Policy Brief:

Leveraging Payments for Ecosystem Services in GERD Talks: Policy Options for the Abay (Blue Nile) Basin

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1. Executive Summary

The Payments for Ecosystem Services (PES) concept may be used as a supportive leverage in water diplomacy on the GERD in the Abay/Blue Nile River Basin, specifically on possible PES deals that may be struck with downstream riparian states Egypt and Sudan. An exploratory and descriptive research design was employed, combining both qualitative and quantitative approaches. The research used both interview and documentary evidence from local, regional, and federal offices, including those in Sekela woreda and the Abbay Tana basin office, published and unpublished literature, spatial analysis in ArcGIS, and thematic content analysis. The study revealed that ecosystem and soil conservation activities in the Abay/Blue Nile River Basin are in their infancy but expanding. It was further revealed that the GERD and its basin management offer several ecosystem services that are beneficial to downstream states, including Egypt and Sudan, and that these ecosystem services are valuable enough to be compensated for. Therefore, it is recommended that PES be integrated into GERD diplomacy, although it is acknowledged that there are challenges that may be addressed through further research, including valuation, baseline data, and capacity.

2. Introduction

The Nile River basin is primarily sustained by the Abay River (Blue Nile) originating in the Ethiopian Highlands and serves 487 million people in 11 countries. However, the Nile River basin is faced with issues of uneven development and water usage among the riparians. For instance, the upstream countries like Ethiopia contribute the majority of the water but consume less of it, while the downstream countries like Egypt and Sudan rely heavily on the Nile River allocations. This has created hydro-political issues in the Nile River basin over the years, especially

with the GERD. Therefore, the PES strategy can be an additional solution in the Nile River basin that can be beneficial in the following ways: PES can provide a way of valuing the externalities of upstream Nile River basin countries that can benefit the riparians downstream. This can be done through the compensation of the upstream Nile River basin riparians for the various benefits they provide to the riparians downstream. This study seeks to investigate the possibility of using the PES strategy in the GERD diplomacy in the Nile River basin.

3. Approach and Results

The Abbay River basin has an area of 199,812 km2 and is located in the Amhara, Oromia, and Benishangul Gumuz national areas. It contributes two-thirds of the region's river flow as it makes its way down through the Ethiopian Highlands and into Khartoum, where it meets the White Nile River. This is a trans-boundary basin and is of major importance in the development of Ethiopia and the region. A team of researchers conducted the study by collecting information through reports and maps and through interviews with various government agencies and experts in the field of GERD and PES in the region. They interviewed the basin authorities and the GERD negotiation team and conducted field observations and existing maps of the region. The researchers then drew simple maps and tables and presented the information they had gathered. They observed the following: the region has the opportunity to reward the upstream areas of the region for the GERD diplomacy efforts. The study was conducted the research while following the ethics of the field.

4. Results

4.1. Soil erosion and conservation progress

In all of the Jemma sub-watersheds, there has been a significant change in soil and water conservation activities from 2015 to 2022, resulting in a notable decline in high erosion areas, specifically those above 7 t/ha/yr. Sub-watersheds 2 and 4 exhibited more notable improvements, whereas sub-watersheds 1 and 3 exhibited more moderate improvements. This is attributed to increasing tree cover, better land management, and national campaigns. This is beneficial in that healthy soils imply better infiltration, crop yield, and resistance to drought. Spatial variations indicate where more support is required for further consolidation of improvements.

4.2. Downstream benefits from reduced sediment and flood risk

The lower erosion in upstream areas is already reducing the sediment carried in the downstream areas, thus protecting reservoirs and irrigation channels from siltation. The reduction in sediment

means lower dredging costs, longer life for reservoirs, and greater efficiency in hydropower and irrigation. The improved vegetation and runoff in upstream areas also reduce flood peaks, thus providing greater protection for downstream communities. These regulatory effects transcend national borders, thus providing an economic rationale for cooperation in upstream conservation and in apportioning costs and benefits between upstream and downstream users.

4.3. Local livelihoods and ecosystem services

The conservation and reforestation activities have helped in the development of the local economy. Although some changes in the local economy may be expected due to the conversion of land and the GERD dam reservoir, new prospects are also arising in the region, including the development of new areas of irrigated farming, fishing, tourism, and service sectors. The region continues to offer vital services in the form of food provision, water storage and filtering, carbon sequestration, and cultural and recreational uses. Activities such as the Green Legacy have helped in the development of new employment prospects, further supporting the local economy.

4.4. GERD's environmental trade-offs and shared advantages

The GERD impacts the landscape of that region because some forests and terrestrial resources will be submerged in the water. On the other hand, there are advantages to this dam. These advantages include better control of water flow in rivers, fewer instances of flooding in the regions through which the Nile passes, and fewer sediments being carried along with the water. Additionally, there is the potential for generating hydroelectricity and irrigating agricultural lands. These advantages are not limited to Ethiopia; Sudan and Egypt also benefit. This is where the common ground lies.

4.5. Payments for Ecosystem Services (PES), benefit-sharing, and Legal and diplomatic considerations

The PES mechanism and benefit-sharing could provide a framework for compensation from downstream beneficiaries to upstream conservation activities, which provide regional benefits. Rationale: upstream activities reduce flooding, sedimentation, and variability, all benefits to downstream users. Developing a PES mechanism needs national policy support, valuation of ecosystem services, good governance, and local community protection. If implemented, the PES mechanism would provide financial incentives for ongoing watershed conservation, reward local livelihoods, and offer a workable link between development needs and regional water diplomacy.

However, political mistrust and historic claims can make the process more complicated. Current legal frameworks of equitable use and no significant harm support cooperation but do not provide incentives for upstream positive contributions. PES and beneficiary pays require new legal foundations and dialogue and confidence-building in the region. Immediate actions include joint valuation studies, small-scale agreements, and the use of neutral forums for technical cooperation. This can help shift the process away from zero-sum approaches and toward more mutually beneficial agreements based on the shared interest in basin services.

5. Conclusion

This study demonstrates that the increasing conservation activity in Ethiopia, as exemplified by the Green Legacy, has resulted in a positive impact on land cover and ecosystem services in the Blue Nile basin. The Grand Ethiopian Renaissance Dam (GERD) provides regional benefits that go beyond the hydroelectric benefits by regulating the river, reducing sedimentation, supporting irrigation and fish stocks, and improving livelihoods and recreational activities in the downstream countries. These are obvious mutual benefits for Sudan and Egypt and provide a sound foundation for a Payments for Ecosystem Services (PES) system.

Three rationales exist that complement the case for Ethiopia's PES: compensation of upstream actors for land and water management that provides basin services, the recognition of the GERD's regulatory and livelihood benefits to downstream actors, and the location of the PES in the context of the rules of international water law on equitable use and the beneficiary-pays principle. Ethiopia, as a principal riparian state, also has the obligation to enhance basin-wide ecosystem management and coordination. Properly crafted PES or benefit-sharing approaches would equitably share the burden of conservation, enhance the incentives for upstream management, and provide constructive pressure in GERD negotiations to ensure cooperative and mutually beneficial basin management in the Nile River basin.

6. Implications and Recommendations

6.1. Implications

This is because the study has indicated that the process of ecosystem restoration in the Blue Nile basin is likely to gradually improve the benefits of soil stability, flow regulation, carbon sequestration, and livelihoods for Ethiopia and other riparians in the basin. It is also likely that the process of sediment reduction and flood risk management in the basin would be improved if the current pace of conservation is sustained and increased in the basin. Moreover, the presence of

the GERD is likely to enhance the ecological and economic benefits of the upstream and downstream riparians in the basin because the dam is likely to magnify the ecological and economic benefits of the basin. Therefore, the GERD is likely to enhance the value and legitimacy of the upstream riparians in the basin.

6.2. Policy Recommendations

Firstly, Ethiopia should undertake a phased interdisciplinary valuation program with a duration of 12-24 months with the aim of quantifying the Blue Nile's ecosystem service flows and their economic value. This study would be conducted in such a way that it would be informed by the national Green Development strategy and the international norms governing water laws. This would then be followed by the development of a valuation report and the production of maps and policy briefs with the aim of assisting the negotiators in the process. Secondly, Ethiopia should undertake 3-5 PES pilot projects in the community level with a duration of 24-36 months in the watersheds where there is evidence of gains in terms of afforestation, soil conservation, and sustainable grazing. Thirdly, it is necessary to incorporate PES and benefit sharing into negotiations over GERD. This can be done using results from validation studies and pilots to suggest benefit sharing provisions that are legally robust and equitable in their sharing of costs and benefits. Fourthly, it is necessary to enhance research, communication, and partnerships by funding studies that are reviewed and approved by experts, international communication, and technical cooperation to enhance credibility and access to funding for effective PES and basin management. These suggestions are feasible, evidence-informed, and immediately responsive to the recommendations of this study and can help to convert upstream ecological investments into cooperative and mutually beneficial Nile basin management.

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