

Dam In or Dam Up: A Contextual Assessment of Dam Water Usage in Mambwe District, Zambia.

By

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Report on the field project undertaken in Zambia from May through August 2024

4th November 2024

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Project Overview

Through the Global Food Security Graduate Fellowship offered by the College of Agricultural, Consumer and Environmental Sciences (ACES), I was able to do my partial project in Zambia. Discussed below is an overview of the project, what was done and what is yet to be done with a conclusion, recommendations and acknowledgements.

The purpose of this research project is to find out whether or not Chikowa Dam is a hindrance to improved crop production that would uplift rural livelihood and reduce poverty in Zambia. Rural poverty is linked to crop production which is 90% rainfed. According to the Rural Agricultural Livelihood Surveys, spanning 2012, 2015 and 2019, Eastern Province of Zambia has the highest 'chronic' poverty. Much of this chronic poverty is 'food' poverty, that is people living under the poverty line (Shepherd, A. et al, 2021). In 2013, the Climate Resilient Infrastructure Development Facility (CRIDF) together with Ministry of Agriculture(Zambia) started the construction of Chikowa Dam, with the aim of creating an irrigation scheme that would increase agricultural production and also provide water security for 540 people(Climate Resilient Infrastructure Development Facility, 2018).From 2017-2021, the World Bank's Zambia Water Resource Development Project(ZWRDP)aligned itself with the Country Partnership Framework(CPF) objectives to support rural communities better cope with climatic shocks , move the agri-food sector from Maize dependent but open up other crop markets thus increase the economic benefits and also transition the dependence on rain-fed agricultural production (World Bank, 2019). This meant supporting Irrigation Infrastructure (Dams) being built. About 100 dams were planned to be built and renovated but only 12 were viable, two (2) more were not considered thus remaining with 10. Another World bank Project, the Irrigation Development Support Project (IDSP) came on board to;

- I. Promote Agricultural Production through irrigation,
- II. Promote Aquaculture and

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III. Promote local tourism.

It is at this stage where this research finds its significance, where IDSP is running.

This research will assess the impact and sustainability of dams constructed in non-industrialized societies by Western development agencies upon the intended users of the dams for agriculture and aquaculture purposes, using as a case study, Chikowa dam built in Chikowa Ward of Mambwe district, Zambia. This will be achieved using the following Specific Objectives.

- I. To identify the role of the chief in dam water management for agricultural production and aquaculture in Mambwe district.
- II. To examine the environmental factors considered in site selection of construction of Chikowa dam in Mambwe district.
- III. To analyze the socio-economic value of using the dam water for agricultural production and aquaculture in Mambwe district.
- IV. To identify any human-human or human -animal conflict that may exist in using the Chikowa dam water in Mambwe district.

What was done

The following Stakeholders were engaged to get the overview of the project;

- Ministry of Agriculture side by side with Zambia Agricultural Research Institute (ZARI)
- The office of the Provincial Administration office who assigned key personnel to lead us to the project site and gave us information needed.
- The World Bank, through the IDSP office -the project implementors
- The Chief's representative (Headmen and Indunas)
- The local area councilor and
- The local communities near the dam

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Meetings were held, engagements via interactions, questionnaires and participant observations were also done to get information pertaining the research.



The Headman addressing the people as he points to the earmarked land for irrigation

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A guided tour of the dam area, from Left to Right, Gift, an Official from Ministry of Agriculture Mambwe District, Tobias, the area Councilor for Chikowa Ward and Prof. Ann-Perry Witmer (UIUC)

Key Findings

- Gardening is done by the banks of the Lutembwe River near the dam
- Construction is on-going (the dam re-designing to enable for irrigation infrastructure)
- So much money has gone into the project to make it viable.
- The arable(suitable) land for irrigation is privately owned by the Catholic Church whiles the proposed site for irrigation cannot be compared to the privately owned.
- The new contractor (Dam re-building, re-designing as of August 2024) was on site.

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Br Francisco of Chikowa Youth Development Centre which owns over 100,000 Ha of arable land, leads Prof. Ann-Perry Witmer to check on irrigation possibility on the spill way channel after the dam



Part of the arable flat land owned by the Catholics Bishops, the cultivate Maize, Rice among others.

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Conclusion

The project site visit opened up a lot of issues pertaining food, energy and water nexus in the wake of climate change effects on the Agricultural production in Zambia. However, as these developments are going on, to improve rural households by mechanizing agricultural production, certain dynamics are to be factored in, like, what has worked in another place, may not work elsewhere.

Recommendations

The project is ongoing, as infrastructure, it is imperative to visit the site again to compare the change in objectives. Also, since the world Bank implemented similar projects in other provinces, it is required that a comparative study be undertaken to establish the variations to inform future implementation of similar projects, also improve execution to improve food production in the wake of climate change.

Acknowledgements

This Project was made possible by support from the Global Food Security Graduate Funds, administered by the College of ACES (Office of International Programs). Through this support, I also managed to present at a Global Summit in Bolivia where I was elected to be Vice President of the Global Food Energy and Water (Global FEW) nexus Alliance as highlighted in the ABE Weekly Update of November 4, 2024,(Check website : <https://emails.illinois.edu/newsletter/88/1778601488.html>).