NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF HUMANITIES

DEPARTMENT OF DEVELOPMENT STUDIES

DAM'S RESTORATION PROGRAM ON THE SOCIO-ECONOMIC LIVES OF PROJECT-AFFECTED PERSONS AT METOLONG, LESOTHO.

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A DISSERTATION SUBMITTED TO THE DEPARTMENT OF DEVELOPMENT STUDIES IN ACCORDANCE WITH THE REQUIREMENT FOR MASTERS OF ARTS IN DEVELOPMENT STUDIES

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NUL **OCTOBER 2023**

DECLARATION

I, Mathuso Majoro, declare that this research report is my own work except indicated in the references and acknowledgements. It is submitted in accordance with the requirement for Master of Arts in development studies in the University of Lesotho.

ACKNOWLEDGEMENTS

I would like to thank the following people, without whom I would not have been able to complete this research, and without whom I would not have made it through my master's degree!

Special appreciation goes to my supervisor Dr Mokone 'Musi, whose insight and knowledge into the subject matter steered me through this research. The residents of Metolong, who took the time to attend to my interviews and allowed me into their homes for follow up questions, and without whom I would have no content for my thesis.

Additionally, this endeavour would not have been possible without the generous support from my supervisor at work 'Masetori Makhetha, who stood by me throughout this whole journey.

My colleagues at the Lesotho Lowlands Water Development Project II, for their support and guidance during this journey.

I would be remiss in not mentioning Ms Nthame Monare, and Boithatelo Morojele who have supported me and had to put up with my stresses and moans for the past two years of study.

Lastly, my biggest thanks to my family especially my mother 'Mants'ebo Mots'oari for all the support you have shown me through this research, the culmination of two years of learning. For my kids, sorry for being even grumpier than normal whilst I wrote this thesis!

And for my husband Tumo Majoro, thanks for all your support and sleepless nights, without which I would have stopped these studies long ago. You have been amazing.

ABSTRACT

The purpose of this study is to assess the socio-economic impact of the Metolong Dam restoration program on the affected community's livelihoods. Lesotho has in recent years experienced several constructions of bulk water projects, with the latest being the Metolong dam and reservoir. These projects are normally embedded with differing impacts on the affected communities, highlighting the need for compensation on those affected. Compensation is usually based on loss of land and other different assets.

However, cash compensation for such resources has been condemned for failing to restore the welfare of communities removed from their lands and losing livelihood resources. The LHWP restoration package was largely based on a long-term compensation bundle to those affected, while Metolong restoration package provided a once-off cash transfer package accompanied with a capacity building program meant to enable affected people to create profitable livelihoods. Although Metolong's compensation package was meant to be different to that of LHWP, anecdotal evidence shows that affected community livelihoods have been negatively affected.

The findings of the study revealed that the construction of Metolong dam and reservoir had adverse impacts on the societies residing in close proximity to the project site. The dam was expected to deliver many socio-economic benefits to the affected communities. However, it was determined through the findings that the project had limited positive impacts on the livelihood of the affected communities leaving them further impoverished.

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ABBREIATIONS AND ACRONYMS

ACL	Angelical church of Lesotho
ADB	African development bank
DDP	Dams and Development project
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
GoL	Government of Lesotho
HDI	Human Development Index
GoRSA	Government of Republic of South Africa
HIV/ AIDS	Human immunodeficiency virus/Acquired immunodeficiency. Syndrome
LECSA	Lesotho Evangelical Church of Southern Africa
LHDA	Lesotho Highlands Development Authority
LHWC	Lesotho Highlands Water Commission
LHWP	Lesotho Highlands Water Project
OECD	Organization for Economic Cooperation and Development
MDGs	Millennium Development Goals
SADC	Southern African Development Community
UNCED	United Nations Conference on Environment and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WF/ FAO	World Food Program/Food and Agriculture Organization

Chapter 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction of the Study

This chapter presents background to the study, introducing the challenges of large dam development projects in developing countries lately and how some of these challenges have been addressed to bring about innovative livelihood restoration to the affected communities. Hence, this chapter introduces the challenges brought by large dam development projects in Lesotho recently. The chapter further presents how Lesotho has tried to develop innovative restoration programs to avert the challenges encountered during the early dam projects, including those of Katse and Mohale Dams initiated by the Lesotho Highlands Water Project (LHWP). Following the brief introduction, the chapter presents the statement of the problem followed by objectives, research questions, and the significance of the study and an outline of the whole study, respectively.

1.2 Background to the study

In other regions of sub-Saharan Africa, where communities face challenges of securing food, shelter, and healthcare, events that compromise further the people's livelihood continue to be rigorously overlooked (Arthur, Mohapi, and Mitchell, 2011). Lesotho is one of the 15 Southern African Development Community (SADC) members. It is a landlocked country surrounded by South Africa, making it dependent on South Africa. Poverty is acute, mainly in places where bulk water projects are constructed (Azubuike, 2006). According to

Braun (2011), Lesotho have great quantity of water resources, as a result, it has earned the phrase “white gold”. The government has therefore opted to invest in bulk water projects that can swiftly produce earnings in the form of royalties for the country, from exporting water to other countries, as has been the case with the Lesotho Highlands Water Project (LHWP) (Central Bank of Lesotho, 2003).

Matli (2005) states that the commercialization of water in Lesotho commenced with the project of LHWP and the sale of water to South Africa is projected to contribute about 14 percent of government’s revenue. Additionally, the sale of water contributes about 25 percent of Lesotho’s total annual export revenue and 5 percent of its GDP. Kabi (2022) designates that by the end of 2021, Lesotho earned about M12, 8 billion for selling 17,507.4 million cubic meters to South Africa. Despite the overall earnings from the project, Mochebelele (2000) argues that for the duration of the building of the project in the first phase, 3,000 jobs were produced with wages worth of R275 million. Braun (2010) designated that the initial objective of the LHWP was the sale and transfer of water from Lesotho to the industrial areas of South Africa. The project's second objective was to construct a hydroelectric power station that permit project's second objective was to construct a hydroelectric power station that permits the domestic electricity production in Lesotho. Additionally, Braun (2010) states that one other vital aim of the LHWP comprised of the development of tourism, fisheries, and other social and economic projects.

Based on Scudder (2006), bulk water projects comprise substantial social and economic impacts, with most prominent impacts being displacements, social

dislocation, and loss of livelihoods means of production on areas affected. This was also the case with LHWP, which according to Braun (2011), had a documented obligation that indicated that the project should not allow the worsening of the affected people's present standards of living. Based on Sechaba Consultants (2000, cited in Braun) the areas where LHWP projects are located in communities that are said to be isolated and very poor in Lesotho, and these communities are usually characterized by elevated poverty as well as unemployment. To substantiate the fact, Tshabalala and Turner (1989:34) have stated that "during the commencement of the LHWP, about 60 percent of households in both Katse and Muela were below the average income for each area and were considered very poor".

Consequently, Scundder (2006) stated that the first phase (1A) of LHWP caused significant losses to the livelihood of about 20 500 Basotho rural dwellers. Various family units suffered quantifiable damages to their assets and properties, where some people lost agricultural fields. This factor consequently regarded them as officially being affected by the project. In that case, those who were officially affected by the project were arranged to obtain a compensation package from LHWP. The compensation package was intended to aid households who had suffered the losses due to the project. For those who had agricultural losses, the compensation policy articulated that their compensation amount will be based on the criteria of what thy lost, whether a garden or a field (Monwa, 2014).

Monwa (2014) further added that the LHWP criteria on compensation articulated that land utalised for agriculture purposes regarded also as 'garden

size', or less than 1,000m^2 was remunerated through once-off sum. However, the criteria for compensation disregarded the crops on the specific pieces of land and their use or even the comparative meaning of those crops to the household livelihoods. Regarding the fields deemed larger than 1,000m^2, those affected were scheduled to receive for fifteen years and on annual basis a stipend or food packages with the intention of replacing what the households were receiving from the fields (Monwa, 2014). LHDA (2002:1124) outlined that for Phase (IB) of the project, there was an issue of resettlements. The compensation package in Phase 1B was largely based on assisting the displaced persons "in their efforts to improve or, at the very least, restore their living standards in terms of income generation capacities and to gain access to valued resources and social benefits such as health, education, water and so forth".

Despite the objective of the restoration program of LHWP, the overall compensation scheme of LHWP was met with many criticisms from the affected persons. Based on Monwa (2014), LHWP had very inadequate progressive influences on the livelihoods of the villagers. This is based on the affected households complaining that the compensation did not adequate the damages they incurred due to the project. Those affected indicated that they lost their livelihoods, their customary assets, the alterations of social relations in their communities and the appropriate stakeholder analysis in favour of those affected. Others stated that they lost their animals as well as their loved ones due to drowning, where those in close proximity to the project site experienced earth tremors which caused their houses crack and collapse.

Based on Kotelo-Molaoa (2007:50) those affected by the LHWP further criticized the compensation as being inadequate, stating that the land taken by the project was an asset that can be inherited through generations and generations. Those affected further stated that the "LHWP compensation, on the other hand, has a time frame of 50 years." Consequently, affected households felt that their properties were marginalized by the project as the compensation system also was limited to a time frame of 50 years and to a claimant whom the agreement turns null and void if they die (Kotelo-Molaoa, 2007). Ramaili (2006) on the other hand pointed out that added to the disruption of livelihood, then, the compensation usually comes late or never at all, and sometimes the wrong person gets compensated. In addition, whereas land can now be developed with new technology to provide a higher yield, the compensation does not take into account the intrinsic and extrinsic value of the land. The compensation was further criticized for having issues where to some it was late, some could not receive it even though they were scheduled to receive it.

Owing to these criticisms, the bulk water projects that were implemented in Lesotho after LHWP, including the novel Metolong dam intended to implement livelihood restoration strategies that will restore the project-affected persons' standard of living to the better state or even the state they were pre-project implementation (Diaho and Molapo, 2022). In this case, Metolong strived to be different from LHWP, not only in project planning but also in implementation. This means that not only was the focus on development, but the plan was also based on the improvement of the welfare of those that were to be affected by the project in all its phases. The

fundamental act of achieving that was based on the project engaging the local people fully on the project phase of feasibility by allowing them to have an opinion on the decisions especially in planning, implementation, as well as the evaluation phases of the project, a detail that was much overlooked by the LHWP (Kotelo-Molaoa, 2014).

Thus, based on the KOL (2022), the Metolong Dam and Water supply program is a project known as comprising a dam and raw water pump station, associated water treatment works, and conveyance systems to support domestic and industrial water supply. According to World Bank (2019), the Metolong Dam and Water Supply Program (MDWSP) is the first in a series of investments that provide the least cost, long-term solution for bulk water supply to Maseru, the lowland areas of 'Zone 4', and the town of Teyateyaneng (TY) in 'Zone 3'. The Metolong Dam, along with the associated water treatment works and infrastructure, increases the water supply capacity of Maseru and surrounding towns by 75,000 m3 per day. On top of the existing supply in Maseru, this will ensure a secure supply of 120,000 m3 of water per day to meet increasing domestic and industrial requirements in Maseru with the towns of Roma, Morija, and Mazenod in 'Zone 4' of the lowlands and TY in 'Zone 3' (World Bank, 2019).

Consequently, during the pre-construction phase of the Metolong dam and reservoir, the project initiated different approaches compared to the one by LHWP, with regards to the livelihood restoration programs for affected persons. This was based on the fact that the project works were focused mainly on the extension of existing water supply and sanitation infrastructure,

operations and maintenance capacity building as well as hygiene promotion which were not going to result in the relocation of affected communities (Sekamane, 2018). However, the project still affected people's livelihoods, as people around the project site lost their properties. Subsequently, the compensation scheme was initialised, and unlike the LHWP where compensation commenced after the construction of the dam, the Metolong dam and reservoir project implemented compensation disbursements during the project's initial stage.

So, the livelihood restoration package was based on the World Bank's social policy framework and directives as the World Bank was one of the main sponsors (AfDB, 2020). The policy directive stipulates that the objective of the World Bank is to help ensure that disadvantaged and vulnerable groups are not further disadvantaged by the developments and get access to developments (World Bank, 2020). Therefore, it is specified that the organization that is executing the project must make certain that regardless of any issues that may rise, the welfare and the livelihoods of those impacted by the project shall not be reduced from the welfare and the livelihoods those affected had before the project. The World Bank (2020) further added that the policy directive also highlights that reimbursement in bulk water projects has to regard affected person's rights or even their use of the land, ensure their freedom is not compromised, fishing rights or other rights whatsoever shall be paid by the Bank in accordance with the law(s) of Lesotho (World Bank, 2020).

Consequently, when the construction of the Metolong dam and reservoir was finished, it became indispensable to fathom in some level, how the livelihoods

of those affected by the project were impacted by the construction. It was especially essential due to the issues that arose on the bulk water projects in Lesotho, especially of LHWP based on the livelihood restoration program as well as the compensation systems that were deemed faulty and less impactful. This is because LHWP livelihood restoration was reported to have failed to rejuvenate the livelihoods of the PAPs but perpetuated impoverishment, which was regarded as the main risk of dislocation (Diaho and Molapo, 2022). As a result, the Metolong project had to come up with risk prevention and social safeguards measures in its livelihood restoration program.

Although there is a plethora of studies conducted on bulk water projects in Lesotho with the recent including the studies by Sekamane (2018), Hoover (2011), Sephula (2011) and many others. Studies on the impact of compensation packages by Metolong on the livelihood of affected persons are non-existent and the innovations recommended among others by the World Bank have not been assessed whether they significantly depart from previous compensation programmes.

1.3 Statement of the problem

The LHWP restoration package was largely based on a long-term compensation bundle to those affected, while Metolong restoration package provided a once-off cash transfer package accompanied with a capacity building program meant to enable affected people to create profitable livelihoods. Although Metolong's compensation package was meant to be different to that of LHWP, anecdotal evidence shows that affected community livelihoods have been negatively affected.

1.4 Purpose of the study

The purpose of this study is to assess the socio-economic impact of the novel Metolong Dam restoration program on the affected community's livelihoods.

1.5 Objectives of the Study

This study intended:

- To assess the livelihoods of the community at Metolong Reservoir before the dam construction.
- To analyse how the restoration programme has affected the livelihoods of the community at Metolong Reservoir.
- To find out the impact of the restoration programme on the affected community's social life around Metolong reservoir.
- To examine the impacts of the restoration program on infrastructure development in the community around Metolong Reservoir.

1.6 Research questions.

1. How has the livelihood of the community at Metolong been before the dam construction?
2. How has the restoration programme affected the economic livelihoods of the community?
3. What has been the impact of the restoration programme on the community's social life?

4. What are the impacts of the restoration program on infrastructure development in the community?

1.7 Justification of the Study

The available research studies on the topic were mostly concerned with the perceptions of the communities around LHWP projects regarding the impact of livelihood restoration programs of the said projects on their livelihoods. This is because the program had hugely impacted those affected through resettlements. Thus, for mitigation, compensation schemes were integrated and had a time frame of about 50 years. However, the Metolong water supply program completely diverged from the method, as not only did it keep the resettlements minimal, but it also tried to focus more on improving the livelihoods of the communities by trying to augment the welfare aspect of the rural dwellers through provision of electricity for communities as well as provision of certain skillsets and healthcare to the areas affected by the project.

1.8 Structure of the Study

Chapter 1: Chapter one provides the overview of the study.

Chapter 2: Chapter two entails the body of literature regarding the problem.

Chapter 3: Chapter three provides methods employed during the course of the study.

Chapter 4: Chapter four is the research findings and discussions.

Chapter 5: Chapter five includes a conclusion that links the overall findings as well as the literature together and some recommendations are made.

1.9 Summary of the Chapter

This chapter provides an overview regarding assessing the socio-economic impact of the novel Metolong Dam restoration program on the affected community's livelihoods. The next chapter reviews the literature utilised for this study.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter is based on the literature review based on the research questions, objectives, and the aim of the present study. The chapter entails four sections, and the first section is based on the theoretical framework. In this section, the theory supporting the study is reviewed. The second section focuses on reviewing literature based on the research questions and the last section provides a summary of the chapter.

2.2 Theoretical Framework

The theory that underpins this study is the sustainable livelihoods approach. The African Development Bank (2004) indicates that the approach was initially presented as a development concept by the Brundtland Commission on Environment and Development. Eventually, the 1992 United Nations Conference on Environment and Development stretched the concept, while hopeful for the accomplishment of sustainable livelihoods as a broad goal for poverty eradication. Then, the theory was pioneered by several scholars that included Chambers and Conway (1992) as well as Scoones (1998).

The premises of the Sustainable Livelihoods Approach (SLA) indicate that it is an approach aimed at improving knowledge regarding the forms of livelihood of those regarded as poor or impoverished. In this case, this approach is used to draw attention to the vital issues that impact the livelihood

of the poor, while also highlighting the distinctive features and the relations between these issues. Thus, SLA can be used as a tool to plan new development activities and can be used as an assessment tool which can be used to evaluate the involvement of the prevailing activities in sustaining livelihoods (David and Jonathan, 2009).

Based on Bhuiyan, Siwar, Ismail, and Talib (2011), the SLA puts the rural poor at the centre of a web of interlinked issues which have an effect on how the rural poor generate livelihoods for themselves and their households. Thus, close to the said people at the centre of the framework is the resources and livelihood assets that they have access to and use. The resources and assets can include natural resources, technology, individual skill sets, knowledge and capacities, well-being, access to education, sources of credit, or networks of social support (Bhuiyan *et al*., 2011).

In this case, the poor people's ability to get hold of the said resources is largely inclined to their vulnerable backgrounds, which can take into consideration different forms and developments (for example, economic, political, and technological), shocks (for example, epidemics, natural disasters, civil strife) and seasonality (for example, prices, production, and employment opportunities) (Bhuiyan *et al*., 2011). Therefore, with SLA, access to assets and resources is also based on the influence of predominant societal, institutional, and political environments, which have an effect on different techniques that people use to attain and employ so as to realise their goals. A term development practitioners refer to as livelihood strategies. This means that SLA does not substitute other existing strategies that may include, for

example, participatory development, sector-wide approaches, or integrated rural development (Bhuiyan *et al*., 2011).

However, SLA serves as a linkage between the poor and their general support setting which encourages the results of the livelihood strategies (Bhuiyan *et al.,* 2011). Based on Ahmed, Siwar, and Idris (2011), SLA also conveys consideration to bear on the integral perspective of the poor especially the rural poor with regards to their skillsets, social linkages, as well as their ability to get hold of means that can be in either financial or physical form. SLA also highlights the rural poor's capabilities in terms of influencing central institutes.

Thus, Allison and Ellis (2001) articulate that there are three perceptions of poverty that reinforce SLA. The first one is based on recognizing that even though economic growth may be crucial in the process of reducing poverty, the relationship between economic growth and poverty is not instinctive, as everything is contingent upon the capacity of the poor in being able to perceive the benefits of increasing their financial prospects (Allison and Ellis, 2001). The second perception highlights the view that poverty as perceived by the poor is usually not only based on a question of low income, it further takes into account the other scopes as well.

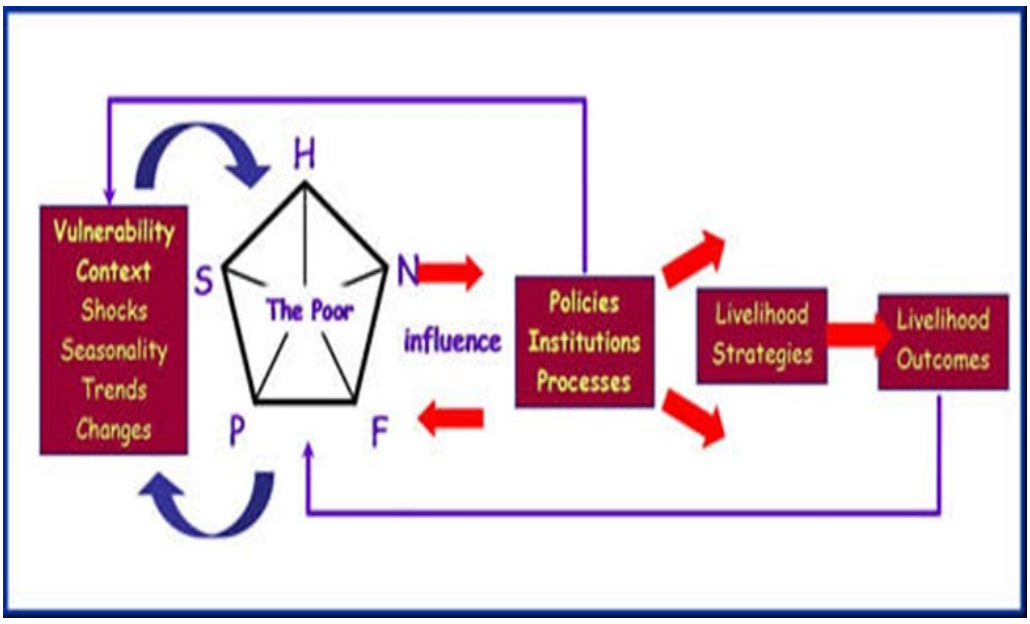
Different scholars have also debated on how SLA could be used with regards to poverty alleviation, and Seekings (2017) noted that there is no unified approach to applying the SLA. This is because depending on different development agencies it can be utilised mainly as a methodical and instrumental framework used to plan programmes or to assess the said programmes. Accordingly, Seekings (2017) designates that there are three

basic features common regarding the utilisation of the SLA. In this case, the initial feature is that in the utilisation of SLA, the emphasis is mainly based on the source of revenue of the poor.

Secondly, the SLA discards the typical system of predictable methodologies that take an entry point on a set route that may include the agricultural sector, water, or healthcare. Finally, based on Seekings (2017), the SLA greatly emphasizes taking into account the poor people and thus putting them at the center while identifying and implementing the activities of the development projects. As a result, in this regard, the SLA is comparable to other approaches that may include the Integrated Rural Development approach in several ways.

In this case, figure 2.1 below clearly illustrates how SLA is a systematic instrument useful in raising the value of the means of living (livelihoods) and how these means of living interact with different institutes such as the state and private sector. DFID (2000) articulates that to be able to attain sustainable livelihood results, there has to be an increment in revenue, maintained well-being, reduction of vulnerable states, and improvement in security. The ability of farmers to withstand the externalities (shocks, trends, and seasonality) positively impacts their livelihood outcomes.

Figure 2.1



Source: DFID (2001)

Different scholars have used SLA to study rural livelihoods as they are affected by mega projects including. In Lesotho, Kotelo-Molaoa (2006), Hoover (2006) and (2009) has focused on the World bank's failed efforts in restoring the welfare as well as well as the livelihoods of the people who are affected by bulk water projects in Lesotho through utalisation of SLA. On the other hand, Vanclay (2017), Amankwah (2021), Kabra (2018) have utalised SLA to study the livelihoods of the affected persons in various developing countries in Africa. Furthermore, Dires *et al* (2021), Coulibaly and Li (2020), Schmit et al (2021) and Phuc et al (2021) also used SLA to study the livelihoods of people affected by mega-projects outside Africa.

The utilisation of the SLF in this study is important because it has been approved by different scholars on the basis that it is substantial in providing

analysis as well as the background regarding the livelihoods of the poor rural dwellers so as to develop the efficiency of livelihood-related support (NZAID, 2006). The framework is indicated to be helpful in offering a clear information on the setting of the poverty caused by development-induced issues through concentrating on various of issues which directly or indirectly decide, or limit affected person's attainment of resources of various manners, thus their livelihoods. Thus, adopting the SLA is important for this study because it is stated to offer encouragement to those who adopt it as it assumes an extensive as well as a logical assessment of aspects that are root for impoverishment. SLA is also important for this study because it determines what limits people's livelihoods and explores associations amongst various livelihood attainment methods.

2.3 Restoration procedures and challenges in infrastructure projects

Based on World Bank (2012) it is the responsibility of large-scale projects to implement compensation system that ensures transparency and consistency to households affected. The World Bank (2012) further adds that in cases where the livelihoods of those affected by the project are primarily based on land or in cases where land tenure rights are communal, the project is inclined to compensate those affected by land if viable. In this regard, the project is expected to acquire the required land and the resources on the said land only after those affected have been offered reimbursement for the acquired land. In situations where people are affected by the project through resettlement, it is also the responsibility of the project to provide, on top of the compensation,

those affected funds that will aid in their move to the places they are resettling to (World Bank, 2012).

On the other hand, ADB (2007) has suggested a double model strategy regarding the policy of compensation in terms of estimation and the reimbursement regarding land expropriation. The first model indicates that reimbursement standard to those affected must match the market value as the foundation of 'just compensation'. In this case, the general method offers a definition of the market value by the "willing buyer, willing seller model, given the situation where choice exists." On the other hand, the second model is based on the costs incurred in the process of replacement cost. This approach is based on the level of compensation that will be sufficient for affected persons to replace their lost land with land of equal value or comparable productivity (ADB, 2007).

Countries usually have compensation standard policies where a new compensation standard calculation method for people affected by large-scale projects is constructed so as to alleviate their livelihood vulnerability, and to provide scientific and effective decision support for the design of relocation policy (Nguyen, Heged˝us and Nguyen, 2019). Coulibaly and Li (2020) noted that the compensation standard policy, especially on compensation at replacement cost, includes the actual cost of asset replacement plus associated transaction costs and fees. In this compensation standard policy, if replacement land is not readily available, replacement cost may consist of an amount of cash considered to represent a fair compensation for the land based on the anticipated price of the acquired land at some future time. AfDB's (2022)

compensation standard policy highlights the aim of relocation and resettlement as improving displaced persons' previous living situation, their ability to earn an income, and the concerned construction stages.

However, literature suggests that just like many livelihood restoration efforts, compensation is another factor that has been indicated to have failed in restoring the economic lives of the affected persons. This is articulated by Cernea (2018), arguing that compensation though is significant in both theory and practice, on its own is inadequate and incapable of achieving refurbishment and upgrading of the livelihoods of those affected by bulk water projects. This is against the outlook of the World Bank (2012), which has indicated that large-scale projects must implement compensation where the standards of living of the people are restored, and the livelihood of the persons affected is transformed from the state it was once at. The negative effects of compensation are also emphasized by Sephula (2011:73), stating that "the compensation paid to the people relocated due to development projects does not make up for the lost agricultural resources which include farmlands, forests, fields, and grazing lands."

Additionally, compensation in developing countries also perpetuates inequality. Based on Scudder (2005), it has been articulated that women are usually the ones that that are largely impacted by adversarial problems of bulk water projects as compared to men. This is based on that compensation payments are normally paid to the heads of households who are usually men. Evidently, this means that the shared possessions of the household are transformed into money that is paid to men, thereby leaving women and

children at higher risk of deprivation (Scudder, 2005). Additionally, in a lot the instances, the standard used to measure admissibility for compensation does not always take into account women, mainly in patrilineal societies where women are considered as minors (Rao and Kelleher, 2005). As a result, Hoover (2001) has emphasized that households that are headed by women which normally range from 20% - 40% of the affected families, mostly undergo such hurdle policies.

Thus, the study by OECD (2018) regarding whether the compensation has allowed the participants of the study to take care of their families, the findings showcased that participants who are recipients of compensation struggled to restore their livelihoods and take care of their afterwards. Additionally, the findings of the study revealed that despite being inadequate, compensation systems are also indicated to be gendered. Based on OECD (2018:29), "such gendering of a hydro-social space involves the examination of multiple relations, between women and men, and men and men within their environment. A focus on pluralities of position and marginality." On the other hand, the study on Guatemala Chixoy Project shows that women were impacted excessively as women usually largely depend on assets owned collectively.

The case studies conducted in African and some of the Asian countries especially "China and India" have demonstrated the fact that compensation as a system used by bulk water projects to rejuvenate the economical lives of those affected by those affected has been ineffective. Also in China, the study by Jun (1997) studied the life in three resettlements of the Xin'anjiang,

Sanmenxia, and Yongjing. Through these studies, Jun (1997) established that those affected by displacement usually acquired insufficient compensation and thus, they were in bad state economically as compared to their counterparts who were not affected by the project. Similarly, based on the findings by the study of McDonald (2006) on resettlements in Kelera, it was revealed that greatest number of displaced households were not content with the sum of compensation meant to refurbish as well as augment their living standards (McDonald, 2006).

Thi, Kappas, and Wyss (2020) noted that construction of bulk water projects often appears to incur displacement, and the displacements usually ranges from just families to villages or even towns. In cases where the displacements have happened, the expenses are often reported to be poor or very good and no relocation process has ever been reported to be totally excellent. However, Scudder (2005:154) and Chen (2020:358) posted the benefits of resettlement by asserting "that resettlement can bring improvements in the living standards of those affected by displacement through improving access to social services like health facilities. This can be achieved through the careful selection of relocation areas and by introducing new production techniques to increase per capita income without depleting the natural stock available locally."

OECD (2018) indicates that people being displaced also often grants an excellent prospect of improving the people's quality of life economically, especially those from the households that are affected by the project. The attribute of success in this case often lies in a well-constructed relocation programme. This is because the relocation programs are expected to offer those

affected by the projects an option of moving to newer types of livelihoods, as well as new locations that can allow them to thrive in terms of relationship development. The fundamental factor based on a need to present those affected by the bulk water projects is to allow them to augment their capacity to have better lives as compared to the ones they had in the past (Thi *et al*., 2020).

However, Kamla (2014) noted that without proper assessment regarding the appropriate methods that can be used to restore the livelihoods of those affected through various methods, dislocation programs often emanate failure. In that case, appropriate assessment means utilization of various methods to exhaust all the attributes. Additionally, one other factor that often causes the failure of displacement based on OECD (2018), is that displacement programmes usually concentrate largely on the actual procedure involved in relocation as compared to the economic as well as social aspect of resettlements. These failures are often due to pitiable as well as partial implementation. Accordingly, building of large water projects has caused the expropriation of lands that often maintained the welfare and the economic lives of those affected by the projects (OECD, 2018).

Based on WCD (2000), the study conducted in India portrayed that 75% of the livelihoods of those affected by the project have not been restored, leading to many living in poverty. About the same results were established in Indonesia where the study's findings showed that about 72% of the 32 000 people resettled due to the project reported increased deprivation after the resettlement (WCD, 2000). On the other hand, the study conducted in Tonga said that the people who were relocated, especially women, had concerns with the

sedimentary gardens that they were using for survival as they felt attached to them and regarded them as necessary due to being passed down to them through their matrilineal system (WCD, 2000).

Based on Mathur (2011), individual resettlement project components vary enormously in size and complexity. Some may affect only 200-300 people, while the most extensive operations move tens of thousands. In India, the Bank-assisted Upper Krishna II Irrigation dam project must resettle some 220,000 people and the Maharashtra Composite Irrigation III project has 168,000 people. In China, the Shuikou project has displaced and resettled already close to 70,000 people, and the recently approved Xiaolangdi Dam project has 181,000 people. In Indonesia, the Jabotabek Urban project displaces nearly 30,000 people.

2.3.1 Impacts of the restoration program on people's livelihoods

It has been stated by Coulibaly and Li (2020) that the construction of bulk water projects can impact indigenous populations directly or indirectly and the effects can either be positive or negative. The effects of the project often occur during various stages of the project where the sectors which may include the planning stage, the building as well the operation stage in downstream or upstream of the project. In agreement, Scudder (2005) also observed that building of bulk water projects in developing countries has had faults due to many circumstances raised by the damaging effects left on those affected by the projects. In this case, there is the suggestion that the benefits that are left because of the construction have been overemphasized while the damaging effects are undervalued (Scudder, 2005). As a result, De Satgé (2002)

estimated that about 1.7 billion people are impacted by the construction of bulk water projects in developing countries and the number is projected to increase to 5 billion by the year 2025.

Dires *et al* (2021) indicate that during the construction of dams, people are sometimes affected through involuntary resettlement, and this is where the affected households suffer loses on their houses, land, crops, animals, or economic activities which are the basis of their livelihoods. Adding to that, Coulibaly and Li (2020) articulate that construction of large development projects that include hydroelectric dams, roads, and mining often sometimes results in economic losses or gains for the affected communities. The same point was raised through the indication that the relations concerning bulk water projects as well as other forms of developments appears to be debatable because large-scale water projects have so often delivered adverse social, environmental, and economic effects to many and significant gains for only a few (Aspinall, 2007).

On the benefits of large-scale development projects to affected communities, scholars that include Schmidt, Gilbert, Holtemeyer, and Mahrt (2021) noted that bulk development projects have previously been linked with forms of expansions and growths to the affected communities. While also, large-scale development projects have been said to be focused on striving to offer empowerment and sustenance to both men and women whose livelihoods are affected by the project while also at the same time being able to attain fruitful results. Large-scale projects capitalize considerably in affected communities

by providing developments as well as various skill training, and many more others (Coulibaly and Li, 2020).

One of the benefits attached to large-scale development projects is entrepreneurship. Dires *et al* (2021) denoted that it is assumed that all large-scale projects go along with development of small and micro-enterprise activities. This is because the SMEs aim to provide goods as well as the related services to large-scale projects companies, the communities, and their families. This factor is said to lead to augmentation in individual income while also taking part in a country's general development (World Bank, 2005).

On the other hand, it has been indicated that there has been an expectation that large scale development projects need to provide jobs, create employment, and expand the economy of the country and the community they are established in (Holden, 2007). It is further highlighted that the compensation policy in several different countries mandates large-scale water projects companies to be able to produce employment for communities close to the project directly and indirectly. Direct job creation means jobs can be provided on the construction as well as the operating phases (Holden, 2007). On the other hand, Holden (2007) further stated that the indirect form of job provision is based on an increase in demand of different input materials used by the project. The indirect employment creation is also based on the rise in demand of various goods and services that are needed by the workers at the project site.

Enhancing the same point is Grassi, Landberg, and Huyer (2015) who posited that job opportunities by large-scale development projects have to be available in various stages of the project that include, the launching of the feasibility

studies, before the construction, in duration of construction, and after the construction. McMahon and Remy (2001) further added that in the starting years of the large-scale water project activities, members of communities in proximity with the project are often employed in non-skilled jobs where they can offer inexperienced services in the construction. A similar fact was raised by Richter, Postel, Revenga, Scudder, Lehaner, Churchill, and Chow (2010), asserting that many people are often offered jobs during the construction of large-scale development projects, and this often aid people working in the construction of the projects in terms of attaining income, improving welfare and being able to take part in poverty alleviation of the country.

Reports from big institutions that include the Asian Development Bank and Dams (2006) and the World Commission on Dams (2000) confirm that the construction of large dam projects like the Kariba and Grand Coulee dams, led to the employment of 10,000 and 15,000 workers, respectively. In Accra, Ghana, Oduro (2010) identified that peri-urban residents in proximity with the project were able to assume complete benefits with regards to various job positions that were provided by large scale development project, a factor that consequently aided them in improving their livelihoods. However, a study on the Yangtze River Basin conducted by Zhao, Chi, Gao, Duan, and He (2021), established that the livelihood restoration program by them did not deliver that much employment opportunities for adjacent and affected communities.

With the experiences of other development projects like the Yangtze River Basin, it has been established that the creation of job opportunities is not always the case for large-scale projects (Zhao *et al*., 2021). Wen, Fang, Li, and

Su (2022) indicate that in large-scale development projects, the requirement of creating job prospects for local communities is not always the case. This is based on the view that jobs provided by large scale development projects are not usually provided based on them being for the whole community, rather they are usually for the individuals in the community. Of the same views are Chen, Dou, and Xu (2020), who noted that the development of large-scale development projects is normally based in rural areas where there is usually an influx of unskilled labour, however hiring criteria for large-scale development projects is usually focused on skilled labour.

Expanding on the aforementioned point, Sekamane (2018) established that while planning process as well as the design phase, companies doing consultation often reap benefits when they offer employment highly qualified employees that possess greater level of experience that allows them to carry out the tasks of dam planning as well as designing. Sekamane (2018) further states that throughout the construction phase, the selected contractors normally opt to employ an extremely experienced workforce, while inexperienced workers are offered positions that do not require skills. During the operations and maintenance phase, experienced workers are still needed to guarantee dam-built function as expected (Sekamane, 2018).

Some academic literature brings forth divergent debate about whether large projects like dams contribute to economic development of adjacent communities through cash transfer with one side arguing that cash transfers of any kind are regarded as fundamental in the process of restoring the livelihoods of those affected by the projects. This is because it provides members of the

community affected with means that enable them to reconstruct and improve their family income after they have lost land (Moola, 2019). Based on Bailey and Harvey (2011:9) “a cash transfer can also be used as a means of financial support for assisting affected households in livelihood reconstruction. The common principle is that households that have lost a larger share of their agricultural land than others need to receive more support.”

Similar to Bailey and Harvey (2011), Thi, Kappas, and Wyss (2020) realised that just like the compensation for loss of land rights, it is understood that the system of cash transfer can have a huge contribution on the economic aspect of those affected by the dam construction projects. Consequently, the link between the amount of financial support and household income is hypothesized to be positive. As such, Oxfam (2020) articulates that the cash transfers are usually disbursed at a fixed time where those affected by the projects are due to the losses they suffered, whether on their land rights or the assets on their lands. In that case, the cash transfer is projected to recover the livelihoods of the household as well as the opportunities that may develop their welfare options or at least rejuvenate the livelihoods of those affected.

Furthermore, Oxfam, (2020:13) has articulated the several different types of cash transfers. In this case, the indication is that “cash transfers include conditional and unconditional transfers, and between transfers with restrictions and without restrictions.” Thus, based on Bailey and Harvey (2011:91), “cash transfer interventions for livelihoods may seek to act on various levels and on different components of the sustainable livelihoods framework, although the

majority of cash transfer programmes for livelihoods focus on capital rather than on technical, political and strategic advocacy activities."

Unlike Bailey and Harvey (2011), UNDP (2017) further added that cash transfer programmes for livelihoods allow those affected by the project the opportunity to fund the development of support reinforcement. The process can take place over subsidizing the benefits to social welfare schemes which can be "temporary community jobs, access to insurance systems, and many more." Also, cash transfers aid in the process of aggregating information at household, community, and local level about related problems (cash for capacity-building, conditional "grants", and many more). On the other hand, Elluard (2015) articulated that cash transfers are for strengthening existing livelihoods and/or diversifying sources of income and food, cash for work for the protection, creation, or strengthening of assets and/or infrastructure, and many more.

Even though cash transfers are said to be one of the viable means of livelihood restoration utilized by bulk water projects, there is a sizeable part of the literature arguing that evidence indicates that they are not always effective means. Phuc, Western, and Zoomers (2021) illustrated that the link concerning the amount of cash transfer and the lost land, the income is hypothesized and indicated to be negative. Similarly, emphasizing the negative effects of cash transfers, the study by Moola (2019) established that in most cases even though cash transfers were made, most of the affected people complained that they could not subsist on the cash they received due to lack of abilities and information required to develop other means of livelihoods. Unlike the

previous studies, Coulibaly and Li (2020) emphasized that the affected persons could not also manage their amounts of money properly.

This literature shows that cash transfers come with many challenges to communities that lost their land as the International Finance Corporation (2013) indicate that some of the farmers who are granted cash transfers as a means of compensation for their lost crops as well as farmlands are not usually reciprocated by what they have lost and are expected to opt for other economic activities to source livelihood. Unfortunately, it is later revealed that life becomes extremely tricky as they cannot produce a survival on the newer adventures due to a lack of capacity and appropriate skillsets. Reinforcing the point is the study by Phuc, Western, and Zoomers (2021), where the findings established that compensation package in the form of cash was inadequate and thus, did not permit those affected by the project to launch plans. This is based on that far little people who managed to utilize the compensation fund articulated that they were able to establish income generating projects with the money. However, they complained of the projects as not being useful in restoring their livelihoods due to their inability to run the projects appropriately to maximize the results (Phuc *et al*., 2021).

2.3.2 Restoration programme and affected community's social life.

Bulk water projects are said to have a large impact on the society in either a negative or a positive way (Ansar *et al*. 2014). In agreement with Ansar *et al*. (2014), Lord (2016) indicated that the social influences of development of large dams have caused social disruptions in many societies where people were displaced, relocated, and their sources of living were damaged, a factor that

has led to the social status of affected areas to change drastically. Evidence showcases that the social effects of construction of bulk water projects has been homogenized, resulting in many social effects of dam construction around the world being undermined around the globe (Verhoeven, 2011). Ahram and Goode (2016:367) also indicate that "the development projects thus are one of the reasons behind the increasingly observed woes and agonies of local people where the project sites are found."

One of the fundamental social influences of restoration programs of the construction of dam projects is displacement and resettlements. Vandergeest (2003:45) noted that the longitudinal setting of bulk water projects is fundamentally about reorganizing space, and as a result, "all the development has the potential of causing displacement." Based on Cernea (2000:144), a model for population displacement and resettlement shows that "more than 200 million people have become directly or indirectly affected by development projects in the last two decades of the twentieth century. Most notably the displacement of people from their land are at the center of the problems created by development projects in general, and the construction of dams in particular." Of the same view is Dwivedi (2002) stating that resettlement is involuntary in situations whereby the households affected by the construction cannot contest the effects such as being displaced or resettled? Consequently, forced resettlement is indicated to be embedded with austere adverse impacts on social as well as cultural safety of those affected by the project.

Yntiso and Ohta (2005:76) explicitly states that "the concept of displacement is more holistic and integrative than most other terms." To them when referring

to dislocation, the meaning is stressed by articulating the various phases of turbulences and distractions caused by the construction on local communities. In that case, those distractions are normally embedded in those affected over spontaneous removal from their common environments. To Gebre and Ohta (2005:16), "the word displacement, unlike migration, resettlement, dislocation, and relocation, is not directly related to geographical movement only. It is holistic for it includes not only geographical movement but also the effects that displacement has on the basic livelihood and means of survival. When people are exposed to such a state of disturbances in their social lives, they may look outside their communities for better opportunities to cope with the threats brought by development projects."

Additionally, the empirical review indicates that the construction of dams leaves adverse social effects on the societies involved. According to Mathur (2011), in the past 5 decades, it has become clear that grand-scale infrastructure and development projects do not necessarily result in general greatness. Participants in this study reported an increase in poverty levels among the victims. Consistent with an empirical review of Cochester and Mathur (2011), it is correct to argue that large-scale displacement of people and inadequate resettlement programs have resulted in the socio-cultural impoverishment of communities, which has left them psychologically and culturally traumatized especially the tribal and rural communities that constitute the majority of such affected populations.

Beside displacement, dam construction may lead to migration with dire social consequences. Based on Viebahn *et al* (2011) migration of the human

population is a common phenomenon. Similarly, Esteves *et al* (2012) state that people have always migrated from one place to another in search of better avenues of livelihood. Also, according to UNDP (2014), migration takes place when people of a certain area have to leave their homes, professions and migrate to other places in search of new homes. Thus, large-scale migration occurs wherever dam reservoirs are constructed. Some of these people manage to get absorbed in the nearby area while others move out in search of alternative jobs. Most of them migrate to already crowded cities and larger towns, where they can earn to sustain themselves (Esteves *et al*., 2012).

On the other hand, in many countries, the belief that being closer to the project site increases the likelihood of securing employment drives migration toward the project site (Kassahun, 2001). To adequately expand on the point, Munday (2017), Gaede *et al* (2018), and Batel (2015) have highlighted that large scale development projects play an important part in this in-migration phenomenon. However, Munday (2017), indicates that most of these new entrants to project areas cannot afford proper living space and therefore, end up in slums. This is because, from these centers, in-migrants use existing and newly developed access routes to reach the villages and towns closest to the project site or project base camps. The development of new access routes and setting of projects at the road head creates feeder routes leading to and concentrating in-migrants at the heart of the project area of operations (Munday, 2017).

Kirchherr *et al* (2016) articulates that, slums develop as a result of people thinking that it is easier to get a job the closer you are to the project site, the main physical (and subsequently social) in-migration footprint will likely

develop as close as possible to the project site, base camp and/or service and supply center. Unlike Kirchherr *et al* (2016), Bailey and Harvey (2011) designate that slums develop when people use established means of transportation and access routes, migrants arrive at the larger towns within the project area and either settle there or continue to move toward the project site, usually the nearest office or camp. On the other hand, Aman *et al* (2016) further highlight that slums develop typically with the rental of a shack, room, or house from a local resident or securing access to land upon which to build a simple shelter. While the greatest rates of population growth occur in these locations, the actual physical and social impacts of this growing population are determined by the rate and magnitude (or scale) of in-migration, together with the assimilative capacity of the area.

Consequently, the infiltration of a large number of people entails implications for the local community (Araya *et al*., 2019), significantly impacting the health of the local population and the project workforce. Adding to the point is Chen *et al* (2012), illustrate that increased use of and demand for already inadequate community housing, water, sanitation, food, and medical services can mean that health needs go unmet and new health challenges arise. Also, Di Maddaloni and Davis (2017) have similar points of view, stating that rapid influx may significantly alter existing levels of communicable diseases, including respiratory problems, diarrheal diseases, vector-borne diseases such as malaria, and sexually transmitted infections, by introducing "new infective" and increasing the number of people who might spread illness.

Datta and Shaban (2016) state that community and regional-level disease control programs for illnesses such as malaria, tuberculosis, and HIV/AIDS, may be overwhelmed by the increasing cases, while demand for maternal and reproductive health services may significantly outpace existing local services and infrastructure. This is because the influx of urban job seekers into rural areas may also significantly alter the burden of non-communicable diseases, such as diabetes, hypertension, or cardiovascular diseases, on local medical services that are ill-equipped to deal with this spectrum of problems (Datta and Shaban, 2016).

Large-scale in-migration may also have unintended impacts on local cultural heritage, including the violation and destruction of sacred sites. Both violation and destruction can negatively affect relations between migrants and their "host" communities and serve as the basis for social unrest that may also affect the project (Klukckhohn and Basrowi, 2005). Colchester (2000)'s paper points out that the experience of affected people with dams has been characterized by cultural alienation, dispossession of land and resources, lack of consultation, human rights abuses, and a lowering of living standards. Adding to the issues brought about by the construction of large-scale projects in affected communities and in migration, is also the issue of increased social problems, such as alcohol and drug abuse or domestic violence, which may also increase in the host area (Chen *et al*., 2012).

Terminski (2013) specifies that project development may lead to a significant and permanent change in many factors of the community, and this can be social, cultural, or even the political environment of the project area of

influence. In agreement, Chakrabarti and Dhar, (2009) opine that beyond competition for resources, services, and utilities, the rapid influx of workers and their families can profoundly impact the social and cultural fabric of local communities, threatening their values, norms, and traditions. McGee (2010) also adds that the new population dynamics may undermine or change existing social structures, including authority structures, leadership, and representation leading to unnecessary social conflicts. Turton (2006) states that large-scale development projects may lead to changes in the social structure of the community through the dilution of social cohesion and cultural disruption.

The development and construction of large-scale projects also bring about many other social issues in affected communities. In this case, Afreen *et al*, (2016) highlight that influx populations may hasten the introduction and/or increased expression of vices such as prostitution, gambling, alcoholism, and drug use, which can have significant negative social impacts and consequences. Of the same outlook is Datta and Shaban (2016), who specifies that the construction of large-scale projects increased criminality, conflict, and violence, and declining law and order may also present additional social challenges for both local communities and the project.

Based on Colchester (2000), Cernea (2000), and Tan (2008), indigenous peoples are particularly vulnerable if their lands and resources are transformed, encroached upon by outsiders, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also be threatened by such major changes. As a result of their unique place in society, indigenous people are vulnerable to different types of risks and severity of impacts,

including loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and disease (Tan, 2008). Based on UNDP (2017) many indigenous cultures and identities are inextricably linked to the lands on which they live and the natural resources on which they depend. In many cases, their cultures, identities, traditional knowledge, and oral histories are connected to and maintained through the use and relationships with, these lands and natural resources. To add on that, Oliver-smith (2006) and Koenig (2011) observed that the impacts of land and resources may also be considered sacred or have a spiritual significance.

2.3.3 Impacts of the restoration program on infrastructure development in the community

Positive Impacts

Lessons from many studies suggest that infrastructure is synonymous with economic development. Roads, railways, and utility systems are needed in every economy, and the lack of infrastructure services signals barriers to growth and underdevelopment (ADB, 2008). Jones (2006) notes that infrastructure development promotes inclusive growth and reduces poverty by creating additional jobs and economic activities. Also, infrastructure development is important for the development process, particularly in reducing production and transport costs through improved transport and connectivity; expanding overall production capacity; connecting markets and other economic facilities that may extend beyond the country. Jones (2006) further adds that infrastructure development is important and very useful in improving access to key facilities such as health, education, and other basic services.

When development takes place and the economy is strengthened, there will be a direct or indirect impact on all aspects of life (Downing, 2002). As a result, Hentschel (2003) states that with the implementation of developmental projects, one positive change that takes place regularly is the change in lifestyle. Hence based on Lord (2016), it is a common scene that wherever a development project starts new living arrangements appear even before the project is commissioned. This is because firstly, the workers who must erect the project need housing facilities at a convenient site so that much of their time is not wasted in travel between their residence and place of work. Thus, large increases in the number of people residing within the project area can strain public infrastructure, services, and utilities (Wolsink, 2018). Consequently, Lord (2016) and Wolsink (2018) highlight that a project may be unexpectedly requested or pressured to significantly contribute to the construction, renovation, and maintenance of new infrastructure, services, and utilities.

Licarion (2021) indicates that the establishment of large-scale development projects often involves the construction of new infrastructure and services which may benefit the local community. For example, roads, high-speed internet cables, shops, restaurants, and social services can be used by both the new workers and the locals (Licarion, 2021). Taking the point further, Gopalakrishnan (2004) viewed that sometimes these large-scale development projects can revitalize “withering” areas, as they bring new people and more activity to nearby town and village centers, which can be perceived positively by the members of those communities. Echoing other scholars, Gilmour, Wiesel, Pinnegar, and Loosemore (2019) argued that companies can contribute

to education directly, for example by providing better access through infrastructure investments. Dam construction companies may also invest in training programmes that can benefit both their workers and local communities.

In recent times, there has been a growing focus on the development of infrastructure to assist in meeting the needs of communities affected by the construction of dams, particularly in Africa. It is estimated that 64% of the total population of Africa relies on water resources that are limited and highly variable and 75% of the continent's cropland is located in arid and semi-arid areas, where irrigation can greatly improve productivity and reduce poverty (Vorosarty *et al*., 2005 and Smith, 2004). To mitigate the effect of large-scale infrastructure development, governments have attempted to provide infrastructure at various levels of community development (Vorosarty, Douglas, Greenand, Revenga, 2005). Further noted is that the responsibility of providing infrastructure for the project-affected people lies at the doorstep of project implementers (UN-Habitat Report, 2011).

In the case of Ghana, various resettlement infrastructures have been provided by the project implementers at several resettled sites. Some of the infrastructure provided for these resettled communities range from classrooms, clinics, road network, electricity, and boreholes to waste management facilities (Gilmour *et al*., 2010). Additionally, in Ghana, other forms of Physical assets such as road and communication networks are also considered important for the development of sustainable restoration programs for the communities. McDonald (2006) suggests that the length of the road in each area is an

indication of whether PAPs have access to markets to sell products or find work. The PAPs' use of roads and specifically transport vehicles along routes canals or reveal their capacity to access markets.

Several studies lend support to the affected communities (Girmay, 2006). For example, in Buiand Gyamadam construction, heavy investment resulted in the construction of 12,671 core houses, 81 school blocks containing 404 classrooms and 46 markets, and installation of 63 water supplies. The contraction of 512 miles of laterite road and 95 miles of street; and the evacuation of 12,479 families. These infrastructure investments played a very important role in the lives of the Project affected people who saw many children for the first time close to a primary school and less difficult than before to access health services (UN-Habitat, 2011).

In addition, in the case of the Kpong Hydroelectric Dam construction project constructed in 2017 with the support of a World Bank loan (with a US$39 million) to the government of Ghana (World Bank, 2017). About 4,597 people living in 55 small villages situated along the east and west banks of the river and on the islands were affected, together with about 1,100 people living in the township of Lower Kpong. In all about 7000 people were resettled. The agency that was responsible for the implementation of the resettlement package included social amenities such as health centers, schools, road networks, and markets (World Bank, 2017). In this case, the livelihood of the project-affected people was to be restored through a Livelihood Enhancement Programme (LEP) (WorldBank, 2017).

Electricity is another service usually provided by large-scale development projects in developing countries. This is because electricity can have broad impacts on economic opportunities and quality of life (World Bank, 2008). This is because providing affordable and reliable access to electricity services is one way to lower the costs of establishing and growing businesses that can raise income opportunities (Brookes and Stone, 2010). Balisacan and Edillon (2005) provided evidence of the importance of rural electrification in reducing poverty in the Philippines, where the proportion of households without electricity is about 30%. They show that rural electrification results in high economic returns, and they note that its impact on the poor can be greater than other comparable investments.

Negative impacts

Different international organizations have illustrated the impact of development projects on affected communities. In this case, the World Bank (2004), African Development Bank (2011), UN-Habitat (2009), and SADC (2010) indicate that development projects such as dams, mines, industries, roads, power plants, and others need vast tracts of land for setting up and expansion of existing infrastructure. A typical thermal power plant of 1000 megawatts would need about 800 hectares of land. Usually, the lands to be acquired for such projects are already used for different purposes like residential, agricultural, business, public utility, and others. The persons utilizing these lands for living, cultivating, and practicing any other activity, may need to give up the activity and thus lose the land and structures thereon,

for the project. These persons are therefore affected adversely or negatively and are called Project Affected Persons (PAPs) (Horta, 2020).

At the same time, less obvious and yet extensive effects of infrastructure are overlooked. For example, infrastructure such as a power connection, water pipe, and irrigation channel create service grids and produce fragmented spaces of inclusion and exclusion. It can also work to raise land prices, negatively affecting already marginalized communities. These tacit effects show that infrastructure does not only cause dispossession but also underpins social and power relationships that affect the workings of institutions that manage and govern the infrastructure (Otsuki, 2016). Indeed, controversial infrastructure that entails eviction and displacement undoubtedly indicates distributional inequity. At the same time, the scholars would argue that the ways that the marginalized communities are forced to accept the infrastructure without having much say about their wishes show a more fundamental problem of 'procedural inequity' (Bergmans *et al*., 2015).

2.4 Chapter Summary

The chapter reviewed the literature on dam restoration programs on the socio-economic lives of project-affected persons. The literature discussed the economic, social as well as socio-economic effects on infrastructure. These elements are narrowed, and they all connect with each other. The discoveries likewise attract consideration regarding the need to comprehend the implications.

Chapter 3

METHODOLOGY

3.1 Introduction

This chapter presents the research approach as well as the empirical methods used in this study. The section offered a summary on how data was acquired, the sampling method used, and the data collection and analysis methods. The sampling method employed is purposive sampling, and the main data collection techniques that were employed are the interviews and the key informants and observation. The main data collection techniques for this research project comprised in-depth interviews. The data analysis was done thematically using the themes generated from the data.

3.2 Research approach

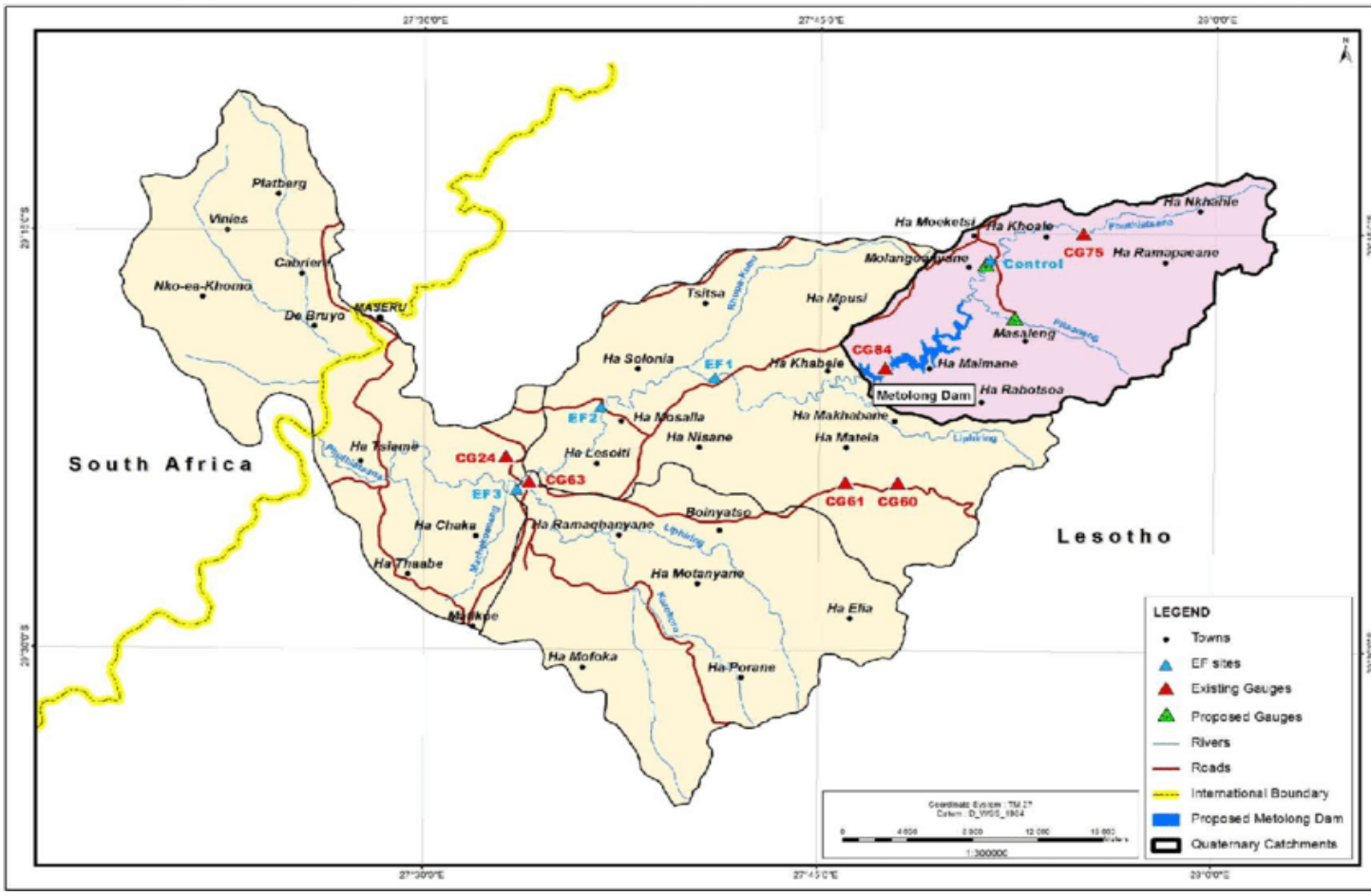
Creswell (2014:136) states that "research approaches are the plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation". In essence, the research approach is largely constructed on the setting of the research problem the research project seeks to address. This study is qualitative research and, therefore, follows systematic procedures. According to Babbie and Mouton (2012:270), "Qualitative research is a generic research approach that takes its departure from the insider perspective." The benefit of utilizing the qualitative approach is based on the fact that it "stimulates understanding of social phenomena and studies phenomena in their natural setting." The basis of

choosing qualitative approach is based on its relevance as the aim of the study is to assess the dam's restoration program on the socio-economic lives of project-affected persons at Metolong in their setting, with the aim of gaining in-depth information as qualitative research allows.

3.3 Research design

Durrheim (2004:51) defines a research design as “an overall idea of linking conceptual research problems to relevant empirical research. The research design fundamentally enunciates what data information is required, what methods are to be utilized to collect the data, and how all of these are going to answer each research question”. There are different research designs which are also utilized by various types of studies (Durrheim, 2004). The case study research design was used for this study. Based on Durrheim (2004), “A case study is used when the researcher wants to focus on how and why; the behavior to be observed not manipulated, to understand a phenomenon in detail and when the boundaries between the context and phenomena are not clear. Phenomenology is used when researchers want to describe, in-depth, the common characteristics of a phenomenon that has occurred.”

3.4 The study area



(Source: Wilson, 2020)

Metolong and livelihood restoration

This study was carried out at the Metolong Dam construction site. The dam was constructed in the South Phuthiatsana River in the lowlands of western Lesotho, about 35 km from Maseru. The river is a tributary of the Caledon River and sources its water in the highlands of Lesotho. The Metolong Dam and Water Supply Programme, as the project is known, comprises a dam and raw water pump station, associated water treatment works, and conveyance systems to support domestic and industrial water supply. The storage area spans the districts of Maseru and Berea. The Project area itself is much larger

since it will supply water to the capital city of Maseru and the towns of Teyateyanang and Roma, while the indirect effects from water abstraction from the South Phuthiatsana River may affect downstream water users as far as the confluence with the Mohokare (Caledon) River.

3.5 Population

"A research population is a well-defined collection of individuals or objects known to have similar characteristics (Crossman, 2020:80)". Therefore, the study population involved thirty-one (31) villages around the Reservoir site.

3.6 Sampling technique

According to Babbie and Mouton (2012: 62), "a sample is only an integral part of the group to provide the researcher with needed information". Thus, this study used non-probability sampling. "Non-probability sampling is a sampling technique where the samples are gathered in a process that does not give all the individuals in the population equal chances (equal probability) of being selected. Subjects in a non-probability sample are usually selected based on their accessibility or by the purposive personal judgement of the researcher (Mugera, 2013:41)."

This research study utilized purposive sampling. According to Neuman (2007:245), "purposive sampling is used in situations where an expert uses judgement in selecting cases with a specific purpose in mind." Brink, Van der Walt, and van Rensburg (2012:189) state that "through the purposive sampling technique, a sample is selected in a deliberate manner whilst keeping the purpose or focus of the study as pivotal to the sampling. Sampling decisions

must revolve around whom to interview, what to observe, in which settings, and by which processes". The basis for selection of purposive sampling method is largely due to the different attributes the population as well as the objective of the study. Crossman (2018:77) state that "there are seven types of purposive sampling (heterogeneous, homogeneous, typical case, deviant case, critical case, total population, and expert sampling)." Consequently, this study mainly focused on the heterogeneous sampling method.

"The heterogeneous method is the type of purposive sample selected to provide a diverse range of cases relevant to a particular phenomenon or event. The purpose of this kind of sample is to provide as much insight as possible into the event or phenomenon under examination (Crossman, 2018:77)". The researcher precisely selected the purposive-heterogeneous sampling method due to the study needing people with various backgrounds, who speak their opinions based on their knowledge and personal experiences of livelihood restoration programs.

3.7 Sample

"Theoretical saturation is the qualitative procedure for sampling in which the researcher continues sampling and analysis until no new data appears and all concepts in the theory are well developed (Morse, 2013:48)". Dworkin (2012:355) suggests that "participants anywhere from 5 to 50 are adequate for a qualitative study." For this study, the researcher felt that twenty-two (22) subjects were adequate to reach it.

3.8 Recruitment Strategy

The researcher applied to the Faculty of Humanities in Development Studies department for an ethical clearance letter to conduct the study. Furthermore, the researcher applied for permission from the paramount chief of the Metolong construction site (gatekeeper's letter) to use communities around the Metolong construction site as participants. Both applications required full approval for the researcher to continue with the study. The researcher then went to Metolong dam construction site residences, went door-to-door, and explained the research project to the community in order to get the participants that would be interviewed. After the researcher identified the participants at all villages, times, dates, and venues were set with the participants for both the in-depth interviews section of the research.

3.9 Method of Data Collection

"Data collection entails the gathering of data to address those serious evaluation questions that the researcher had identified earlier in the evaluation process (Peersman, 2014:25)". This research project utilized primary data gathering. According to Crossman (2020:69), "primary data is original information collected for the first time while secondary data is information that has been collected previously and that has been obtained by means of literature studies."

The study collected primary data, where in-depth interviews and observations as well as the key informants' interviews were used. Babbie and Mouton (2012:207) postulate that "depth interviews are most appropriate in complex situations and for studying sensitive areas because they give the interviewer

the opportunity to prepare the respondent before asking sensitive questions and explain complex ones in person."

The interviewer used observation to collect data regarding the surrounding project site. In this regard, the intention was to record the developments in the affected communities as well as the state that those who were affected were living in. The researcher also used the key informants, being the village chief as well as the counselor as they are the ones who knows firsthand the lives of the people who are affected. All interviews were conducted in both Sesotho and English because the researcher was able to interact with people of various social statuses and feet can best extract rich data by letting participants express themselves however they feel comfortable. All parts of Sesotho were translated and duly transcribed into English.

3.10 Data analysis

"Data analysis is a process whereby a researcher adopts a strategy to reduce data to a story and its interpretation and is the process of reducing large amounts of collected data to make sense of them (Crossman, 2020:105)". Therefore, the data analysis method implemented by the study for analysis the gathered data is the thematic analysis approach". The basis for choosing thematic analysis for this study is that qualitative research is a main design of inquiry which considers developing backgrounds to cluster data and then look for relationships (Sunday, 2013). The researcher used the following thematic analysis steps:

Steps for Thematic Analysis

- Familiarize yourself with the data once the data is collected. The researcher will re-listen to audio tapes and read transcripts a few times to enhance familiarity.
- Generate initial codes - Organize data relevant to each code and relate it to the theoretical approach.
- Discover themes/ search for themes - Discover themes that are linked to the study, review and name these themes.
- Writing the analysis - Researcher provides an analytic narrative based on the data that were collected from the participants.

3.11 Ethical Considerations

Fouka and Mantzorou (2011:197) state that ethics refers "to a system of principles which can critically change previous considerations about choices and actions. It is said that ethics is the branch of philosophy that deals with the dynamics of decision-making concerning what is right and what is wrong". "In relation to scientific research, ethics refers to human actions that are ruled by a person, community, and social standards. It involves requirements on daily work, the protection and defending of the dignity of subjects, and the publication of the data in the research (Fouka and Mantzorou, 2011:197)". All ethical considerations were adhered to the rules and regulations to protect and give privacy to all participants.

All participants signed an informed consent form but were informed of their right to withdraw from the research project at any given stage of the process. Participation was voluntary as no one was forced to do or say anything. Each

participant's identity was protected by confidentiality and anonymity. This technique ensured the protection of the participants by using 'fictional names' rather than the participants' true identities. A request for an ethical clearance letter to conduct the study, as well as a permission letter written to the paramount chief's Office to obtain a gatekeeper's letter, was listed as part of the ethical considerations for the study.

Chapter 4

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings as well as the interpretation and discussion of the findings based on the objectives and aim of the study. The first section addresses the impact of Metolong restoration packages on the economic lives of the affected communities, followed by social impacts. The last theme presented and discussed is the impact of the restoration on the infrastructure. The chapter will therefore, like all other chapters, end with a chapter summary.

4.2.1 The socio-economic situations in the community before the restoration programme

Data gathered shows that the affected communities were mostly involved in agriculture activities, which for some were commercial while for others were for the most part subsistent. However, there were various sources of income in the communities. The most prominent source of income was from remittances they received from their loved ones who worked in the neighboring countries.

Participant 4, a young woman whom her household was affected by the project stated that:

"My mother was working in south Africa to support me and my siblings before the project, but after she was compensated, she established her sewing business (P4)."

The data gathered further highlighted that the communities affected by the projects were living in poverty due to numerous participants citing they did not work and were excited for the prospects of job opportunities upon hearing about the project. Participant 10, a full-time farmer said, "*We were very excited when we heard about the project because we thought we were going to get jobs"* (P10).

This means that the state of poverty also added to other socio-economic problems that included a lack of proper roads which allowed the villagers to travel long distances to reach their destinations, a factor that constantly put them in danger. Participant 2, a contractor, and a farmer recalled that:

> *I once worked at Moshoeshoe I airport a long time ago in a construction company. So, one day I was coming from work, and it was summer. I had thought maybe I would be able to make it home in time before it was too dark, but unfortunately, I underestimated the distance and it got dark very fast. I decided to take a short cut by walking through a primary school and unfortunately because of the darkness, I could not see properly so I fell in the ditch. I was afraid to yell for help, so I stayed in there until morning so I could ask for help. I have always wondered what I could have done if that ditch was filled with water (P2).*

The findings of the study depict that the communities affected by the project lived in hardships and poverty before the Metolong project commenced, substantiating the fact that poverty is acute mainly in places where bulk water projects are constructed (Azubuike, 2006).

4.2.2 Economic impacts of dam construction at the community around Metolong.

From the information gathered, agriculture emerged as the major economic activity among the community in Metolong. Most participants stated that they were involved in agriculture as their primary source of income. Participant 1, a farmer, and teacher, pointed out, "*I am a teacher, but to add on my income, I have always been involved in agriculture*."

Even though Participant 1 cited agriculture as a form of livelihood diversification, other participants stated that agriculture was the only livelihood they have ever known and practiced. The following codes from participant 2, an unemployed single mother of 6 and participant 3, a full-time farmer, buttressed that agriculture was the only form of livelihood that majority of those affected by the project from Ha-Makhale and Ha-seiso ever knew, confirming that agriculture was a very important form of livelihood before the construction of Metolong dam:

"I grew up with my parents' practising agriculture, and that is where we made our living, so naturally I ventured into agriculture when I grew up." (P2).

"My family were major agriculture producers in the 1980s; we afforded everything through agriculture. It would have been foolish to move on from it and focus on something else." (P3).

Despite the importance of agriculture to the Metolong community's livelihoods, the participants stated that the compensation for the lost agricultural activities did not adequately fulfil their needs. Firstly, they

explained that the dam limited their livelihood diversification because the project took their land. Secondly, the project failed to keep promises making participants like participant 11, a full-time farmer to affirm that the compensation they received was not enough and was not what they agreed upon with the project, which caused further economic problems in their lives.

> *I was supposed to get a certain amount of money as compensation, but the money I received was way less and smaller than the amount we agreed on. This brought so many problems because I had initially thought of buying another piece of land where I would continue with my agriculture activities. However, due to the inadequate funds that I received I was not able to buy any land.* (P11).

Thirdly, the restoration compensation was late, making its recipients disappointed about it as it caused them to live without any form of livelihood, which caused them to accumulate debts. Participant 9, a full-time farmer expressed the concern in this way:

> *The compensation was so late, but in the meantime, I was not allowed to plough or use my land because we already had an agreement with the project. That means in the time I was waiting for the compensation; I was stranded without any form of income since I have always been dependent on agriculture.* (P9).

The affected persons also cited that due to inadequate and late compensation, they were never able to completely recover from their debts, a factor that pushed them further into poverty. Participant 15, a retired teacher stated that

the late compensation from Metolong dam construction left them with many debts that they struggled to pay even after the project was completed.

"I got into so many debts due to late compensation money and despite that the compensation money was already small. I have never recovered from the debts even after I have received the money." (P15).

The fourth category that emerged was the restoration program failed to generate employment opportunities despite promises made before the commencement of the dam construction. However, views differed regarding employment opportunities. There was a group of participants who felt that the Metelong project failed to generate employment opportunities highlighting that the project had initially promised the community that they would get employment during the construction of the dam. The participants articulated that during the feasibility stage, they had communicated to the project authorities that they did not need much from the project other than being employed, so that they would be able to make income and take care of their families. However, the promise was later deflated on the grounds that the available employment was only for those who had skills and qualifications.

Several participants expressed their disappointment concerning the unfulfilled promises in this way: *"I was so excited when I heard about the project, because I thought they were going to employ us" (P4,* full time farmer*).*

But data revealed that the excitement did not last long leading to other participants showcasing that there were very few people from the community employed on the construction site, *"I can count on one hand the people that I know that were employed on the construction site." (P2,* full time farmer*)*.

The same sentiments were expressed by other participants showing that the Metolong project failed to compensate them with employment opportunities. Participant 12, an unemployed young woman stated, *"There were really not that many people who worked at the construction site who came from the village" (P12).*

On the other hand, there a group of participants who felt that the project was not a total failure concerning employment opportunities stating that they were able to sell food and miscellaneous items to the construction workers and they were able to diversify their incomes as participants 7, a young woman and participant 4, unemployed father respectively said:

"I was selling cooked sheep head and feet with steamed bread on the construction site." (P7).

"The project allowed my daughter to sell the fast food at the site." (P4).

In addition, participants revealed that they took opportunity of having many workers at their area to generate self-employment opportunities*, "I was selling cigarettes and other miscellaneous items, and they were doing really well" (P 10,* self-employed male*).*

While participant 2, unemployed single mother articulated that: *"I opened a small shop, and it has been open since the construction until today."* Other participants showed that they engaged in property rentals saying, *"I was renting my house to the laborers who worked at the site." (P6*, an NGO employee and a farmer*).*

Some of the participants stated that they used the compensation money they acquired from the project and started businesses that enabled them to revive their livelihoods to a better state. Participant 9, a woman whom her household was affected by the construction stated that their mother was able to start a sewing business with the compensation money and from the money acquired in the sewing business, their needs were provided for.

The issue of capacity building was also one of the aspects of the novel restoration program of Metolong dam construction. The study revealed that the capacity building program failed also. Participant 10, a retired teacher articulated that:

"I feel like the capacity building program provided by the Metolong project was really a waste of time and resources, it really did not help the affected community that much." (P10).

The participants stated that the capacity building program was not useful to them as many who followed it failed to create impactful livelihoods. As a result, their compensation funds got depleted without them establishing any form of livelihood. Participant 3 who was involved in a pig rearing project that was suggested by the capacity building program stated that the endeavor was not as fruitful as it was depicted.

> *We were given training on how we could raise pigs for the market and how they could help us make a living henceforth. However, we saw after we raised the first batch that the task was in no way as economical as the project has sold it to be. Firstly, there was no active market that could*

buy pigs at reasonable prices. The second reason was that it was more money consuming to raise pigs rather than ploughing.

The participants also stated that they felt as though the capacity building program offered as part of the Metolong livelihood restoration program failed because it disregarded what could be useful and economical based on their village. They stated that rearing poultry might have been a productive economic activity somewhere, but it was not in their community due to lack of market and many other aspects. In that case, the participants believed the livelihood restoration program was useless.

The participants also stated that the capacity building on the restoration program did not aid those displaced in attaining sustainable livelihoods because of inadequate funds that did not allow them to start anything productive with the money. Participant 8, a full-time farmer, stated that they could not do anything productive with the money as it was small.

The findings of the study thus depict that agriculture was one of the fundamental sources of livelihoods in the affected communities of Ha Makhale and Ha-seiso but was not adequately compensated. This observation is confirmed in the literature where it is argued that rural dwellers losing land is severely treacherous to their livelihood far more than losing a house or other means of property (McGeen, 2010; Gebre and Ohta, 2005). The findings revealed that the compensation had many limitations and failed to restore many livelihoods, as a result many affected persons were pushed further into poverty and debts.

Moreover, the findings also established that the livelihood restoration program failed to create meaningful livelihoods to the adjacent communities due to the nature of the project mirroring what other scholars have found in other contexts and places (Chen *et al*., 2020; Zhao *et al*., 2021). The findings further show that one aspect of the livelihood restoration program that showed success is the creation of business opportunities, substantiating that bulk water development projects usually enable rural dwellers to create a lot of start-ups providing the workers as well as the communities with their needs and different everyday supplies (World Bank, 2005; Dires *et al*., 2021).

4.2.3 The impact of the restoration program on the affected community's social life

The study's findings discovered that the social relations in the communities at Ha-Makahle and Ha-Seiso were normal and peaceful before the dam's construction. The study participants cited that before the project commenced, they lived in peace and harmony, and could maintain that peace until the project started. Participant 9 relented that the life they lived allowed them to have close relations and usually guarantees peace amongst the community members.

"As a result of our community being in rural areas, we have closer relations and that can work in both ways where we are always in disputes, or we are always in peace. Lucky for us it was the latter." (P9).

However, the findings of the study revealed that the construction of Metolong came with many social ills that prohibited the community at Metolong from

sustaining the same peaceful and harmonious environment they had before the project. The first category that emerged from the data was related to disputes. The participants stated that there were disputes between the community members and the construction workers. This was especially articulated by community leaders who stated that they had to mediate disputes between community members who complained of extra-marital relations between their loved ones and the construction workers. One of them explained:

> *There was one community member who came to us and complained that their wife was having an affair with the construction worker who was working at the site. This issue became so immense that the community member with the claim was threatening to kill the worker, so it got to the point where project managers at the construction site had to relieve the worker of their duty and sent him back home (*community leader).

It was revealed through the findings of the study that the restoration program of Metolong did not entail any pre-emptive measures that can help dissolve the disputes between the community and the construction workers whenever they arise. Consequently, the maintenance of social relations was vested upon the community leaders only. In that case, the participants also stated that there were different strategies that helped them maintain peace in the community even after the project had been constructed. Participant 7 stated that the community has always opted for solving the disputes immediately after they happen saying:

"Our community has always believed in solving matters promptly if they arise within the community. That means we never gave people time to build resentment in their hearts, which has worked well for us." (P7).

The findings also showed the issue of diseases, especially HIV and AIDs, that emerged as the second category which the participants felt was not adequately compensate. The data revealed that there was an increase in HIV and AIDS in the communities closer to the project site. The participants stated that there were no measures articulated in the restoration program based on the effects of the influx of migrant workers in the village. But the findings revealed that there was a connection between the spread of diseases and extra marital relations that emerged leading to some participants to say:

"*There were rumors of teenage girls as well as young women who were in relationships with the foreign project workers.*" (P15).

Anti-social behavior especially substance abuse emerged as the third category which the participants felt it was not properly compensated explaining, "*There were places that were selling alcoholic drinks, and they would always be filled with the workers and young people, and it is here where sexual relations were formed."* (P16). Participants also explained how drug abuse lured young girls saying:

> *Our children are attracted by material things that include money and cars, being in the rural areas made most of our children lack when it comes to that. Therefore, many of our children gave themselves to the project workers and as a result they got into relationships that left them sick, with babies that they can't take care of. (*P1*).*

The participants explained the effects of the social problem initiated by project haunted the community long after the completion of the project describing them in this way: *"One of my nieces was one of the girls who were in a relationship with the foreign man who worked at the construction site, and they ended up having a baby. After the project finished, the man went home and never came back. The girl got sick and died leaving the child as an orphan.*" (P17).

Noise in its different forms emerged as the last category that haunted the community and which they felt was not adequately addressed by the restoration package. The participants revealed that the restoration program did not entail any noise preventive measures as heavy machinery was used at the construction site. As a result, the participants indicated that the noise brought about many disruptions in their daily routines. The following code summarizes the impact of the noise on the lives of the people in proximity with the project site.

Participant 3 said, *"The noise was so unbearable that my animals were always scared."*

While participant 8 stated, "*During the beginning when the project was just starting and there was drilling, there was so much noise that we could barely hear each other through the noise."*

Lastly, the community leader stated that. "*The noise was so much that people waited for the evening after work hours to have gatherings."*

The findings revealed that another form of noise that affected the communities near the project site is the traffic noise, which also needed compensation. The study revealed that due to the construction, there were many cars going up and down and this was a phenomenon in the area of study. Participant 11 stated the issue of traffic noise was disrupting stating, "*one other concern was traffic, there was a lot of noise of cars going to and from the construction site day and night and it was a distraction because we have never had that much traffic in our villages before."* (P11).

The findings further revealed that one other category of noise that came with the construction that also required compensation was the noises from the drinking places. The participants indicated that there was noise that emanated from places that sold beer, especially during weekends and at the end of the month. Participants 17 explained that:

> *The project affected the peace and tranquility that we used to have especially on weekend when we wanted to rest, there would be a lot of noise from the drinking places, and it was especially immense at the end of the month when construction workers have received their payments.* (P17).

The findings of the study showcase that any social issues were appropriately managed by both the project workers as well as the community since they did not impact the project completion. However, the findings reveal that the constructions left the affected communities with many social ills due to the migration of foreign migrant workers. The study shows that there was a rise in different social issues that included social disputes, noise and diseases

especially HIV and AIDS. The findings are supported by Di Maddaloni and Davis (2017) and Chen *et al.* (2012) who stated that the development of bulk water projects often causes rise in infectious diseases that may include respiratory diseases as well as sexually transmitted diseases.

Although other studies have shown that project affected communities are compensated (De Satgé (2002); Dires *et al* (2021); Coulibaly and Li (2020)), the findings of the study has shown that there are aspects that are not adequately taken into consideration when restoration packages are formulated and implemented. Hence, the finding nullifies the notion that that Metolong Project came with a 'novel' restoration package.

4.2.4 Impacts of the restoration program on infrastructure development in the community

The findings depict different opinions by the participants regarding the infrastructure developments brought by the dam's construction. The study's findings revealed that the livelihood restoration package of Metolong dam included infrastructure developments for the affected communities. The findings revealed that Metolong dam was able to build a road stretching from Maseru across Thaba-bosiu and many other developments that included electricity and clean running water were made easily accessible by the Metolong dam project.

Some of the participants thought the infrastructural development changed their lives for the better as their lives were difficult before the infrastructure developments. Some of the participants stated that there was positive

development. Participant 11 stated that they believed the developments that were done by the project were the responsibility of the government, but the government was very slow in achieving saying:

> *This project allowed us to have things that we would still have been fighting the government to bring to our village. We were able to have a fully functioning road, we have water, we have electricity, and we can use proper toilets. In other places, people were able to get to clinics, some places the police stations were renovated to greater conditions, all because of one project. I think the project did well, way better than any government we ever had or even a political representative.* (P11).

Some of the participants revealed that the Metolong Dam and Reservoir provided important and meaningful infrastructural development to their livelihoods stating that the developments were better than compensation package. This was especially emphasized by participant 9 who was directly affected by the Metolong dam construction and received the compensation package describing the difference thus:

> *All the infrastructure developments were a need in our community. A fact that I think is sad because if the governments had done the developments beforehand, there wouldn't have been any need to incorporate the infrastructure development in their compensation scheme. This is because I am assuming a lot of resources were majorly concentrated in the infrastructure developments while they should have been geared towards sustaining the lives of the people that were affected by the project* (P9).

Even though the community well-received the infrastructure developments embedded in the restoration program other participants had concerns regarding some of the developments. Some of the participants indicated that some of the developments created inconveniences for them arguing, "The *project was able to build us a bridge at Khamolane, however the bridge has destroyed the shortcut route that we used to take to places like Sefikeng, despite that, the bridge is built where our animals used to drink."* (P1). The same sentiments were shared by other participants arguing that they were satisfied with the houses built for them but maintaining that the loss of their original houses was far greater than the packages they received as participant 7 put it the loss of their original houses and little compensation triggered emotions of sadness:

"I think the house is nice, but I was very sad when I heard that I was going to be relocated because the place I had was small as it was, it was very valuable for me and my children." (P7).

Besides, the findings further revealed that the infrastructure provided people with leeway to move to other places leaving the community as a ghost town. This is also added to the issue of inadequate compensation packages that were not able to revive the livelihoods of those affected by the project. Participant 13 explained this phenomenon this way:

> I *was mostly happy about the road being built from Maseru to here because it allowed me to travel easily, and it allowed many people to be able to move to places nearby the town or to South Africa. As a result, many people, especially young people, have left to look for jobs and most people in the community are now older people.* (P13).

The findings eco-mixed feelings about infrastructural development discussed in the literature review. On the one hand, they show that the development of bulk water projects is not a total loss as it helps ease the lives of those affected by the project (Vorosarty et al., 2005). The similar findings were derived from the study in Ghana which concluded that large-scale development projects were able to provide different forms of infrastructure to the affected communities to aid them in their livelihood restoration process. The significant infrastructure needed by the community was assessed and, in the end, the affected persons were able to benefit from roads as well as communication networks (Gilmour *et al*., 2010).

Even though the developments brought by the Metolong restoration program were deemed significant, the findings reveal that some of the developments were not well received by the community members due to the inconveniences they presented. Therefore, the overall concerns of the study are that the restoration package for Metolong was not as unique as it was argued (Sekamane, 2023). The compensation the affected community received did not cover the losses the community endured. These findings show that in any mega project, there are hidden costs that are not adequately covered by the restoration packages.

4.3 Summary of the chapter

The chapter focused on interpretation and discussion of findings pertaining to the dam's restoration program on the socio-economic lives of project-affected persons at Metolong. Thus, the chapter highlighted the impact of Metolong restoration packages on the economic lives of the affected communities,

followed by social impacts. The last theme presented and discussed is the impact of the restoration on the infrastructure.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter entails a summary of the findings, concluding remarks as well as recommendations of the study.

5.2 Summary of findings of the study

The aim of the study was to analyze the dam's restoration program on the socio-economic lives of project-affected persons at Metolong, Lesotho. The findings of the study showcased that the construction of Metolong dam and reservoir had adverse impacts on the societies residing near the project site. The dam was expected to deliver many socio-economic benefits to the affected communities. However, it was determined through the findings that the project had limited positive impacts on the livelihood of the affected communities leaving them further impoverished. The findings further established that the restoration package failed to revive the economic livelihoods of those affected as the compensation package was flawed and was deemed inadequate to cover the loss of land and the economic activities that were done using land.

It was also revealed through the findings that the Metolong project interrupted the social lives of the affected communities resulting in noise, diseases, and social disorder. However, the restoration program did not adequately cover the social disruptions that continued far after the completion of the project as the increase in diseases left a lot of orphans and vulnerable children who continuously needed care which not part of the compensation was. Lastly, the infrastructure developments embedded in the restoration program of Metolong dam construction were regarded as the only useful element in the daily lives of the community and turning the communities into ghost communities.

5.3 Conclusions

5.3.1 The economic impacts of Metolong dam construction on the affected community.

Based on the findings, the study concludes that there was nothing novel about the Metolong compensation program which has been over-emphasized by the project donors. It is clear from the findings that just like other bulk water projects in Lesotho and other countries, the Metolong project did not improve the livelihoods of the community. It created menial jobs which were not sustainable. Despite that, even the jobs that were promised the locals were later given to labor sourced outside the affected communities. The findings also established that the restoration program of Metolong had similar attributes to those of the LHWP past bulk water projects with regards cash compensation. The findings showed that the project disrupted the economic lives of those affected, and hence they were offered compensation.

Similarly, it is clear from the study that the social lives of the communities were negatively affected by the construction of the dam. The findings showcased that there were different social disorders that emanated from the interactions of foreign construction workers and the local communities. The findings of the study further established that the compensation package did not have any pre-emptive measure appropriate to mitigate the social impact and the cash compensation was not enough to cover the remnants of the social construction.

The findings have further highlighted that Metolong dam construction brought about many infrastructures to the affected communities. It was deduced from the findings that all the developments brought by the project had differing opinions of those affected by the project. The findings established that there were those who appreciated the infrastructure. On the other hand, some stated that the infrastructure has disrupted their lives and their way of living. Lastly, the findings established that the infrastructure turned out to be useless in certain regards as it has turned the communities into ghost towns.

5.4 Recommendations of the study

Abolishment of cash compensation

It has been established that cash compensation has never succeeded in revamping the livelihood of the affected persons. Therefore, it is recommended that bulk water projects should disregard cash compensation and employ resource compensation.

The revamping of compensation standard

The government should revisit the compensation standard and criteria used on affected persons as the people affected by development projects differ in terms of what they lost due to the project. This is because the universal standard suggests that losses of people affected by the project are the same regardless of what they used their land for.

Ensuring service delivery

The bulk water projects should be constructed in areas where there are infrastructure developments that includes roads, electricity and clean running water so that when large-scale development project like Metolong dam is constructed, extensive funds could be geared towards restoring the lives of those affected to full capacity.

Provision of skill training for employment for unskilled labor

Bulk water projects like Metolong dam should be mandated to provide the local people with necessary skills required in the construction of the dams prior to construction of the dam, so that they could be able to attain the work at the site and have ability to restore their livelihoods.

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APENDICES

Appendix 1:

INTERVIW GUIDE

Economic

1. How did you survive economically before the project?
2. How were you affected by the project?
3. Were you able to attain compensation?
4. Was compensation adequate compared to your loss?
5. Were you able to attain employment from the project?
6. How were you making a living during the construction?

Social

1. How were social relations before the project?
2. How were the social relations between the community members and the construction workers during the construction?
3. What are the effects of the construction that you experienced during the construction?
4. How were they mitigated?

Infrastructure development

1. How was life before the infrastructure brought by Metolong?
2. What are the infrastructure developments brought by the project to your community?
3. Do you think the infrastructure was significant?

4. What are the effects of infrastructure on the way of life in your community?
5. Is there anything you want to add?

Appendix 2: atlas. Data

Code	Comment
● 1. Life before developments brought by the project	
● Difficult	
● Easy	
○ 1. Life before developments brought by the project (2)	
● 1. Life of the community before the project	
● Conflicts	
● Normal living	
● Peaceful Living	
● 1. Livelihood before the project	
● Bad Livelihood	
● Good livelihood	
● 2. Impacts of the project on the community	
● Air pollution Dust	
● Conflicts between workers and community	
● Noise	
● Rise in crimes	
● Rise in diseases	
● Teen preagnancy	
● Traffic	
● 2. Infrastructure developments brought by the project	
● Clinics	
● Elictricity	there were also t
● Revamped Police stations	
● Roads	
● Schools	
● Water	
● 2. Livelihood during the project	
● Business opportunities	

- Compensation
- Employment opportunities
- Livelihood skill development program
- Not emough compensation
- Not enough business opportunities
- Not enough employment
- Useless livelihood skills development program

- 3. Effects of project on livelihood
  - Bad feelings about being displaced
  - bad feelings about lending out land
  - Bad feelings about selling land to the project
  - did not mind lending out land to the project
  - Displacement
  - Good feelings about being displaced
  - Happy to sell land to the project
  - Lending land to the project
  - Selling land to the project
- 3. Life after the developments brought by the projects
  - Easier
  - More difficult
- 3. Social living after the project
  - Bad
  - Good
- 4. Livelihood after the project

- Livelihoods were better
- Livelihoods were worse
- Poverty increased
- Poverty reduced

- Feeling about not being affected by the project
  - Relieved due to not being affected
  - Sad due to not being affected
- i did not care
- Significant development

- Social relations between the community and workers
  - Bad relations
  - Good realtions