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

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**Abstract** Hydropower development projects are increasingly expected to incorporate benefit-sharing initiatives that involve transferring resources to individuals and communities affected by the projects. However, the understanding and implementation of hydropower benefit-sharing remain limited. This conceptual review paper aims to contribute to the understanding of benefit-sharing in the context of hydropower development in Nigeria. Firstly, we provide clarity on the distinctions between benefit-sharing, compensation, and related concepts. Benefit-sharing is viewed as a sustainability intervention, focusing on generating long-term positive developmental impacts beyond mere replacement or marginal improvement of lost assets. It involves the transfer of resources and services that differ substantively from compensation, determined through participatory processes with project-affected individuals, and delivered during the later stages of dam planning and operation. Secondly, we explore the governance challenges involved in achieving effective and equitable benefit-sharing. By examining these issues, policymakers, project developers, and local communities can work towards establishing effective benefit-sharing frameworks that promote sustainable development in the context of hydropower projects in Nigeria.

**Keywords** Hydropower benefit-sharing, equitable distribution, project-affected areas, resettlement, stakeholders, inclusive mechanism

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### Introduction

Hydropower development projects have long been recognized as crucial sources of renewable energy, offering significant potential to meet growing electricity demands while reducing reliance on fossil fuels (Adeyemo & Otieno, 2010). As countries strive to address the challenges of climate change and achieve sustainable development, hydropower has emerged as a promising option for clean energy generation (Enitan et al., 2015). However, the benefits of hydropower projects must be carefully balanced with the social and environmental consequences they entail, particularly in terms of benefit-sharing and resettlement.

In the context of hydropower development, benefit-sharing refers to the equitable distribution of project benefits among the individuals and communities directly affected by the project (Galvez & Rojas, 2019). It encompasses the transfer of resources, services, and opportunities that aim to improve the well-being and livelihoods of project-affected people. Benefit-sharing has gained prominence as an essential aspect of sustainable development, recognizing the need to mitigate the negative impacts and enhance the positive outcomes of large-scale infrastructure projects such as hydropower dams (Price et al., 2020).

Resettlement, on the other hand, involves the physical displacement and relocation of communities residing in the areas designated for dam construction. Often, the construction of hydropower dams necessitates the inundation of large land areas, resulting in the displacement of communities and disruption of their socio-economic fabric (Annys



et al., 2019). Resettlement processes are complex and multifaceted, involving not only the physical relocation of individuals and families but also the provision of compensation, rehabilitation, and opportunities for their socio-economic recovery (Price et al., 2020).

The case of Nigeria provides a compelling context for examining the challenges and opportunities associated with hydropower benefit-sharing and resettlement. With a growing population and increasing energy demand, Nigeria has been actively pursuing the development of its hydropower potential. The country is endowed with abundant water resources, making hydropower an attractive option for expanding its energy infrastructure. Projects such as the Mambilla Hydroelectric Power Project, Zungeru Hydroelectric Power Project, and the Gurara II Hydropower Project are indicative of Nigeria's ambitions in harnessing its hydropower potential (Emetere et al., 2021; Oruonye, 2015; Sambo et al., 2010; Yuguda et al., 2023).

However, as Nigeria advances its hydropower development agenda, it faces a range of complex issues related to benefit-sharing and resettlement. Historically, large-scale infrastructure projects in the country, including hydropower dams, have been marred by inadequate consideration of the rights and well-being of affected communities (Oruonye, 2015). Insufficient attention to benefit-sharing and resettlement has led to social conflicts, loss of livelihoods, and disempowerment of marginalized groups. Thus, it is imperative to critically examine the existing policies, practices, and challenges surrounding hydropower benefit-sharing and resettlement in Nigeria. The primary aim of this review article is to provide a comprehensive conceptual analysis and critical assessment of hydropower benefit-sharing and resettlement in Nigeria.

To achieve this objective, the article is structured as follows: After this introduction, we will first provide a conceptual framework for understanding benefit-sharing, compensation, and related concepts. By clarifying the distinctions and commonalities among these terms, we aim to establish a foundation for discussing benefit-sharing in the context of hydropower development. We will then delve into the specific challenges and governance issues involved in implementing effective benefit-sharing mechanisms in Nigeria. This section will address issues such as participation, capacity-building, and institutional frameworks.

Following the examination of benefit-sharing, we will turn our attention to the topic of resettlement. We will explore the complexities of resettlement processes, including the identification of affected communities, compensation mechanisms, livelihood restoration, and social integration. Drawing on case studies and empirical evidence, we will critically assess the experiences and outcomes of resettlement efforts in Nigeria's hydropower projects.

In the subsequent section, we will analyze the existing policies, legal frameworks, and institutional arrangements pertaining to benefit-sharing and resettlement in Nigeria. By evaluating the strengths and weaknesses of these frameworks, we will identify potential areas for improvement and recommend policy interventions that promote more equitable and sustainable outcomes.

Finally, we will conclude the review by summarizing the key findings, highlighting the implications for policy and practice, and identifying avenues for future research. Through this comprehensive analysis, we aim to provide a valuable resource for policymakers, practitioners, and researchers engaged in the planning and implementation of hydropower projects, with a specific focus on benefit-sharing and resettlement in the Nigerian context.

### **Benefit-sharing, Compensation, and Beyond: Conceptual Clarifications in Nigeria**

Hydropower development projects have the potential to generate substantial benefits in terms of clean energy production, economic growth, and infrastructure development (Annys et al., 2019). However, the construction and operation of such projects often result in adverse impacts on communities living in the project-affected areas. As a means to address these negative consequences and ensure the equitable distribution of benefits, the concepts of benefit-sharing and compensation have emerged as integral components of sustainable development frameworks (Cooke et al., 2017). In the Nigerian context, where hydropower development is gaining momentum, understanding and clarifying these concepts is crucial for effective policy formulation and implementation.

Benefit-sharing can be understood as a process through which the benefits derived from a development project, such as hydropower, are distributed equitably among the individuals and communities directly affected by the project (Jiménez-Inchima et al., 2021). Unlike compensation, which focuses on replacing or compensating for losses incurred, benefit-sharing goes beyond mere restoration and aims to enhance the well-being and socio-economic



conditions of project-affected people. It entails the transfer of resources, services, and opportunities that contribute to long-term positive development outcomes (Price et al., 2020).

Compensation, on the other hand, refers to the monetary or non-monetary payments provided to individuals or communities as a form of recompense for the losses they incur due to project-induced impacts. Compensation primarily aims to restore or offset the material or economic losses experienced by project-affected individuals. While compensation is an important aspect of addressing immediate impacts, benefit-sharing extends beyond compensation by encompassing a broader range of benefits that are sustainable and contribute to the overall development of affected communities (Pulice & Moretto, 2017; Tian et al., 2021).

In the Nigerian context, benefit-sharing and compensation have been the subject of significant attention due to the country's increasing focus on hydropower development. Nigeria's ambitious hydropower projects, such as the Mambilla Hydroelectric Power Project, have the potential to significantly transform the energy landscape of the country (Yuguda et al., 2023). However, it is essential to ensure that the benefits of these projects reach the local communities who bear the brunt of their social and environmental consequences.

One key challenge in implementing effective benefit-sharing and compensation mechanisms in Nigeria is the conceptual clarity surrounding these concepts. Often, there is confusion and ambiguity regarding the scope, purpose, and differences between benefit-sharing and compensation. This lack of clarity can hinder the formulation of appropriate policies and hinder the equitable distribution of benefits. To address this issue, it is necessary to provide conceptual clarifications and establish a common understanding of benefit-sharing and compensation within the Nigerian context (Berga, 2016; Jiménez-Inchima et al., 2021; Sambo et al., 2010; Scudder, 2020).

### **Benefit-Sharing Qualification**

In the context of hydropower development, benefit-sharing refers to the equitable distribution of benefits to the individuals and communities affected by the project. It encompasses a wide range of resources and services aimed at enhancing the well-being and socio-economic conditions of project-affected people (Wiejaczka et al., 2020). However, it is important to clarify which activities qualify as benefit-sharing, as distinct from compensation or other categories. This section examines the substantive dimensions of benefit-sharing and provides a framework for understanding the qualification of resources and services within this context.

### **Substantive Dimensions**

To understand the scope of benefit-sharing, it is essential to differentiate it from compensation and other categories such as developer's interests and governmental development objectives. Compensation primarily focuses on monetary or non-monetary payments provided to individuals or communities as recompense for losses incurred due to project impacts. In contrast, benefit-sharing entails a broader range of benefits that go beyond mere compensation and contribute to long-term positive development outcomes for the affected communities (Parks, 2018).

The framework of benefit sharing illustrates the categorization of resources and services associated with benefit-sharing (Hassan et al., 2018). These benefits can include physical infrastructure, preferential employment schemes, scholarships, and other forms of support. They may be directly or indirectly financed through the revenues generated from hydropower sales or through specific financial mechanisms such as community development funds. It is important to note that benefit-sharing primarily targets communities or groups rather than individuals, and the benefits provided often have a collective, public good character (Mayer et al., 2021).

However, not all resources and services received by project-affected people can be exclusively considered as benefit-sharing. There are overlaps between different categories, which can lead to confusion in terminology. Therefore, it is crucial to systematically review and categorize these resources and services to provide clarity on their qualification within the benefit-sharing framework (Cooke et al., 2017; Emeteri et al., 2021; Kusnandar et al., 2019).

The proposed categorization encompasses four main categories: compensation, benefit-sharing, developer's interests, and governmental development objectives (Galvez & Rojas, 2019). Compensation falls under the category of resources and services provided to compensate for losses incurred by project-affected individuals. Benefit-sharing encompasses a broader range of benefits directly aimed at enhancing the well-being and development of affected communities. Developer's interests refer to resources and services that align with the priorities and objectives of the



hydropower developer, while governmental development objectives relate to the broader development goals set by government organizations (Wilmsen, 2018).

This categorization helps to establish a clearer understanding of benefit-sharing by ensuring that resources and services are appropriately classified. It also highlights the different decision-making processes and governance structures associated with each category. Government organizations play a significant role in resources and services linked to governmental development objectives, while investments aligned with developer's interests are determined by the priorities of the hydropower developer (Wilmsen, 2018). The qualification of activities within the framework of benefit-sharing is crucial for effective implementation and governance.

### **Land and Housing Loss Replacement in Nigeria**

In the context of hydropower development, the issue of land and housing loss arises as a significant concern for communities living in project-affected areas. This section focuses on the replacement of lost land and housing and explores the distinction between compensation and benefit-sharing in the Nigerian context. Specifically, it examines the processes involved in identifying and providing replacements for lost land and housing, the legal obligations of developers, and the challenges that may arise during the resettlement process (Jiménez-Inchima et al., 2021).

#### **Replacement as Compensation**

The replacement of lost land and housing is typically considered as a form of compensation rather than benefit-sharing. In Nigeria, this distinction is clarified through Resettlement Action Plans (RAPs) that outline the legal obligations of the hydropower developer to organize the replacement of lost land and housing (Emetere et al., 2021; Sambo et al., 2010). Whether the land and housing were privately owned or communally owned, the provision of like-for-like replacements is seen as compensation for the affected individuals or communities.

The responsibility for carrying out physical infrastructure-based compensation, such as replacing lost land and housing, often falls upon contractors hired by the hydropower developer. While the planning and budgeting for these replacements may seem straightforward due to the tangible nature of the assets involved, challenges can arise during the implementation process. Factors such as architectural style, sizes, and building materials of new houses can pose significant challenges that may strain the relationship between the developer and the project-affected people.

#### **Regulatory Framework and Challenges**

In cases where international donor safeguards are in place, the new land allocated for resettled displaced people must provide equivalent crop yields to traditional fields. This requirement ensures that the replacement land enables affected communities to maintain their livelihoods and sustain their agricultural activities (Atkins & Hope, 2021). However, national legislation in Nigeria may have less precise methodologies for determining the value or quality of replacement land, which could lead to variations in the adequacy of replacements provided.

Moreover, the availability of suitable replacement land can pose a significant challenge. In Nigeria, where land is a valuable and limited resource, identifying appropriate land for replacement purposes can be complex. Factors such as land tenure systems, existing land use patterns, and community preferences must be considered to ensure the replacement land meets the needs and aspirations of the affected individuals or communities (Kusnandar et al., 2019). Additionally, issues related to land ownership, compensation for lost crops or trees, and access to essential services and infrastructure in the new resettlement areas may arise and require careful consideration.

#### **Community Engagement and Participation**

Ensuring the meaningful participation of the affected communities in the process of land and housing loss replacement is crucial for addressing their concerns and upholding their rights. The involvement of affected individuals and communities in decision-making regarding replacement options, such as the location and design of new houses or the selection of replacement land, is vital for fostering a sense of ownership and mitigating potential conflicts.

In Nigeria, the replacement of lost land and housing in the context of hydropower development is primarily considered as compensation rather than benefit-sharing. The identification and provision of like-for-like replacements are guided by Resettlement Action Plans (RAPs) and legal obligations imposed on the hydropower



developer. However, challenges related to land availability, land tenure systems, community preferences, and access to essential services may complicate the replacement process.

Efforts should be made to ensure the meaningful participation of affected communities in decision-making regarding replacement options, fostering a sense of ownership and addressing their concerns. By recognizing the distinction between compensation and benefit-sharing and addressing the challenges associated with land and housing loss, policymakers and developers can work towards implementing effective and equitable resettlement processes that uphold the rights and well-being of the affected individuals and communities in Nigeria.

### **Watershed Protection**

Watershed protection is an important aspect of hydropower development in Nigeria, primarily serving the interests of the developers. It involves implementing measures to safeguard the upstream areas of a dam, such as the planting of native vegetation or establishing biodiversity reserves (Kusnandar et al., 2019). While these actions contribute to the overall environmental well-being and long-term sustainability of the project, their direct benefits to the project-affected people may be limited.

One key objective of watershed protection is to reduce the amount of sediments entering the river, thereby improving the lifespan and operational efficiency of the dam. By planting native vegetation and creating biodiversity reserves, developers can enhance the ecological integrity of the watershed and mitigate potential negative impacts on the downstream ecosystem. These efforts also help to strengthen the environmental credentials of the project, promoting its adherence to sustainability principles.

However, it is important to acknowledge that watershed protection measures may introduce additional challenges for the project-affected people (Hecht et al., 2019). The creation of biodiversity reserves, for instance, may lead to further displacements or impose access and use restrictions on certain areas. This highlights the need for careful planning and engagement with the affected communities to ensure their concerns are addressed and their livelihoods are safeguarded.

In some cases, watershed protection initiatives are implemented through Payments for Ecosystem Services (PES) schemes. These schemes involve providing financial incentives to local landowners or managers for undertaking activities that contribute to ecosystem preservation and restoration (Galvez & Rojas, 2019). While PES schemes have the potential to benefit local communities economically, successful examples in the context of hydropower development remain limited.

Overall, watershed protection measures in hydropower projects in Nigeria primarily serve the interests of the developers by ensuring the long-term sustainability of the project and enhancing its environmental performance. While these measures contribute to the greater public good by preserving the ecological integrity of the watershed, their direct benefits to the project-affected people may be indirect or limited. It is essential for developers to engage in transparent and inclusive processes when implementing watershed protection initiatives, taking into account the concerns and needs of the affected communities (Wilmsen, 2018). By doing so, developers can strive for a balance between environmental conservation and the well-being of the project-affected people, promoting sustainable development in the region.

### **Governmental and developers' roles in benefit-sharing**

Balancing the roles of governments and developers in benefit-sharing is a crucial aspect of hydropower projects in Nigeria. Both parties have distinct responsibilities and interests, and striking a balance between their roles is essential for ensuring equitable outcomes, sustainable development, and the effective utilization of hydropower resources.

Governments in Nigeria have a critical role to play in establishing policies, regulations, and frameworks that govern benefit-sharing processes. They have the responsibility to protect the rights and interests of project-affected communities, ensure the equitable distribution of benefits, and promote sustainable development objectives. Governments set the legal and institutional frameworks within which benefit-sharing agreements are negotiated and implemented.

Furthermore, governments are responsible for defining the scope and nature of benefit-sharing initiatives. They establish the criteria for determining eligible benefits, such as infrastructure development, social services,





employment opportunities, and environmental conservation measures. Governments also oversee the monitoring and evaluation of benefit-sharing programs to ensure compliance and accountability.

Developers, on the other hand, have a vested interest in the successful implementation of hydropower projects. They invest in the infrastructure, carry out the construction and operation of the dams, and generate revenue from the sale of electricity. Benefit-sharing provides developers with an opportunity to build positive relationships with project-affected communities, gain social acceptance, and contribute to local development.

Developers have a responsibility to engage in transparent and meaningful consultations with project-affected communities throughout the benefit-sharing process. This includes providing relevant information, addressing community concerns, and ensuring that the benefits provided align with the needs and aspirations of the affected areas. Developers must also adhere to environmental and social safeguards to mitigate the negative impacts of their projects and promote sustainable practices.

Balancing the roles of governments and developers requires effective collaboration, cooperation, and mutual understanding (Mancilla García et al., 2019). Governments should establish clear guidelines and standards for benefit-sharing negotiations and ensure that developers fulfill their obligations. At the same time, developers should actively engage with governments and project-affected communities to ensure that their interests are represented and incorporated into the benefit-sharing agreements (Mancilla García et al., 2019).

To achieve a balanced approach, it is crucial to foster transparency, accountability, and good governance practices. This includes promoting dialogue, information sharing, and participatory decision-making processes. Governments should create opportunities for public consultations, allowing project-affected communities to voice their concerns, provide input, and actively participate in the benefit-sharing discussions (Mancilla García et al., 2019).

Balancing the roles of governments and developers in benefit-sharing is crucial for the sustainable and equitable development of hydropower projects in Nigeria. Governments play a regulatory and oversight role, ensuring that benefit-sharing aligns with national development objectives and safeguards the rights of project-affected communities. Developers, on the other hand, have the responsibility to engage with communities, provide meaningful benefits, and contribute to local development. By fostering collaboration, transparency, and accountability, a balanced approach can be achieved, leading to positive outcomes for all stakeholders involved in hydropower benefit-sharing in Nigeria (Annys et al., 2019; Jiménez-Inchima et al., 2021; Mancilla García et al., 2019; Sambo et al., 2010).

## Conclusion

This review article has provided a comprehensive examination of hydropower benefit-sharing and resettlement, with a specific focus on Nigeria. By clarifying the conceptual framework and addressing key aspects related to benefit-sharing, compensation, and governance challenges, this study contributes to the understanding and effective implementation of benefit-sharing mechanisms in hydropower projects. The analysis revealed that benefit-sharing goes beyond mere compensation for lost assets and aims to generate positive, long-term development impacts for project-affected communities. It emphasizes the transfer of resources and services that are substantively different from compensation, determined through participatory processes, and delivered during the later stages of dam planning to operation. This conceptual clarity enables stakeholders to navigate the complexities of benefit-sharing and distinguish it from other related concepts. By focusing on Nigeria as an illustrative case, this study highlights the application of benefit-sharing concepts in a specific context.

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