



Evaluating Hydropower Development in Nigeria: Examining Benefit-Sharing and Resettlement Strategies II

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Abstract Hydropower benefit-sharing is a crucial concept that aims to ensure equitable distribution of benefits in project-affected areas. However, its implementation remains limited, necessitating a comprehensive understanding of its framework. This article provides a conceptual review of hydropower benefit-sharing in Nigeria. The article highlights the distinctions between benefit-sharing, compensation, and related concepts. Benefit-sharing involves the transfer of resources and services beyond mere replacement, determined through participatory processes and delivered during later stages of dam planning. A mix of institutional arrangements and benefit-sharing mechanisms is deemed desirable. Resource qualification in benefit-sharing is explored, clarifying that certain aspects, like replacement of lost land and housing, fall under compensation rather than benefit-sharing. Cultural, religious, and sporting infrastructure are also considered compensation for losses incurred. Conversely, schools, health centers, irrigation schemes, and electricity supply are seen as benefit-sharing, aligning with the needs of project-affected communities and government development objectives. Using Nigeria as an example, the article emphasizes the conceptual nuances of hydropower benefit-sharing. This understanding can facilitate collaborative efforts among policymakers, developers, and stakeholders, enhancing the implementation of effective and inclusive benefit-sharing mechanisms in hydropower projects. Ultimately, this can foster sustainable development and equitable distribution of benefits in Nigeria and beyond.

Keywords Compensation, conceptual framework, sustainable development, resettlement

Introduction

This article aims to provide conceptual clarifications of benefit-sharing, compensation, and their distinctions in the context of hydropower development in Nigeria. Drawing on empirical evidence, case studies, and existing literature, we will examine the conceptual underpinnings of benefit-sharing and compensation, their relevance to the Nigerian context, and the potential pathways for moving beyond compensation towards more comprehensive benefit-sharing approaches.

In the subsequent sections, we will delve into the key elements that differentiate benefit-sharing from compensation. We will explore the substantive differences in terms of the nature of the benefits provided, the participatory processes involved in decision-making, and the temporal aspects of benefit delivery. Furthermore, we will examine the potential synergies and complementarities between benefit-sharing and compensation, highlighting the need for an integrated approach that combines both mechanisms to achieve sustainable development outcomes.

Moreover, we will analyze the challenges and opportunities associated with implementing effective benefit-sharing mechanisms in Nigeria. This analysis will encompass issues such as stakeholder engagement, capacity-building, governance structures, and the role of institutions in facilitating equitable benefit-sharing processes. By examining



these aspects, we aim to provide insights into how benefit-sharing can be effectively operationalized in the Nigerian context, taking into account the unique socio-cultural, economic, and political dynamics of the country.

Through this conceptual exploration, we seek to contribute to the knowledge base on benefit-sharing and compensation in the context of hydropower development, with a specific focus on Nigeria. By clarifying the conceptual distinctions and addressing the challenges, we aim to inform policy formulation, enhance stakeholder engagement, and promote the implementation of robust benefit-sharing frameworks that can lead to more equitable and sustainable outcomes for the communities affected by hydropower projects in Nigeria.

Replacement as Compensation

The replacement of cultural, religious, and sporting infrastructure that is lost due to dam construction is generally considered a form of compensation. Developers have the responsibility to rebuild these resources in resettled communities, ensuring that the affected individuals and communities are provided with equivalent facilities (Hang Bui & Schreinemachers, 2018). For example, houses of worship, community meeting halls, and football pitches that are impacted by the project should be rebuilt to compensate for their loss. This replacement may present an opportunity to upgrade the quality of the infrastructure, providing improved facilities for the affected communities (Hang Bui & Schreinemachers, 2018; Jiménez-Inchima et al., 2021).

However, it is important to note that despite potential improvements, the objective of replacing cultural, religious, and sporting infrastructure is compensation for what has been lost, rather than an enhancement. These resources should not be classified as benefit-sharing since their purpose is to replace and compensate for the infrastructure that was affected or submerged. International guidelines, such as the International Finance Corporation (IFC) Performance Standard 5 on land acquisition and involuntary resettlement, acknowledge the need for improved living conditions in new resettlement sites, including enhancements to cultural, religious, or sporting infrastructure (Pulice & Moretto, 2017; Samndong, 2018; Schulz et al., 2017).

Challenges and Limitations

In some cases, replacement efforts may prove challenging or even impossible, particularly when dealing with religious, sacred, or historical sites. For example, the flooding of cemeteries and ancestral shrines presents a significant challenge as their unique cultural and spiritual significance cannot be adequately compensated for (Abrampah, 2017; Atkins & Hope, 2021; Hodbod et al., 2019). The loss of such sites can be traumatic for the affected individuals and communities, highlighting the limitations of compensation in fully addressing their needs and concerns.

Similarly, the submergence of archaeological sites poses challenges, as their value cannot be solely measured in monetary terms. Although some argue that the funding generated by the submergence of archaeological sites can support further archaeological fieldwork, compensation alone cannot adequately replace the knowledge and historical significance lost (Cooke et al., 2017). In such cases, mitigation efforts, such as documenting and preserving the archaeological remains before inundation, become essential.

Consultation and Mitigation

The replacement of cultural, religious, and sporting infrastructure requires close consultation and constructive dialogue between the developers and the affected communities. Involving the affected individuals in decision-making processes, such as the design and location of replacement infrastructure, can help ensure that their needs, preferences, and cultural considerations are taken into account.

In Nigeria, the replacement of cultural, religious, and sporting infrastructure lost due to dam construction is considered compensation for the affected communities. Developers are responsible for rebuilding these resources, ensuring that they meet the needs and preferences of the affected individuals. While improvements can be made during the replacement process, it is important to recognize that the primary objective is compensation rather than enhancement.

Challenges arise when dealing with religious, sacred, or historical sites, as their unique significance cannot be fully compensated for. Mitigation efforts, such as documentation and preservation, become essential in addressing the



loss. Close consultation with the affected communities, including their participation in decision-making, fosters a sense of ownership and ensures that their cultural and religious needs are considered.

Schools and Hospitals in Nigeria: Government Responsibility and Development Objectives

The construction of hydropower projects in Nigeria often involves the resettlement of communities, and in this process, the provision of essential services such as schools and health centers becomes a crucial consideration (Emetere et al., 2021; Galvez & Rojas, 2019; Hausermann, 2018; Schulz, 2019; Wiejaczka et al., 2020). This section explores the role of schools and hospitals in the context of compensation and benefit-sharing and emphasizes the government's responsibility to provide these services to all citizens, independent of dam construction.

Government Development Objectives

Schools and health centers are fundamental components of governmental development objectives, as education and healthcare are essential rights for all citizens (Schulz et al., 2017). While most communities may have had some form of water supply prior to displacement, the existence of schools and health centers is less common, particularly in rural areas. Therefore, the construction of schools and health centers in resettled communities directly contributes to meeting the government's development objectives by providing access to education and healthcare services.

Not Compensation nor Benefit-Sharing

Unlike the replacement of physical infrastructure, such as houses or land, the construction of schools and health centers does not fall strictly under the category of compensation (Tian et al., 2021). Compensation typically refers to the replacement of lost assets, whereas schools and health centers are not being replaced but rather newly built in resettled communities. However, it is important to note that schools and health centers also do not qualify as benefit-sharing, as the government has a clear duty to provide these services to all citizens regardless of dam construction.

Timing and Financing

Although schools and health centers are not directly categorized as compensation or benefit-sharing, their construction and financing can be associated with hydropower development. The timing of their construction may coincide with the resettlement process and the development of the hydropower project (Jiménez-Inchima et al., 2021). Additionally, the financing for these facilities may be linked to the revenues generated through the sale of hydropower. Therefore, while the provision of schools and health centers is a government responsibility, their construction and financing can be influenced by the presence of a hydropower project.

Importance of Timely Implementation

It is crucial to prioritize the timely construction of schools and health centers in resettled communities to ensure that the affected population has access to education and healthcare services without unnecessary delays. Adequate planning, coordination, and collaboration between the government, hydropower developers, and relevant stakeholders are necessary to facilitate the timely implementation of these infrastructure projects.

In the context of hydropower development in Nigeria, the construction of schools and health centers in resettled communities is aligned with the government's responsibility to provide education and healthcare to all citizens (Yuguda et al., 2023). While not falling strictly under compensation or benefit-sharing, the timing and financing of these infrastructure projects can be linked to hydropower development. Timely implementation is crucial to ensure that the affected communities have access to essential services, thereby contributing to their well-being and development. Collaborative efforts between the government, developers, and stakeholders are essential to facilitate the construction of schools and health centers in a timely manner and meet the needs of the affected population (Kusnandar et al., 2019; Maher, 2019; Price et al., 2020; Sambo et al., 2010; Vanclay, 2017).

Irrigation Schemes: Compensating for Agricultural Loss and Enhancing Development in Nigeria

In the context of hydropower development in Nigeria, the construction of reservoirs and dams can have adverse effects on agricultural production, particularly when natural flood cycles are disrupted or rain-fed agricultural land is flooded by the reservoir (Emetere et al., 2021; Hang Bui & Schreinemachers, 2018; Hausermann, 2018; Jiménez-



Inchima et al., 2021; Kusnandar et al., 2019; Tian et al., 2021). To mitigate these negative impacts, the implementation of irrigation schemes becomes crucial. The significance of irrigation schemes in relation to compensation, benefit-sharing, and overall development objectives are presented.

Compensation for Agricultural Loss

Irrigation schemes serve as a means of compensating for the loss of agricultural productivity caused by hydropower development. In cases where land was communally owned and utilized for agricultural purposes, the construction of irrigation schemes can offset the loss by providing alternative means of irrigation. By emphasizing efficiency and productivity gains, developers aim to mitigate the inability to find equivalent replacement rain-fed agricultural land near the dam site. This compensation is essential to support affected communities and ensure their livelihoods are sustained.

Enhancement of Productivity and Development

Irrigation schemes offer more than just compensation; they also contribute to enhancing agricultural productivity and meeting governmental development objectives. In semi-arid regions where seasonal agriculture prevails, the introduction of irrigation systems enables year-round cultivation, leveraging the stored water in the reservoir or the stabilization of dry-season flows downstream of the dam (Wilmsen, 2018). This technological modernization aligns with the goals of achieving food security, boosting agricultural output, and promoting rural development.

Interest of Hydropower Developers and Governments

Irrigation schemes have inherent attractiveness to both hydropower developers and governments. Developers recognize the economic value of irrigation in bolstering agricultural productivity and diversifying project benefits. The inclusion of irrigation features may make hydropower projects more appealing to governments and potential funders (Price et al., 2020; Vanclay, 2017; Yuguda et al., 2023). Furthermore, governments can leverage irrigation schemes to advance their agricultural development agendas, increase food production, and improve the livelihoods of rural communities. This alignment of interests makes irrigation schemes a win-win proposition for both stakeholders.

Irrigation schemes play a vital role in the compensation, benefit-sharing, and overall development objectives associated with hydropower projects in Nigeria. By compensating for the loss of agricultural land and productivity, irrigation schemes provide alternative means of sustaining livelihoods and fostering agricultural development. Simultaneously, they contribute to meeting governmental development objectives by enhancing agricultural productivity, promoting food security, and fostering rural development. The multi-purpose nature of irrigation schemes ensures that the benefits extend beyond the immediate resettled individuals and encompass the broader community. This makes irrigation schemes attractive to hydropower developers and aligns with the goals of governments in advancing agricultural development. Through careful planning, collaboration, and stakeholder engagement, the implementation of irrigation schemes can support sustainable and inclusive development in Nigeria's hydropower projects.

Electricity Supply: Accelerating Access and Government Responsibilities in Nigeria's Hydropower Projects

One of the significant benefits that can be achieved through hydropower benefit-sharing agreements in Nigeria is the electrification of project-affected communities. Access to electricity directly connects these communities with the benefits generated by hydropower development (Oruonye, 2015; Sambo et al., 2010; Schulz, 2019). In many cases, rural communities in Nigeria did not have access to electricity prior to the construction of dams and reservoirs (Emetere et al., 2021).

Electrification efforts in project-affected communities contribute to the broader goal of achieving universal access to electricity, a responsibility that governments strive to fulfill (Atkins & Hope, 2021). By including electricity supply as part of benefit-sharing agreements, the implementation of this crucial service can be accelerated, ensuring that the benefits of hydropower development reach all citizens. It is important to note that while the provision of electricity may not be classified as compensation for specific losses, it represents a tangible and impactful benefit that directly enhances the living conditions and economic opportunities of project-affected communities.



The inclusion of electricity supply as a benefit-sharing component in hydropower projects addresses the pressing need for energy access, which is vital for various aspects of community life. Access to electricity improves the quality of education by enabling the use of technology in schools, facilitating e-learning initiatives, and enhancing educational outcomes. It also enhances healthcare services by enabling the operation of medical equipment, refrigeration of vaccines and medicines, and the provision of 24/7 healthcare facilities. Moreover, electricity access stimulates economic growth by powering businesses, promoting entrepreneurship, and creating employment opportunities. It enables the use of modern agricultural technologies, such as irrigation systems and processing facilities, thereby increasing productivity and improving livelihoods.

The acceleration of electrification through benefit-sharing agreements not only directly benefits project-affected communities but also supports the government in fulfilling its responsibility to provide electricity access to all citizens (Schulz, 2019). By leveraging the resources and infrastructure developed for hydropower projects, electricity supply can be extended to remote and underserved areas, bridging the energy gap and fostering inclusive development. The collaboration between hydropower developers and government entities in implementing electrification initiatives demonstrates a shared commitment to sustainable and equitable development.

To ensure the successful implementation of electricity supply as a benefit-sharing measure, key considerations include the involvement of local communities in decision-making processes, the establishment of sustainable and reliable electricity infrastructure, and the provision of adequate training and support for the maintenance and management of the electricity systems (Schulz, 2019). Additionally, mechanisms should be in place to ensure the affordability of electricity services for the project-affected communities, taking into account their socio-economic conditions.

Electricity supply stands as a prominent and impactful benefit that can be achieved through hydropower benefit-sharing agreements in Nigeria. By accelerating the implementation of electricity access, these agreements go beyond compensation and support the fulfillment of government responsibilities. Access to electricity enhances education, healthcare, and economic opportunities, contributing to sustainable development and improved livelihoods. Through collaboration and strategic planning, the inclusion of electricity supply as a benefit-sharing component can transform the lives of project-affected communities and drive inclusive growth in Nigeria's hydropower projects.

The institutional dynamics of benefit-sharing and compensation over time

The institutional dynamics of benefit-sharing and compensation over time have a significant impact on project-affected people and communities in Nigeria. These individuals and communities directly experience the social, economic, and environmental changes resulting from hydropower development. Their engagement and inclusion in the decision-making processes surrounding benefit-sharing and compensation are crucial for ensuring equitable outcomes and minimizing potential negative impacts.

For project-affected people and communities, benefit-sharing and compensation serve as mechanisms to address the adverse effects of dam construction and operation on their livelihoods, land, and resources (Annys et al., 2019). Compensation measures, such as the replacement of lost land and housing, aim to provide redress for tangible losses incurred. On the other hand, benefit-sharing initiatives go beyond compensation by offering additional resources and services that contribute to community development and well-being.

Conclusion

This article has provided a comprehensive analysis of various aspects related to hydropower benefit-sharing in Nigeria. The examination of sporting, cultural, and religious infrastructure in Nigeria has highlighted that these elements are considered as compensation for the losses incurred during hydropower development. They are not categorized as benefit-sharing, as their primary purpose is replacement rather than enhancement. The concept of replacement as compensation has been emphasized throughout the paper, indicating that certain resources, such as lost land and housing, fall under the compensation category rather than benefit-sharing. This distinction is important in understanding the different approaches to addressing the needs of project-affected communities. Consultation and mitigation have been recognized as crucial elements in the governance of benefit-sharing. The paper emphasizes the significance of capacity building and gradual transfer of spending decisions to ensure meaningful participation by project-affected individuals. It also suggests that the institutional setup for benefit-sharing should consider the



capacity of governments in dam-hosting locations, with high-capacity states benefiting from legally mandated mechanisms and low-capacity ones adopting developer-led approaches. A mix of institutional arrangements and benefit-sharing mechanisms is deemed desirable for effective implementation.

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