INITIATIVE ON
Aquatic Foods

International Water Management Institute

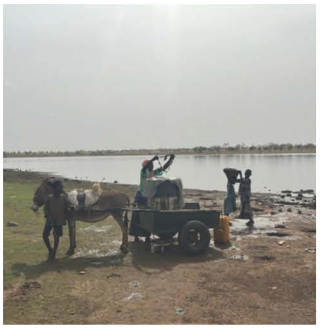
FISH CAGE CULTURE IN SMALL WATER BODIES IN NORTH EAST REGION OF GHANA

Marie-Charlotte Buisson (IWMI), Giulia Zane (IWMI) , Sarah Appiah (IWMI), Everisto Mapedza (IWMI), Ruby Asmah (CSIR-WRI) , Lawrence Armah Ahiah (FC), and Emmanuel T.D . Mensah (CSIR-WRI)

International Water Management Institute (IWMI)
Council for Scientific and Industrial Research – Water Research Institute (CSIR-WRI), Ghana
Ministry of Fisheries and Aquaculture Development (MoFAD) - Fisheries Commission (FC), Ghana

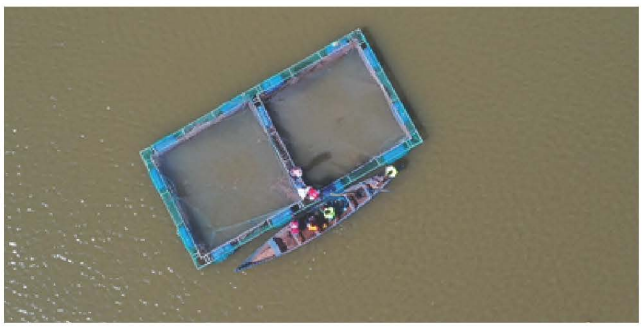
1. INTRODUCTION

- Northern Ghana is characterized by rainfed agriculture with low agricultural productivity, and high poverty rates.
- The government and development parners have been constructing small dams, primarily for dry season irrigation. The One Village One Dam project recently constructed many of them. The dams can have multiple uses, including livestock watering, domestic uses, and fish production.
- Barriers to youth engagement in aquaculture the project aims to overcome:
  - High initial invest cost and lack of access to finance.
  - Low technical experise in northern Ghana and limited access to extension services.
  - Difficulty in accessing inputs (feed, fingerlings) in northern Ghana.
- The CGIAR Aquatic Foods Initiatived introduced aquaculture in 4 small dams in the North-East Region, to evaluate its pontential for generating youth employment, income, and improving food security in the communities.



2. IMPLEMENTATION

- The project is implemented by the International Water Management Institure, in partnership with the CSIR Water Research Institure (CSIR-WRI) and the Fisheries Commission of Ghana.
- Site selection was based on remote sensing data (size of the dam, water availability, etc.)
- Youth groups of around 15 members were formed with the help of the comunity leaders. Each group was provided with 2 cages and all inputs for the first production cycle (tilapia fingerlings, feed).
- The project also provided one canoe, life vests, weighing scale and other necessary equipment.
- Beneficiaties were trained in aquaculture technical skills and received monthly monitoring and coaching throughout the first fish production cycle.
- The groups were trained to understand group dynamics and assisted to open bank accounts and register cooperatives. Entrepreneurship and business development trainings were also provided stressing the importance of effective bookeeping and proactive marketing.



3. RESULTS

- Youth Groups have acquired skills in fish farming and best practices in post-harvest handling.
- They also aquired business and marketing skills and are getting ready to register as cooperatives.
- The first aquaculture cycle was concluded at the beginning of May 2024 - Fish harvest is still ongoing. Preliminary results show that the quantity of fish produced is satisfactory in 2 communites. The other 2 experienced high mortality rates, probably because of high turbity.
- Most of the fish is being sold within the community, suggesting it will have an impact on nutrition.
- The youth involved are considering aquaculture as an alternive livelihood option to increase their income and generate employment opportunities, especially during the dry season.

4. LESSONS LEARNED AND CONCLUSIONS

- Aquaculture in small reservoirs shows a lot of promise.
- Cricial factor for the success of aquaculture in small dams:
  - Site selection to ensure water quality can support fish production (dams with high turbility may not be suitable for tilapia production).
  - Community acceptance is necessary as the water bodies (small dams) belong to the community.
  - Continual access to technical support (e.g. extension servives) to ensure early identification of challenges.
  - Training on group dynamics and entrepreneurship training are key to maintain traction and sustainability.
- Remaining challenges and opportunity for future research and partnership with private sector:
  - Access to finance and to market are key to cover initial costs and ensure revenue generation.
  - Feed could be produce locally at lower cost while ensuring environmental safety.
  - Suitability mapping to identify dams in which aquaculture could successfully be introducted.