

# GLOBAL PARTNERSHIP ON NUTRIENT MANAGEMENT

## BMP Case Study

### Overview

**Name:** Payment for Ecosystems Service: Finding Long-term Market-based Solutions for Malawi's Hydro-Electric Challenges

**Location/Terrain:** Upper and Middle Shire Basin, Malawi

**Crop(s):** Variety of unsustainable land use practices to produce predominantly maize, with limited cassava, pigeon pea and vegetable crops.

**Nutrient(s):** Sediment buildup from soil erosion and runoff

**Rationale:** Sediment buildup increases nutrients loads that speed the growth of invasive weeds and increases the operational risks of Malawi's vital Nkula hydroelectric plant.

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### Issue(s) of Concern/Challenges:

The Nkula plant is one of three hydroelectric plants along the Upper and Middle Shire River, which collectively provide Malawi with 98 percent of its electrical power. Malawi's high population density and unsustainable land use practices, such as deforestation and slash and burn agriculture, increases vulnerability to soil erosion. Runoff sediment travels downstream to the Nkula plant, where it builds sediment islands and limits the plant's water intake and damages the plant's equipment. In order to support economic development and protect the hydroelectric land management practices must be improved.

### Practice Description:

Millennium Challenge Corporation is working with the Government of Malawi, the World Bank and others to launch an innovative payment for ecosystem services (PES) investment trust fund to take a holistic and long-term approach to managing Malawi's water-energy-food nexus. MCC will also be supporting non-governmental organizations (NGOs) and community-based organizations (CBOs) through small grants to work directly with the local community to promote better land use practices.

### Practice Objectives:

Establish an Environmental Trust supported by funding from downstream public and private entities through a PES mechanism to provide sustained funding through grants to upstream communities living in the watershed. MCC would like support the Trust through an endowment that will assist long-term administrative and operational sustainability.

Through these grants to NGOS and CBOS, MCC will implement conservation practices that reduce land degradation and soil erosion to increase agricultural production and decrease sediment build up in the Shire River. Additionally, MCC aims to establish a long-term market based solution to soil erosion, sediment build up and nutrient overloads that impair Malawi's hydropower generation.

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## Outcomes:

Given the importance of the Shire Basin to the operation of water utilities and private companies, MCC is partnering with Malawian stakeholders that have a vested interest in the health of the water system, such as Ilovo Sugar Company and Carlsberg breweries, to establish a Trust that will continue the work of the small grant programs with local communities long after the end of MCC's investment.

## Significance:

Through contributions for PES the Trust could continue to support ongoing ecosystem rehabilitation through grants to NGOs and CBOs that would in turn help farmers living in the Shire River Basin adapt more sustainable and productive land use practices. In this partnership, the potential trustees are looking at innovative ways of building the costs of the PES into their operations. The intention is to establish the Trust as a sustainable financing mechanism that builds a long-lasting relationship between downstream stakeholders and upstream communities. Through the Trust, MCC is hoping to align private and public incentives and improved water resource management with greater food, energy and water security in poor communities.



## Data/Graphs:

