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ARTICLE

The Proactive Impacts of Metolong Dam Project on Society and Environment

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ABSTRACT

This research examined how the Metolong Dam has affected nearby communities and the surrounding environment while supporting long-term development. The findings show that the dam has improved the water supply reliability, strengthened agricultural activities, and supported the production of renewable electricity. With water now available more consistently throughout the year, many farmers can irrigate their crops regularly rather than relying solely on seasonal rainfall. This has increased crop production and improved household food security. Reliable water access also enables farmers to plan their activities more effectively, supporting more stable livelihoods. Another key benefit is improved access to electricity. Many households now depend less on traditional energy sources such as firewood. This change has made daily life easier, especially for cooking, lighting, and using small appliances. Access to electricity has also created new opportunities for small businesses and local economic activities. Shops and service providers can now operate more efficiently, contributing to economic growth within the community. The study gathered data through interviews and discussions with community members, government officials, and environmental experts. It also reviewed official reports and related documents to understand the social, economic, and environmental impacts of the project. Although clear benefits were reported by participants, some concerns were raised about environmental disturbances and the relocation of households during construction. These concerns highlight the need for ongoing environmental monitoring and stronger community involvement in future development planning.

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1. Introduction

The Metolong Dam is one of the major water infrastructure projects constructed to address the increasing demand for water and energy in Lesotho. Over the past few decades, pressure on the country's water resources has increased due to population growth, the expansion of towns and higher demand from households, farming and industries. For many communities, access to reliable and clean water has become a serious concern. To address this challenge, the government introduced the Metolong Dam Programme as part of wider national efforts to improve water security, strengthen public services and support economic development. The project also aligns with national development strategies that promote better management of natural resources, infrastructure investment and improved living conditions for citizens. By storing and supplying water to both urban and rural areas, the dam helps provide a more stable water supply while also supporting electricity generation and other development activities.

The dam has brought several benefits to nearby communities and the wider economy. During the construction phase, many local people gained employment and economic activity increased as workers, suppliers and small businesses became involved in the project. Even after the dam was completed, job opportunities continued through activities such as water management, maintenance of infrastructure and service delivery. Farmers living near the dam have also benefited from the more reliable water supply, which supports irrigation and agricultural production. As a result, many households grow crops more regularly and improve their food security. Research by Pradhan and Srinivasan [1] shows that improved water availability from dam infrastructure strengthens rural livelihoods. In addition, the dam helps the country manage drought periods and seasonal water shortages more effectively.

The environmental role of the dam is also important. Hydropower generated from the project provides a cleaner source of energy compared with fossil fuels, helping to reduce pollution and support environmentally responsible development. According to Chakraborty [2], renewable energy from hydropower plays an important role in promoting long-term environmental sustainability. The dam also helps regulate the flow of the river, which may reduce the risk of severe flooding and maintain more stable water levels downstream. These functions, as noted by Albou et al. [3], can help protect aquatic ecosystems while ensuring that communities continue to have access to water for daily use, farming and other activities.

Despite these positive outcomes, the long-term social and environmental effects of the dam are not yet fully understood. Many earlier studies have focused mainly on technical performance and economic efficiency while paying less attention to social well-being, environmental protection and changes in the landscape over time. This study, therefore, adopts a broader approach by examining the social, environmental and economic impacts of the dam together. By combining community perspectives with environmental and development analysis, the research aims to provide a more balanced understanding of how large infrastructure projects influence sustainability.

Future research should continue to use interdisciplinary approaches that bring together environmental, social and economic perspectives. As highlighted by Adams et al. [4], long-term studies are important for understanding how dams affect community health, biodiversity and climate resilience over time. In addition, involving local communities in research and decision-making is essential. Residents often have valuable knowledge about the benefits and challenges of development projects. Bang [5] believes that listening to people's ideas can assist policymakers. It helps them improve dam management, strengthen positive outcomes and reduce potential risks while promoting sustainable development for future generations.

This study makes an original contribution by ap-

plying a Comprehensive Impact Assessment (CIA) framework to the Metolong Dam, a context that has received limited scholarly attention compared to large dam projects in other regions. Unlike many previous studies that focus mainly on technical or economic outcomes, this research integrates social, environmental and economic dimensions to provide a more holistic and context-specific analysis. In addition, the study contributes empirically by incorporating local community perspectives alongside environmental observations, thereby offering grounded insights into how infrastructure development affects livelihoods and ecosystems over time. By addressing geographical, methodological and thematic gaps in the existing literature, the research provides new evidence to support more inclusive and sustainable water resource management in Lesotho and similar developing country contexts.

2. Literature Review

A Comprehensive Impact Assessment (CIA) is a structured method used to examine how development projects affect society, the environment, the economy and cultural systems. Instead of focusing on only one aspect, this approach considers several areas together in order to understand the full effects of a project. According to Wang et al.[6], this type of integrated analysis helps decision-makers understand complex trade-offs and make more balanced policy decisions. The approach is especially important for large infrastructure projects such as the Metolong Dam in Lesotho, because such projects can bring both major benefits and serious risks. By identifying environmental, social and economic effects early, planners can strengthen positive outcomes while reducing possible negative impacts.

Many scholars agree that the CIA improves development planning, but they differ in how they assess its effectiveness and practical application. For example, Basha[7] emphasizes decision-making benefits, while Jordana and Triviño-Salazar[8] focus on stakeholder participation and governance outcomes. This suggests that although CIA is widely supported, different studies prioritize different dimensions of its value. Similarly, Smith et al.[9] highlight cost reduction, whereas other researchers emphasize social legitimacy and transparency. These differences indicate that CIA is not a uniform tool but a flexible framework that depends on context.

However, researchers also point out several challenges related to the CIA and their perspectives reveal important contrasts. Kermanshachi and Pamidimukkala[10] focus on financial and resource constraints, while Head[11] emphasizes methodological complexity. In contrast, Schmid-Petri et al.[12] highlight political influence and Islamoglu[13] discusses the risk of "analysis paralysis". Taken together, these studies show that CIA limitations are multidimensional-financial, technical and political. This comparison suggests that while CIA is theoretically strong, its practical application is uneven and context-dependent.

International experiences further illustrate both the strengths and limitations of the CIA while also revealing geographical imbalances in the literature. In Brazil, studies such as Sánchez and Duarte[14] emphasize ecological protection and community displacement, whereas research from China[15] prioritizes economic development and energy security. This comparison shows that different national contexts shape how the CIA is applied and what is prioritized. These variations suggest that CIA outcomes are influenced by governance systems and development priorities.

Despite the growing body of literature, several important research gaps remain. First, most studies focus on large economies such as Brazil, China and India, with limited research in smaller developing countries like Lesotho. This creates a geographical bias that limits the applicability of findings. Second, many studies prioritize economic and technical aspects while giving less attention to long-term social impacts such as community adaptation and livelihoods. Third, there is limited longitudinal research examining how impacts change over time. Furthermore, few studies explore how CIA frameworks can be adapted to local governance systems and limited resources in developing countries. These gaps highlight the need for context-specific and socially grounded research. This gap is particularly relevant for projects like the Metolong Dam, where development goals are closely connected to water security, community livelihoods and environmental sustainabil-

ity. Therefore, this study asks the following question: how can a CIA framework be used to better understand the combined social, environmental and economic impacts of the Metolong Dam on nearby communities and ecosystems over time? By addressing the lack of research in smaller developing countries and integrating multiple perspectives, this study directly responds to identified gaps in the literature.

In conclusion, the CIA plays an important role in understanding the wide-ranging effects of large development projects, although its application varies across contexts. Leal Filho et al. [16] emphasize that such assessments improve decision-making, encourage stakeholder participation and support environmentally responsible development. However, previous studies show that effectiveness depends on managing financial, technical and political challenges. International experiences demonstrate that CIAs can help maximize positive outcomes while reducing harm, but also reveal uneven implementation across regions. Shukla et al. [17] and Biró et al. [18] suggest that more context-sensitive applications are needed globally. For projects like the Metolong Dam, applying such an integrated and locally adapted framework is essential to ensure that development benefits both people and the environment in the long term.

3. Methods

3.1. Study Area

The study was carried out in Ha Seeiso, a small rural community located near Thaba Bosiu in central Lesotho. This area lies close to the Metolong Dam, making it a suitable location for examining how the dam affects nearby communities. The physical landscape of Ha Seeiso consists mainly of rolling hills, valleys and wide grasslands that are commonly used for grazing livestock. Rainfall in this region is seasonal and the amount of water available often influences both farming activities and daily household water use. The social and economic situation of Ha Seeiso is similar to that of many rural communities across Lesotho. Most residents rely on small-scale farming and livestock keeping as their main sources of income and food. Some people also travel to nearby towns, especially Maseru, to look for temporary or informal employment. However, limited infrastructure and unreliable water supply have long been challenges for the community. In many cases, families depend on natural water sources that may not always be available throughout the year. Because of this, having a reliable water supply is very important for improving both household well-being and agricultural productivity.

Ha Seeiso was chosen as the study area mainly because of its close location to the Metolong Dam and its connection to the surrounding water system. By focusing on this community, the research was able to observe how a large water infrastructure project affects people's everyday lives, local environmental conditions and patterns of rural development. Studying this area, therefore, provided valuable insights into how projects like the Metolong Dam influence livelihoods and environmental management in nearby communities.

3.2. Research Approach and Data Collection Methods

This study used a qualitative research approach to explore the positive impacts of large dams on communities and the environment. The research focused on the experiences and views of people living near the Metolong Dam in Lesotho. Instead of relying solely on numerical data, the study aimed to understand how people describe the changes they have experienced since the dam was developed. Information was mainly collected through open-ended interviews and a review of relevant documents. The interviews involved different groups of people, including local community members, government officials and environmental specialists. Open-ended questions were used so that participants could freely share their experiences, opinions and observations in their own words. This method helped the researcher gain deeper insights into everyday life in the community, including changes in farming activities, water use and local development. The personal accounts shared by participants also helped explain how policies and environmental management practices are experienced at the local level.

In addition to interviews, the study included a systematic review of documents related to dam development and its impacts. These materials included aca-

demic articles, government reports and institutional publications that discuss environmental, social and economic outcomes of large dam projects. The document review was conducted between January and February 2026 using reliable online databases and official sources. Key materials were accessed through platforms such as Google Scholar and reports from the United Nations on environmental and development issues. By combining interviews with document analysis, the study developed a broader understanding of how dam projects influence both communities and ecosystems. According to Chand [19], using interviews together with document reviews helps researchers better understand the relationship between people and environmental systems. Similarly, Meydan and Akkaş [20] explain that combining different sources of information improves the reliability of research findings because it links personal experiences with documented evidence.

3.3. Sampling Method and Population of the Study

To understand the social benefits of the Metolong Dam, this study used a qualitative research approach supported by purposive and stratified sampling. The community was first divided into several groups so that different experiences and viewpoints could be included in the research. These groups included local residents involved in farming or livestock keeping, community leaders or representatives, government officials working in water management and environmental practitioners. Participants were selected because they had relevant knowledge about local water use, community development and environmental changes associated with the dam project. From these groups, a total of 35 participants (n = 35) were selected for the study. The sample included approximately 20 community residents, 7 local leaders, 5 government officials and 3 environmental specialists. This combination helped the study capture both the everyday experiences of people living in the area and the views of institutions responsible for water and environmental management. Including participants from different backgrounds made it possible to develop a broader and more balanced understanding of how the dam has affected the community.

The selected sample size was suitable for qualitative research because it allowed for detailed discussions while still representing a variety of perspectives. Participants took part in open-ended interviews where they were encouraged to speak freely about how the dam influenced their lives. They discussed issues such as water availability, farming activities, local employment opportunities and improvements in community services. These conversations helped reveal the reasons behind many of the positive social changes linked to the dam, including a more reliable water supply, better farming conditions and growing local economic opportunities. Using participants from different groups also helped reduce bias and strengthen the credibility of the findings. According to Zhu et al. [21], including multiple community perspectives helps researchers better understand the relationship between people and environmental systems. Similarly, Merkebu et al. [22] explain that careful sampling improves the reliability of qualitative research.

3.4. Data Analysis and Methodological Transparency

After the interviews were completed, all responses were transcribed verbatim and systematically organized to prepare for analysis. The researcher began with data familiarization, which involved repeatedly reading through the transcripts to gain a deeper understanding of participants' perspectives and to identify preliminary ideas. A thematic analysis approach was then applied using a structured coding process. Initially, open coding was conducted, during which meaningful segments of the data were identified and assigned initial codes. This was done manually using qualitative data analysis techniques, with similar words, phrases and ideas highlighted and labelled. Following this, axial coding was applied to group related codes into broader categories by identifying relationships between them. These categories were further refined into clearly defined themes that captured recurring patterns across the dataset.

The development of themes followed a systematic process in which initial codes were generated from the raw data, similar codes were grouped together based on shared meanings, broader categories were formed from these groups and final themes were developed and re-

viewed to ensure they accurately represented the data. Through this process, key themes such as improved water management, enhanced agricultural production and increased community participation in development activities were identified. These themes were not predetermined but emerged directly from the data, ensuring that the analysis remained grounded in participants' experiences.

To enhance reliability, the researcher maintained a clear and consistent coding framework throughout the analysis. Codes and themes were repeatedly reviewed and compared with the original data to ensure consistency. In addition, detailed records of all analytical decisions, including coding steps and theme development, were maintained to support transparency and reproducibility. To ensure validity, particularly credibility and trustworthiness, several strategies were applied. Data triangulation was used by comparing interview findings with field observations and secondary sources to confirm the consistency of results. Thick description was ensured by preserving participants' original meanings during transcription and analysis, and reflexivity was practiced by the researcher to acknowledge and minimize potential biases during interpretation.

The research process also emphasized transparency and auditability, with every step, including data collection, transcription, coding and theme development, clearly documented. This aligns with Saharan et al.[23], who argue that detailed documentation enables other researchers to understand how results were produced and to assess the reliability of a study. Similarly, Adebayo[24] highlights that transparent research methods enhance the usefulness of findings for policymakers and stakeholders. This level of methodological clarity is particularly important in development projects such as the Metolong Dam, where research findings inform decisions that impact communities, ecosystems and long-term sustainability. By clearly outlining the interview design, analytical procedures and validation strategies, this study ensures that its findings are robust, credible and applicable. Overall, as noted by Ahmed et al.[25], state that organizing data into themes improves research quality. Transparent and rigorous analysis further strengthens the study. This approach helps provide a clear understanding of community experiences. It also connects these experiences to broader environmental and development outcomes. As a result, the findings are meaningful, reliable, and well-founded.

3.5. Ethical Considerations

Before the research started, ethical approval was obtained to ensure that the study followed appropriate academic and research standards. Participants were first given clear information about the purpose of the study and what their participation would involve. They were also informed that taking part was completely voluntary and that they could choose not to answer certain questions or withdraw at any time. Those who agreed to participate provided informed consent before the interviews began. The study also followed strict confidentiality procedures to protect participants' privacy. Personal details such as names and other identifying information were not recorded in the final research report. Instead, the responses were used solely for academic purposes and were presented in a general manner that could not identify any individual participant. Maintaining confidentiality helped participants feel comfortable sharing their experiences and opinions openly. By respecting ethical guidelines and protecting participants' rights, the research aimed to create a safe and trustworthy environment for everyone involved. This approach helped ensure that the information collected was both responsible and reliable for understanding the social and environmental impacts of the Metolong Dam in Lesotho.

4. Data Presentation

Interviews carried out with community members living near the Metolong Dam in Lesotho showed that the project has brought several positive changes to local communities. Many participants shared their personal experiences of how the dam has improved their daily lives and supported development in the surrounding villages. One of the most commonly mentioned benefits during the interviews was the improvement in water supply. Before the dam was built, most households depended on rainfall, small streams or water sources located far from their homes. During dry seasons, these

sources often dried up, making it difficult for families to access enough water. Some community members explained that they had to walk long distances to collect water for cooking, washing and watering animals. Since the dam was completed, water has become more reliable and available throughout the year. Many interview participants explained that this improvement has made household activities easier and has helped farmers irrigate their crops more regularly.

Electricity was another important benefit discussed by many respondents. Several people explained that before the development of the dam, their homes relied mainly on firewood, candles or paraffin for lighting and cooking. These sources of energy were sometimes costly and required time and effort to collect. With improved electricity access in areas around the dam, daily life has changed for many families. **Figure 1** illustrates a household that has gained access to electricity as a result of the project.

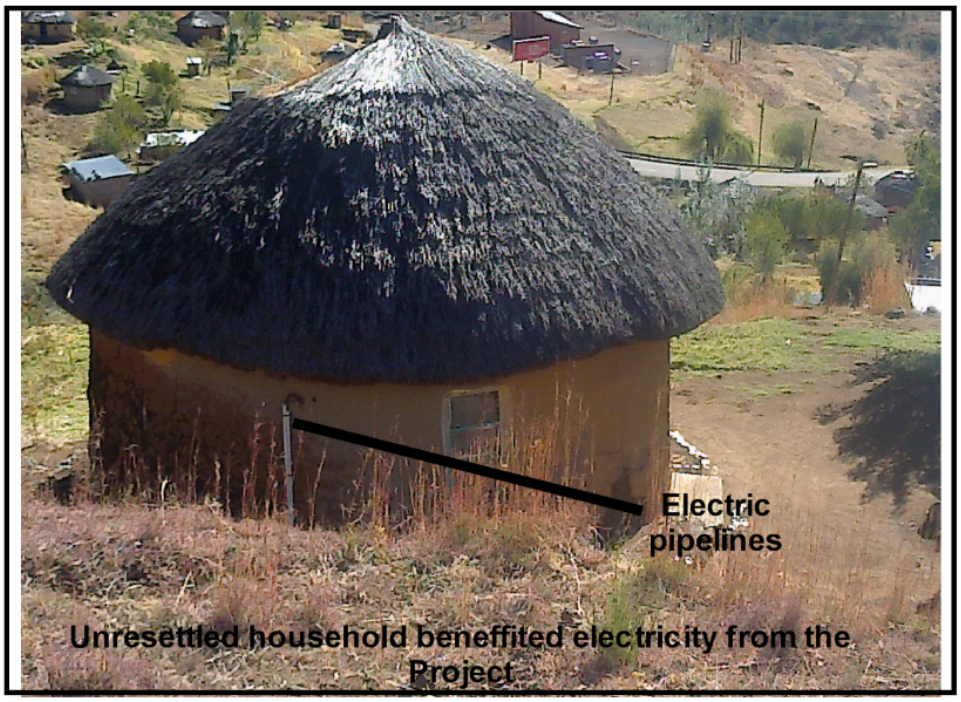

Figure 1. A House Electrified at Metolong.

Source: Own.

Participants mentioned that electricity allows children to study in the evenings with proper lighting. It has also improved safety and comfort in homes. In addition, small businesses have benefited from electricity. Local shop owners said that electricity helps them store food in refrigerators, operate machines and keep their businesses open for longer hours. Interview responses also pointed to improvements in local infrastructure. Many community members talked about the construction of bridges and better roads near the project area. Before these developments, rivers often made it difficult for people to travel between villages, especially during the rainy season. The construction of new bridges has improved safety and made transportation easier for community members, as shown in **Figure 2**. Farmers explained that improved roads and bridges help them take their crops and livestock to markets more easily, which supports local economic activities.

Sanitation improvements were also mentioned as a positive outcome of the project. Some participants reported that development initiatives linked to the dam motivated households to construct proper toilet facilities, as shown in **Figure 3**. These sanitation facilities have helped improve hygiene and reduce certain health risks in the community. A few respondents also said that awareness programs linked to the project taught people about the importance of clean water, sanitation and healthy living practices.

Figure 2. The Bridge Built over the Phuthiatsana River Leads to Ha Makhoathi.

Source: Own.

Figure 3. Toilets before and after Completion of Metolong Project.

Source: Own.

Another benefit highlighted during the interviews was job creation. During the construction of the dam, many local residents found temporary work in construction, transportation and support services. Even after the project was completed, some employment opportunities remained in areas such as maintenance, security and water management. These jobs provided income for several families and helped improve their living conditions. The CIA's theoretical framework used in this study helped to identify and reinforce these positive outcomes. This type of assessment considers the social, environmental and economic effects of development projects together. The thematic analysis of the interview data was helpful because it showed how the Metolong Project affected communities and their everyday lives. Community-based interviews were valuable because they reflected the genuine experiences and views of local residents. Integrated impact assessments also help ensure that infrastructure projects support sustainable development while improving community welfare.

5. Results

The findings and analysis indicate that the construction of the Metolong Dam has significantly improved the living conditions of many communities by strengthening access to essential services. One of the most noticeable benefits has been the improved and more reliable water supply for households, schools and health facilities, as shown in **Table 1**. The project has also supported better access to electricity, which has improved daily activities, learning environments in schools and the delivery of medical services. In addition, new roads, bridges and other infrastructure developed during the project have made transportation easier. Sanitation conditions have improved due to better water availability, while employment opportunities were created during both the construction and operation phases of the dam. These developments have contributed to improving livelihoods and supporting local development [26].

Before the construction of the Metolong Dam in Lesotho, many rural and peri-urban communities depended mainly on seasonal rainfall, small streams or water sources that were far from their homes, as illustrated in **Table 2**. As a result, water shortages were common and farming activities were often unstable. Interviews with local residents showed that agriculture was not reliable and many families struggled to meet their daily needs for water and energy. Life during that period was described as uncertain, especially for farmers who depended entirely on rainfall.

Table 1. Summary of Key Benefits by Sector.

Sector	Benefits	Mechanism/Intervention
Agriculture	Stable crop yields, food security	Year-round irrigation, stored dam water
Energy	Electricity access	Hydropower generation replacing firewood/paraffin
Economy	Increased trade, jobs, infrastructure development	Electricity enables business and local markets
Social	Improved education and healthcare	Electrified schools and health canters
Environmental	Flood control, reduced water wastage	Managed water release and distribution
Governance	Community participation, equitable resource allocation	Transparent planning and monitoring systems

Source: Own.

Table 2. Pre- and Post-Dam Community Conditions.

Aspects	Before Dam Construction	After Dam Construction	Evidence
Water Supply	Dependent on seasonal rainfall, streams, distant sources, frequent shortages	Reliable water availability year-round, supports irrigation	Interviews with local residents
Agriculture	Low productivity; farming unpredictable	Consistent crop cultivation; improved food security	Interviews and environmental assessments
Energy	Reliance on firewood/paraffin, limited electricity	Hydropower electricity; supports households, businesses, schools and health centres	Interviews with business owners
Economic Activity	Limited trade and employment, underdevelopment infrastructure	Stimulate trade; more employment, improved roads and communication networks	Community leaders interviews
Flood management	Inadequate protection, irregular water flow	Organised management systems, inclusive planning and decision-making	Interviews

Source: Own.

After the dam was constructed, the situation improved, as shown in **Table 3**. Water stored in reservoirs and supplied through irrigation systems became available throughout the year. Farmers explained that they could now grow crops more regularly instead of waiting for the rainy season. This improvement helped increase agricultural production, strengthen household incomes and improve food security in the community. Many participants shared that having steady access to water gave them confidence to plan their farming activities better and invest more time in their fields. The findings also show that electricity generation through hydropower has improved living conditions. Before the project, many households relied on firewood or paraffin for cooking and lighting. With access to electricity, daily life has become easier and more convenient. Interviews with business owners and community leaders indicated that electricity has supported small businesses, increased local

trade and created job opportunities.

Schools and health centers have also benefited from reliable power, as shown in from **Table 3**, which has improved teaching conditions and made medical services more effective. The development of infrastructure, such as roads and communication systems, further reflects the broader positive impact of the dam on social and economic development.

Table 3. How the Dam enhanced Community Development.

		Dam Construction
Reliable Water Supply	Consistent irrigation	Increased Agricultural Productivity
Hydropower Generation	Access to electricity	Enhanced living conditions; Business Growth, Education and Health
Effective Dam Management	Efficient Water Use	Flood protection and participatory Governance, Sustainable and Equitable Benefits

Source: Own.

6. Conclusions

Large dams such as the Metolong Dam show that development projects can have both positive and negative effects. On the positive side, dams help improve access to clean water, electricity and better sanitation services. These improvements can support hospitals and clinics, help schools function better, create job opportunities and encourage local businesses to grow. When water and electricity are available more reliably, communities often experience improved living conditions and stronger long-term development. Farmers can irrigate their crops more easily, families can run small enterprises and public services can operate more efficiently. In this way, dams can contribute to economic growth and social progress.

However, dam construction can also create serious social challenges. Some households may lose their land during the construction process and may need to relocate to new areas. This can disrupt their daily lives, reduce their income and cause emotional stress, especially when the land has strong cultural or family meaning. In some cases, problems become worse if compensation is delayed, unclear or seen as unfair. Because of these concerns, large dam projects can only truly support sustainable development when there is careful planning, fair and transparent compensation and meaningful involvement of local communities in decision-making. When people feel heard and respected, development projects are more likely to succeed.

Future research should focus more on the long-term social effects of large dams, especially on communities that were relocated. It is important to understand how losing land may affect people's mental health, cultural identity and relationships over time. More studies are also needed to evaluate compensation systems and determine which approaches are fair and effective in helping families rebuild their livelihoods. Researchers should examine whether new jobs, training programs and alternative income opportunities truly reduce poverty, particularly for women and young people. In addition, more scientific studies are needed to measure long-term health, environmental and water-quality impacts. Comparing large dams with other water and sanitation solutions in rural areas would also help policymakers choose the most sustainable options for future development.

Recommendations

To reduce negative impacts and increase the benefits of large dam projects such as the Metolong Dam, several important steps should be taken. First, governments need to plan carefully before starting construction. This includes studying how the dam may affect people's lives, the local economy and the environment. It is very important to involve nearby communities early in the planning process, especially those who may lose land or need to relocate. When people are consulted and their opinions are respected, development becomes more inclusive and fair. Second, compensation processes should be clear, fair and transparent. People affected by the project need to understand how compensation is calculated and why certain amounts are given. Payments should reflect the true value of the land and property, including its cultural and emotional importance. Independent monitoring groups can help ensure that compensation is handled honestly and fairly. This can build trust

between communities and project authorities.

Third, local people should receive support to improve their livelihoods. Training programs and skills development opportunities can help residents find jobs during construction and after the project is completed. Special attention should be given to women and young people to make sure they also benefit equally from employment and development opportunities. Providing access to education and professional training can strengthen long-term economic stability in the community. Finally, basic services such as healthcare, clean water, sanitation and housing should be improved, especially for communities that have been resettled. Strong systems for community participation and conflict resolution are also necessary. When communities can openly share their concerns and participate in decision-making, problems can be solved more easily. Overall, careful planning, fairness and active community involvement are key to ensuring that large dam projects support sustainable and balanced development.

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Institutional Review Board Statement

Before collecting data, the researcher asked for permission from the village or ward Chiefs. Approval processes differed depending on local leadership practices. The study followed ethical standards by explaining the purpose of the research, ensuring confidentiality and obtaining consent from participants.

Informed Consent Statement

Informed consent was obtained from all participants involved in the study. Participants were informed about the purpose of the research, their rights to participate voluntarily, and their ability to withdraw at any time without any negative consequences.

Data Availability Statement

The data will be available on request from the writer.

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Conflict of Interest

There is no conflict of interest.

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