

Averting Degradation in the Abbay Basin: Current Trends, Potential Interventions, and Investment Needs

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Abstract

Land and soil degradation are endemic in Ethiopia and Abbay/GERD due to increased population pressure, improper land use planning and over dependency of the societies livelihood on small scale agriculture. Ethiopia is building Grand Ethiopian Renaissance dam (GERD) at the outlet to Abbay basin close to the border with Sudan. The soil erosion and ongoing land and water degradation poses a challenge to the performance and the life of the dam unless properly abated. This study aims to evaluate the scale of degradation in the GERD basin and its 16 sub basins using three metrics: Productivity, Soil organic carbon, and Land Cover. The proportion of forested sub basins area for the 2001 to 2019 is also produced. The results provided insight on extent of degradation using loss of biomass as proxy. A recommendation for averting degradation is suggested based on the success story from a soil and water conservation intervention in five micro-watersheds in the Tana and Beles sub basins and other existing experiences. Observations from the experimental watersheds showed a direct relationship between runoff ratio and areal density of SWC treatments in the watersheds. It is indicated that reductions in runoff ratio and sediment concentration occurred in four of the watersheds, suggesting that SWC can be part of the comprehensive solutions to the upscale the solutions to the large-scale problem of watershed degradation in the Basin. Additional measures such as payment for ecosystem restorations, productive watershed management and effective policy and institutional mechanism are also outlined to help realizing significant reduction of sediment load at the GERD. The study also indicated the potential investment requirement for effective restoration and management of Abbay basin degradation.

Keywords: Land degradation, GERD, Abbay River, SWC

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