OF METADATA PRODUCTION

2020-04-03

DDI DOCUMENT VERSION

Version 01

DDI DOCUMENT ID

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MCC Compact and Program

COMPACT OR THRESHOLD

Malawi Compact

PROGRAM

The Environmental and Natural Resources Management (ENRM) Project worked to reduce costly disruptions and increase the efficiency of hydropower generation by mitigating aquatic weed growth and sedimentation in the Shire River Basin. It was comprised of three main activities: (1) The Weed and Sediment Management (WSM) activity involved procuring and using mechanical equipment to reduce sedimentation and aquatic weed infestation at the primary hydro-generation sites along the Shire; (2) the ENRM activity provided grants to projects designed to reduce soil erosion by improving land management activities in high-priority catchment areas; and (3) the Social and Gender Enhancement Fund (SGEF) activity complemented the ENRM activity by targeting women and vulnerable groups to improve their economic and social rights and their decision-making power within their households and communities; SGEF also worked with men who have limited control of resources in a matrilineal society. In addition, the ENRM activity, a part of the ENRM Project, sought to establish an environmental trust to serve as a sustainable organization to continue funding ENRM and SGEF activities after the compact close.

MCC SECTOR

Energy (Energy)

PROGRAM LOGIC

The ENRM Project addresses the problem of sedimentation and weed infestation in the Shire River in three ways: (1)

removing weed and sediments near hydroelectric power plants (WSM activity); (2) combating the root causes of soil runoff in the Shire by improving sustainable land management (ENRM and SGEF activities); and (3) planning for long-term investments in behavior change by establishing an environmental trust. These three interventions encompass the project's theory of change, whereby: if weeds are removed and sedimentation is reduced, then hydropower generators will clog up less frequently and have sufficient levels of water to generate power, resulting in more efficient operation with fewer power outages; if community interventions are implemented, then households and communities will be better equipped to improve land use and watershed management practices, thus decreasing siltation and erosion in the project area; if an environmental trust is set up, then further initiatives and organizations can be funded, thereby leading to the sustained improvement of better land use practices. Outcomes from these activities support the Compact's goal of reducing poverty through sustainable and equitable economic growth by increasing the competitiveness of Malawi's agricultural, commercial and industrial sectors.

PROGRAM PARTICIPANTS

The WSM activity worked with EGENCO staff, including power plant operators who will be maintaining and using the new equipment. The ENRM and SGEF activities worked with interested residents of the targeted sub-catchment areas of the Shire River Basin, particularly farmers.

Sampling

Study Population

ENRM and SGEF grant staff and grant beneficiaries; EGENCO staff at Nkula, Kapachiri, and the Liwonde barrage; Environmental Trust staff

Sampling Procedure

We selected 11 grantee staff for key informant interviews. We identified respondents by soliciting information from each grant organization and reviewing the grant contact list provided by MCA-Malawi, then selecting respondents who knew the most about how activities were implemented.

We selected 22 community leaders in intervention areas for key informant interviews. We selected one or two GVH leaders (per case) based on their participation in the grant activities and influence in the community. We selected 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 were involved with the grant activities

We organized 25 focus groups, including 6-12 people per group, included beneficiaries who actively participated in the ENRM and SGEF activities such as REFLECT Circles, VSLs, leadership trainings, tree planting, ridge construction, and farmer trainings. Some focus groups were women-only, some men-only, and some included both men and women.

We selected 30 female SGEF participants and spouses for key informant interviews. Three female participants active in SGEF activities (per case), were chosen to cover a variety of perspectives including those of community leaders, widows, female heads of households, young women, and elderly women. Three men (per case) were chosen who participated in grant activities and are married to active female participants; the men had a mix of characteristics such as age, length of marriage, and involvement in grant activities.

We selected 15 district government officials for key informant interviews. We selected three staff members (per case) from government agencies that supported grant activities, including the community district offices of development, forestry, and agriculture. We selected staff to interview based on their knowledge of the grant activities and the significance of their role in activities.

We directly observed 5 community meetings of active groups supported by the intervention, selected based on discussions with community leaders and including area or village development committees, village natural resource management committees, VSLs, or REFLECT circles.

We conducted 1 joint interview with 2 MCA-Malawi M&E staff.

We conducted 4 key informant interviews with MCA-Malawi sector staff.

We conducted 3 key informant interviews, with one joint interview, with MCC DC staff who oversaw the implementation of the Malawi compact.

We did a document review of grant facility quarterly and final reports and internal MCA-Malawi grant evaluations.

We used remote sensing imagery to estimate land cover change in Malawi's Shire River Basin south of the Lake Malawi outlet, and also used a Soil and Water Assessment Tool (SWAT) to assess how scaling up ENRM and SGEF interventions might affect soil erosion, sedimentation, and hydropower generation relying on remote sensing data on land cover, elevation, and daily precipitation data.

Deviations from Sample Design

We encountered significant challenges observing community meetings of active groups supported by the intervention, such as area or village development committees, village natural resource management committees, VSLs, or REFLECT circles. We planned to observe three meetings per case study to understand the grantees' prospects for sustaining their grant outcomes. However, meetings were either rarely held, scheduled ad hoc, or canceled, so we ultimately decided to observe just one meeting per case study. Some groups seemed to stop meeting as grant activities were winding down. We ultimately could not observe a community meeting for CCJP, but we observed two TSP meetings and one meeting each for the other three

case study grants.

Questionnaires

No content available

Data Collection

Data Collection Dates

Start	End	Cycle
2018-05-01	2018-11-30	Interim

Data Collectors

Name	Abbreviation	Affiliation
Kadale Consultants Ltd.		

Supervision

A team of four Data Collectors (2 male, 2 female) was chosen, as well as five original Transcribers (2 males, 3 females). The Supervisor for the data collection team was selected from among Kadale's permanent staff. A Supervisor was also selected for the transcription team based on the skill and experience demonstrated through the training and pilot.

Data Processing

Other Processing

5 transcribers were originally chosen, along with a supervisor for the transcription team. Once interviews were transcribed, the data collection supervisor, transcription supervisor, and a data collector coded transcriptions in NVivo. The Data Coding Supervisor provided weekly quality control checks.

Data Appraisal

No content available