PROJECT TERMINAL EVALUATION

"Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods"

UNDP PIMS 4952
GEF FOCAL AREA: CLIMATE CHANGE - ADAPTATION
STRATEGIC PROGRAM OF GEF 6:

EXECUTING ENTITY/IMPLEMENTING PARTNERS MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY, AND INNOVATION (MESTI)

REGION: AFRICA
COUNTRY: GHANA

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Abbreviations and Acronyms

CAPI	Computer-assisted personal interviewing
CC	Climate Change
CPD	Country Programme Document
CSIR	Council for Scientific and Industrial Research
CWSA	Community Water and Sanitation Agency
DDA	District Director of Agriculture
EPA	Environmental Protection Agency
FAO	Food and Agricultural Organization of the United Nations
FEVs	Field Evaluation visits
FGDs	Focus group discussions
FC	Forestry Commission
GEF	Global Environment Facility
GoG	Government of Ghana
GWI	Global Water Initiative (June 2012)
HR & GE	Human rights and Gender equality
IPCC	Intergovernmental Panel on Climate Change
KIIs	Key Informant Interviews
LDCs	Least Developed Countries
LFA	Logical Framework Approach
M&E	Monitoring and Evaluation
MESTI	Ministry of Environment, Science, Technology and Innovation
MOFA	Ministry of Food and Agriculture
MTE	Mid-Term Evaluation
NADMO	National Disaster Management Organization
NCs	National Communications
NDCs	Nationally determined contributions
NFS	National Fire Service
NGOs	Non-Governmental Organizations
PCR	Project Completion Report
PMU	Project Management Unit
PPR	Physical Progress Report
QDA	Qualitative Data Analysis
RBM	Results-Based Management
SADA	Savannah Accelerated Development Authority
SDGs	Sustainable Development Goals
SES	Social and Environmental Standards
SMART	Specific, Measurable, Achievable and Attributable, Realistic Time-Bound, Timely and Targeted
SPSS	Statistical Package for the Social Sciences
TE	Terminal Evaluation
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
USD	Unites States dollar

Project locations

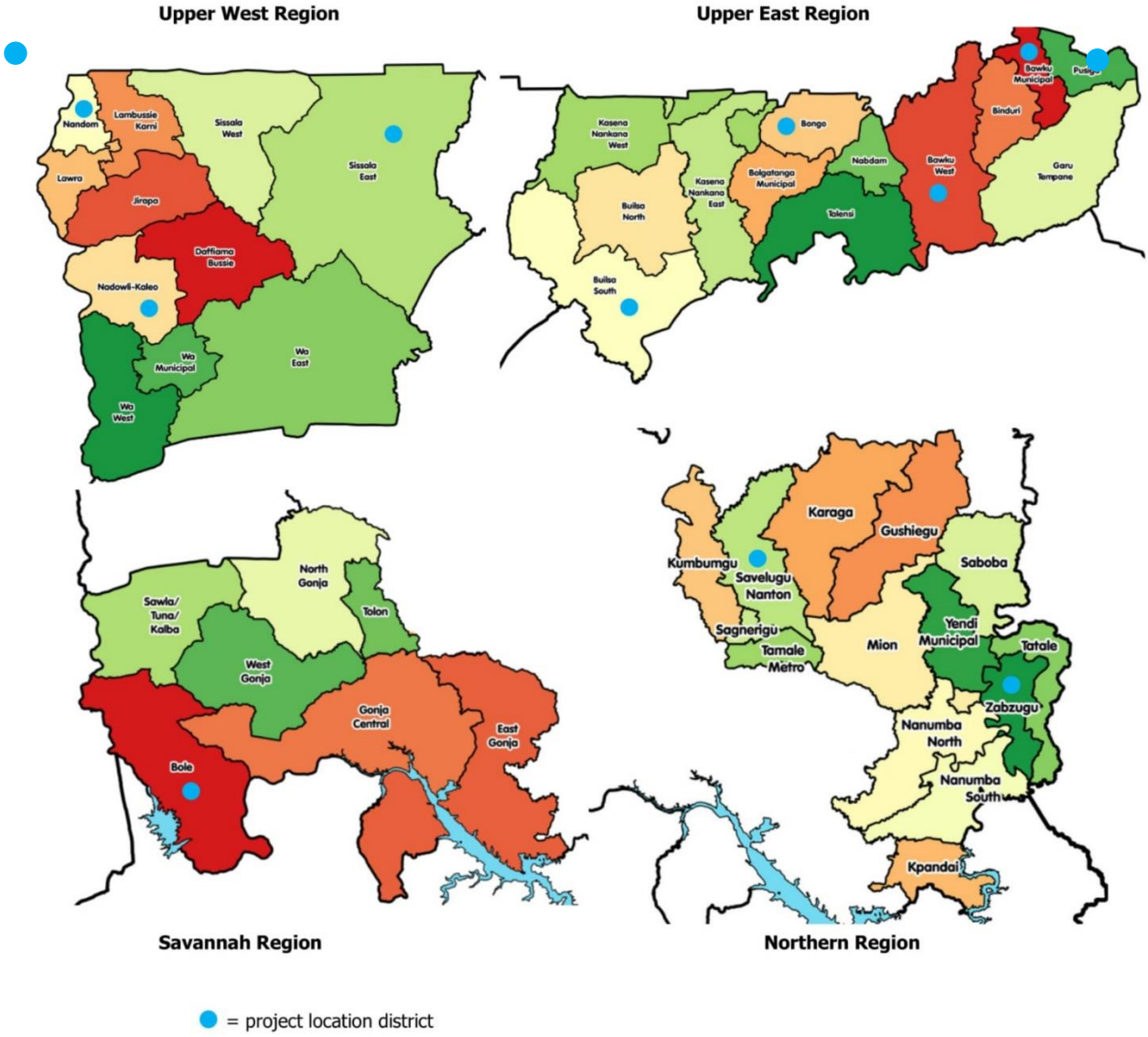


Figure 1: Spatial distribution of Project districts in all 4 Northern regions

1 EXECUTIVE SUMMARY

Table 1: Project Information Table

Country:	Ghana
Regions	**Northern, Upper East, Upper West and Savannah**
Grant Title:	**Increased resilience to climate change in Northern Ghana through the management of water resources and diversification of livelihoods**
ID PNUD (PIMS#)	4952
ATLAS Award ID	00089037
ATLAS project ID	00095434
AF Implementing Entity:	United Nations Development Programme (UNDP)
Executing Partner	Ministry of Environment, Science, Technology and Innovation (MESTI))

Key Dates

AF Approval Date	UNDP Approval	Start date	Mid-term Review	Original Project Completion	Actual Project Completion including No-Cost Extension
March 2015	June 2010	April 2016	October 2018	April 2020	31 December 2020

Grant Financing

Amount of Financing Requested	Adaptation Fund Project Grant	Total Cost of Project	Expenditure @ Midterm 31 Dec. 2019	Expenditure @ End of Project
USD	USD	USD	USD	USD
8,293,972	**8,293,972**	**8,293,972**	**2,786,607**	**6,356,932.32**

Project Component Cost

1. Water Resource Management and Planning under climate change	364,000.00	
2. Community Level Implementation of climate resilient water resource management activities	4,495,998.75	
3. Diversification of Livelihoods of Rural Communities under climate change	2,251,456.25	
4. Project Implementation – Total Costs	7,111,455.00	
5. Project Execution cost	532,759.00	
6. Total Project Cost		**7,644,214.00**
7. Project Cycle Management Fee charged by the Implementing Entity (8.5%)		649,758.19
8. Amount of Financing Requested		**8,293,972.19**
9. Project fund utilization/expenditure rate including programme cycle mgt fee		**84.48%**

Number of Community Beneficiaries

No of Project Districts	No of Communities	Estimated Direct Beneficiaries	Estimated Total Direct and Indirect Beneficiaries
10	50	14,137	93,909

Project Objective

Enhanced resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in 4 northern regions of Ghana (Northern, Upper East, Upper West, and Savana)

Collaborating Government Institutions	Ministry of Environment, Science, Technology and Innovation (MESTI), Ministry of Food and Agriculture (MoFA), Ministry of Finance, Water Resources Commission (WRC), Water Research Institute (CSIR), Irrigation Development Authority (IDA), Community Water and Sanitation Agency (CWSA), Fisheries Commission, National Fire Service (NFS), Forestry Commission (FC), District

	Assemblies (DA), and regional level stakeholders included the Regional Coordinating Directors and Economic Planning Officers from the 3 regions and regional directors of MoFA, EPA, GIDA, CWSA, FC, NADMO, WRC, LC, UDS, Gmet, CSIR-WRI,VRA, SADA (See Main Stakeholder in Table 4)
Civil Society Partners	46 Local NGOs AND CBOs (Annex 6.12) in Agro-processing, Bee Keeping, Dry Season Farming and Fish Farming: 1. Akandem Farms Limited (AFL) 2. Auxano Forever (APS) 3. Basicneeds-Ghana (DSF) 4. Coalition for Development of Northern Ghana, (Northcode) (Bee Keeping) 5. Open Ghana (DSF) 6. Rural Education and Agriculture Development International (Readi) (FF) 7. Urbanet (DSF) 8. Women and Children Empowerment Program (Wacep) Ghana (DSF) 9. Arocha Ghana (Bee Keeping) 10. Bimoba Literacy Farmers' Cooperative Union Bilfacu (Bee Keeping) 11. Binaba Women Farmers Association (Agro Processing) 12. Cibri (Bee Keeping) 13. Link Ghana (Bee Keeping) 14. Northfin Foundation (DSF) 15. Wilphin Foundation (DSF) 16. Coalition for Change (C4c) (DSF) 17. Friends of Rural Growth Ghana (Forg Ghana) (DSF) 18. Grameen Ghana (DSF) 19. Meta Foundation (DSF) 20. Transforming Rural Women and Youth Life Foundation (Truwaylif) (Agro Processing) 21. Zasilari Ecological Farms Projects (DSF) 22. Zuuri Organic Vegetable Farmers' Association (Zovfa) (DSF) 23. Lahorima Islamic Youth Association (Agro Processing) 24. Linked Ghana (Agro Processing) 25. Community Self Reliance Centre (Coserec) (Tree Seedlings) 26. Agrointroduction Ghana (Agro Processing) 27. Bido (Agro Processing) 28. Development Frontiers (Shea Butter Processing) 29. Northern Center For Sustainable Development Management (Beekeeping 30. Community Life Improvement (Clip) (Fish Farming) 31. Songtaba (DSF) 32. Simili Aid (DSF) 33. Presbyterian Community Based Rehabilitation Programme (DSF) 34. Partnerships for Rural Development Action (Pruda) 35. Action for Sustainable Development (Asudev) (Bee Keeping) 36. Pro-Net North 37. Belim (DSF) 38. Center For Rural Water Development & Sanitation (Tree Seedling) 39. Pure-Trust (Agro-Processing) 40. Savanet Ghana (Beekeeping) 41. Sungmah Organization (Agroprocessing) 42. Ticofamu (Tree Seedlings) 43. World Vision (Agro-Processing) 44. BEWDA (DSG) 45. Binanba Women Farmers Association (APS) 46. Garu Presbyterian Community Rehabilitation Project (DSG).

Project Objective

1. The Government of Ghana (GoG), with the support of UNDP, and funding from the Adaptation Fund Board Secretariat, implemented a five-year project entitled *"Increased resilience to climate change in northern Ghana through the management of water resources and diversification of livelihoods"*. The main objective of the project was to enhance the resilience and adaptive capacity of rural communities' livelihoods to climate impacts and vulnerabilities of water resources in the four (4) northern regions of Ghana, namely Savana, Upper East, Upper West, and Northern Region (See Figure 2c).

2. The objective was to be achieved through key results centered on the improvement of water access, and also increased institutional capacity and coordination for integrated water management to support other uses of water resources, especially for the diversification of livelihoods by rural communities[1].

Project components and outcomes

3. The project is made up of three components, each with the following outcomes:

> **Component 1**: Water Resource Management and Planning Under Climate Change.
> Outcome 1: Improved basin level management and planning of water resources taking into account climate change impacts on surface and groundwater sources.
>
> **Component 2:** Community-level Implementation of Climate Resilient Water Resource Management Activities.
> Outcome 2: Climate resilient management of water resources by at least 30 communities in Northern Ghana.
>
> **Component 3:** Diversification of Livelihoods of Rural Communities Under Climate Change.
> Outcome 3: Enhanced diversification of livelihoods of 50 communities in northern Ghana.

4. The project builds on the priority measures and interventions identified in the various vulnerability and adaptation initiatives to respond to the Sustainable Development Goal 13 (Climate Change adaptation) with co-benefits of other relevant SDGs, 2030. Specifically, the project is addressing priorities 2 and 6, and contributes to priority 3 of the NCCAS as follows:

Priority 2: Alternative livelihoods: minimizing impacts of climate change for poor and vulnerable local populations;

Priority 3: Enhancing national capacity to adapt to climate change through improved land use management;

Priority 6: Managing water resources as climate change adaptation to enhance productivity and livelihoods.

[1] https://www.adaptation-fund.org/project/increased-resilience-to-climate-change-in-northern-ghana-through-the-management-water-resources-and-diversification-of-livelihoods/

5. The project was expected to directly benefit 60,000 people from the targeted project regions and indirectly benefit over 8 million Ghanaians living along the Volta River Basin. It is also expected to increase water access, diversification of livelihood activities and increase income generation by 30% of households in targeted project communities

6. The Project is being implemented in two (2) District Assemblies in the Northern region, four (4) District Assemblies in the Upper East Region, one (1) district in the Savanah region and (3) three District Assemblies in the Upper West Region. A total of 50 communities made up of five communities from each of the ten (10) District Assemblies are directly benefitting from the project intervention. The direct and indirect beneficiary populations are estimated at 14,137 and 93,909; representing 13% and 87%, respectively, of the total population of the 10 districts (108,046)

Figure 2a Figure 2b Figure 2c

Figure 2: Location of the three northern regions of Ghana where the project is carried out

7. The project is being executed by the Ministry of Environment, Science, Technology and Innovation (MESTI) of Ghana in partnership with the United Nations Development Programme (UNDP) as the Implementing Entity, with close cooperation with sectoral ministries (Ministry of Food and Agriculture (MOFA) and Ministry of Water Resources, Works and Housing), District Assemblies and decentralized agencies (Community Water and Sanitation Department, District Agriculture Development Unit, and Forestry Services Division), NGOs and the private sector.

8. The project has been under implementation since May 2016 in selected districts and communities in three (3) Northern regions of Ghana, (See Figure 2b) but actually, there are currently Four (4) regions (See Figure 2c). The most recent region created being the Savanna Region, which was originally part of the Northern Region.

Evaluation Table

Table 2: Evaluation Ratings Table

1. Monitoring & Evaluation (M&E)	Rating
M&E design at entry	5 = Satisfactory (S)
M&E Plan Implementation	4 = Moderately Satisfactory (MS)
Overall Quality of M&E	4 = Moderately Satisfactory (MS)
2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	5 = Satisfactory (S)
Quality of Implementing Partner Execution	5 = Satisfactory (S)
Overall quality of Implementation/Execution	5 = Satisfactory (S)
3. Assessment of Outcomes	**Rating**
Relevance	6 = Highly Satisfactory (HS)
Effectiveness	5 = Satisfactory (S)
Efficiency	4 = Moderately Satisfactory (MS)
Overall Project Outcome Rating	4 = Moderately Satisfactory (MS)
4. Sustainability	**Rating**
Financial sustainability	4 = Likely (L)
Socio-political sustainability	4 = Likely (L)
Institutional framework and governance sustainability	4 = Likely (L)
Environmental sustainability	4 = Likely (L)
Overall Likelihood of Sustainability	4 = Likely (L)

9. The Evaluation Ratings Table consolidates individual ratings, undertaken in a number of areas within the TE report, as detailed in the TE report's 'Section 4. Findings'. The rating scales used in a TE report are described in Table 3.

Table 3: TE Rating Scales

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings:
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability

4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Summary of Findings, Conclusions, Lessons Learned and Recommendations

Summary of Findings

10. **Project relevance:** The project's relevance is rated to be **Highly Satisfactory (HS).** It improves national adaptation actions taken to address climate change. The project supports the achievement of three of the ten national priorities for climate change adaptation, as out-lined in the 2011 National Climate Change Adaptation Strategy (NCCAS).

11. The project also responds to the need to improve water resources management practices (particularly wetland conservation) to address climate impacts, risks and vulnerabilities highlighted in the Ghana's Second National Communication (NC2), Third National Communication (NC3) and Fourth National Communication (NC4)[2] submitted to the United Framework Convention of Climate Change as well as the World Bank study on Economics of Adaptation to Climate Change (EACC) in Ghana[3].

12. The project currently is contributing significantly to the government's flagship programmes designed to create employment particularly for the youth in rural and peri-urban communities, thereby improve income levels and standard of living, as well as reduce rural-urban migration. These three flagship programmes are one village one dam (IV1D)[4], planting for food and jobs (PFJs)[5] and one district one factory (ID1F)[6].

13. **The following table, highlight the** AF priorities addressed by the project.

[2] https://unfccc.int/non-annex-I-NCs

[3] Ghana - Economics of Adaptation to Climate Change (EACC): Main report (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/278431468337213682/Main-report

[4] https://www.msdi.gov.gh/projects/3/; Ministry of Special Development Initiatives

[5] https://mofa.gov.gh/site/programmes/pfj

[6] https://www.moti.gov.gh/1d1f/about

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator
To enhance the resilience and the adaptive capacity of rural livelihoods to climate risks on water resources in the northern region of Ghana.	Number of communities with the adaptive capacity to climate risks	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate induced socioeconomic and environmental losses	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
		Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**
Outcome 2: Climate resilient management of water resources by at least 50 communities in northern Ghana	Percentage of population with improved water management practices resilient to climate change impacts in the targeted regions.	***Output 3***: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at local level
		Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)
Outcome 3: Enhanced diversification of livelihoods under climate change by at least 50 communities in northern Ghana	Number of communities with livelihoods diversified to provide resilience to climate change impacts	***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.2. Type of income sources for households generated under climate change scenario

14. The main objective of the project is to enhance the resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in the 3 northern regions of Ghana.

15. Overall Project Outcomes: The achievement of outcomes is rated as **Moderately Satisfactory (MS)** given the level of implementation. A lot has been achieved across the three components, and the Component 1 is rated as Highly Satisfactory. This has been achieved even with a delay in the start of the project because of the late release of funds. However only 10 of initial 50 dams/dugouts projected was achieved by the December 2020. The rehabilitation of additional 5 dams have been commenced with committed budgets, which has improved the project fund expenditure rate to 84.48% ($6,356,932.32 + 649,758.19 related to the Project Cycle Management Fee) as at 31 December 2020. 25out of 40 community tree nurseries and wood lots

were achieved because of poor market, and 40 out of 50 dry season gardening schemes were implemented. (See Annex 6.9 -Physical project report summary).

16. **Overall Quality of M&E:** In terms of monitoring and evaluation, the project is rated as **Moderately Satisfactory (MS).** There were both adequate monitoring of environmental and social risks, and a clear evidence of the involvement of relevant institutions (EPA and GIDA) and adaptation committees at the national, regional, district and community level in the monitoring of activities in addition to monitoring functions performed by the Project Management Unit (PMU)[7]. There were however some reports from NGOs indicating that there was a poor sense of timing at some stages of project implementation, since there was a lot of activities yet to be undertaken.

17. The EPA offices at the Regional and District level monitored and reported on the project performance of the NGOs to the PMU and the Project Steering Committee (See Annex 1[8]). The EPA submitted quarterly review of the Livelihood Sub-Project implementation performance reports of all the 46 NGOs involved as local partners in the implementation of the livelihood projects (bee keeping, dry season farming, agro-processing, fish farming, tree seedlings establishment) [9]. A study validation committee made up of UNDP, EPA, MESTI, MOFA, Gmet, WRC, CSRI-WRI, VRA, NADMO and MoF also periodically reviewed the performance of the NGOs who were selected by a bidding process as partners of the PMU to implement and deliver the livelihood projects (See Annex 2[10]).

18. Besides, there is evidence showing that M&E budget was not sufficient, and NGOs needed a better understanding of the systematization of results according to indicators. The project activities are monitored and evaluated at different levels: community, district, region and national levels, with some room of improvement at the local and district level.

19. **Project effectiveness**. Component 1 achieved intermediate objectives towards integrating climate change in water resources management planning in all the 4 project regions. Is important to highlight that the project established targeted institutional arrangements to drive climate change mainstreaming in the district and community water management plans, programs and projects.

20. Component 2 achieved two of three outputs. The boreholes are responding to vulnerability of surface water to CC and water scarcity; providing portable water for the project communities during the dry season, and preventing the use of polluted surface water as drinking water source during the dry season. 30 Buffer zones were created, secured from bush fires, encroachment and deforestation by farmers and livestock to serve as effective water catchment management system to reduce siltation in the watershed, maintain the afforestation schemes for reducing evaporation and increasing resilience of the dams/dugouts to climate change.

21. Component 3 realized 125% of bee keeping schemes target(50 communities compared to target of 40); and 80% of dry season gardening (40 out of 50 targeted communities); and 39 fish farms

[7] AF-M&E Plan for Livelihood NGOs

[8] Adaptation Fund Project, Report on Monitoring of Tree Planting Sites and Fencing Activities under the Adaptation Fund Project (EPA, February 2017)
https://drive.google.com/file/d/1E7a1skiNXrUl2HXpIpGbGa6RFxV9lMGE/view?usp=sharing

[9] NGOs Livelihood sub-project implementation review reports

[10] Report on the Review of Progress of Work of NGOs Implementing Livelihood Sub-Projects
https://drive.google.com/file/d/1P9Kf3dzL6D1qvlA5D1yj8HNpY5TweF59/view?usp=sharing

established (30% more than target of 30). However, the projects had significant challenges, realizing very low performance compared to projected targets in the other livelihood projects. Agro-processing achieved 60% (24 out of 40 communities) and Tree nursery realized 63% (25 out of 40 communities). Regardless of the high output, the fish farms faced challenges of floods, theft, and low productivity that reduced the expected intermediate impacts.

22. The outputs with the lowest achievements of intermediate objectives and reduced long-term impacts were output 2.2.2 and Output 3.3. Output 2.2.2 achieved only 10 dams/dugouts out of the target of 50 dugouts/dams by 31 December 2020 This was due to changes in the structure of existing dams, which required more works than originally anticipated at the project design phase, resulting in cost and budget escalation.

23. Another major external factor, beyond the project control, that affected the performance of Output 2.2.2 was the impacts of floods resulting from the spillage of the two dams in Burkina Faso (Bagre dam and Kompienga dams). The periodic spillage continues to be a threat to the sustainability of the fish farming livelihood projects.

24. The rehabilitated dams in the project communities including Lamboya, and Tampion breached as a result of being hit by the floods from the spillage of the dams, which led to loss of the cages and other livelihood intervention projects.

25. **Project Finance / Efficiency:** The financial execution of the project is rated as **Satisfactory (S).** The project achieved 79% ($6,009,665.4/$7,644,214*100) as at November 2020. In order to improve the project fund utilization rate, the remaining balance of 21% has been committed in contracts including the cost of the terminal evaluations and contracts signed by government for the rehabilitation of 5 other dams (See Annex 6.14). This additional rehabilitation will bring the achievement rate of the 50 dams targeted in initially from 20% (10 out 50) as at 31 December 2020 to 30% (15 out 50) by 31 March 2021.

26. The low implementation rate is attributed to low initial budget estimate for the rehabilitation dams/dugouts at the project design stage. Thus, the actual terminal expenditure as at 31 December 2020 is in principle $6,356,932.32 (project activities) and $649,758.19 (programme cycle mgt fee). The total utilization represents 84.5% of the total project fund initiatives.

27. **Sustainability:** The sustainability is rated as **Likely (L).** The project demonstrated increased productivity and income generation from dry season farming with irrigation/controlled water use relative to rain fed small holder farming. As a result, dry season gardening has become the preferred small holder farming practice. Integration of dry seasoning farming in the government's programme of planting for food and jobs (PFJ) modules[11] could provide continued support for the fencing, water supply and inputs to the communities to sustain the livelihood diversification.

28. Similarly, the number of small-scale shea nut processing and shea butter production plants, and cereals and grains milling plants established by the project could be packaged as bundled projects to benefit from the governments flagship programme of one district one factory (1D1F) for sustainability. Likewise, the maintenance of the 15 small dams and dug outs constructed or rehabilitated by the project under the government's one district one dam policy and projects

[11] https://mofa.gov.gh/site/programmes/pfj

and Rearing for food and jobs (RFJ)[12] would ensure sustainability of water supply for the dry season gardening and also enhance small scale aquaculture[13].

29. In areas where fish farming was successful, there was very good harvest and cooperative earnings of the project beneficiaries. The dry season farming constituting about 51 % of livelihood projects have potential of reducing migration of the youth to urban and peri urban areas during the dry season.

30. The Communities have established very active Village Saving & Loan Association (VSLA) for managing their incomes to allow for meeting maintenance needs. The system has the potential of being managed as treasure bills in the mainline banking for leveraging small loans facility for the expansion of fencing and cultivated lands, and cages for aqua culture, and maintenance of pumps and Agro-processing equipment.

31. The project contributed to the three learning objectives identified in the first year. These were based on the adaptation actions identified for the project which targeted the principal causes of climate change vulnerability in the Northern regions of Ghana. The continuity of the flagship programmes of the current government from 2020-2024 could become the key drivers for the suitability of the livelihood projects.

32. This sustainability strategy could be realized through the handing over programme[14] designed by MESTI, particularly the Agro-processing plants to the Local governments (MDAs) in the 4 regions (Northern, Upper East, Upper West and Savana). The MDAs are prepared to provide support to the projects to ensure their sustainability as part of the on-going flagship programmes.

33. **Overall Quality of Implementation / Oversight and Execution:** The project's quality of implementation and execution is rated **Satisfactory (S).** The project shows a clear communication with all key stakeholders[15] involved partners. The Project Performance Reports (PPR) were well organized and comprehensive, showing candor and realism. Risk management shown in the same reports were of good quality; and there is clear follow up of the risks and mitigation strategies.

34. The project is coordinated by a Programme Steering Committee (PSC) and consists of high-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies. However, the TE notes the main challenging issues during implementation included the delay in the release of funds, affecting implementation of activities. Audits were carried out in the years 2017, 2018 and 2019; and in all of them there was conformity in the reviews made. Only in 2017 was a finding made with its respective recommendation, which was corrected in 2018 and its risk estimated as medium. The finding referred to a negative balance of $ 311.

Conclusions

[12] https://mofa.gov.gh/site/programmes/pfj/70-pfj/pfj-modules/328-rearing-for-food-and-jobs-rfj

[13] https://mofa.gov.gh/site/agribusiness/investment-areas/53-enhancing-small-scale-aquaculture-towards-agribusiness-development

[14] https://drive.google.com/drive/folders/1C0SCWrNuW3OELMJXDcMZs6iSViXuzJXI?usp=sharing

[15] Stakeholder mapping

35. **Conclusion 1:** Dry season farming was generally very successful with increased yield where communities received adequate training in agronomic practices and more importantly the fencing of small holder farms to avoid destruction by livestock and arson. They were very well organized, and achieved the intended and commendable outcome in all communities. These resulted in increased in productivity, income generation, increased family income and cohesion and consequently supporting children education. These activities should be replicated on demand where land is available. As a result, the communities have developed preference for dry season farming with irrigation compared to rain-fed farming. It is controlled farming with reduced risks of flooding by intense rain and unregulated watering of crops

36. **Conclusion 2:** Notwithstanding the success of Dry Season Farming, there are series key challenges as well as potential improvement for sustainability. These include the need to minimize the drying up canals for irrigation because of relatively high proportion of dead volume of silted dams with low storage volumes, making water unavailable for irrigation purposes.

37. There is also the need to control of pest infestation (pest resistant varieties and effective traditional herbal methods could be adopted, improved and applied There is the need for critical studies to implement dredging of the highly silted dams/dugouts to restore dam capacities and the most appropriate dead volumes that can increase climate smart water supply over the entire dry season periods. It is also necessary to, support in market access and development (motor king), and minimize the incidence of fire hazards and arson. This will require laying supply pipes below ground.

38. **Conclusion 3:** There is a low productivity of hives, about 50-60% colonization reported and there is a differential degree of colonization of bees in concrete and wooden hives. Productivity from wooden hives far exceed concrete hives which is attributed to the latter being very considered as foreign material within the bees' habitat.

39. Operators therefore requested for the replacement of the concrete hives. Some communities missed the honey harvesting period and lost all produce to the bees. One community still depended on assistance from Wa to harvest the honey, hence as a result of the COVID-19 restrictions, harvesting support was not obtained, leading to loss of the total production and income. There is a need of intensive training of both men and women alike in honey harvesting.

40. **Conclusion 4:** Fish farming had very low success rate in most communities, however, in areas where the activity was successful, communities reported very good harvest/catch. This successful harvest has driven the need of additional cages to increase production and subsequently income and profitability. Insecurity and theft (in some communities the entire harvest was lost to theft), loss and damage of cages (due to floods and bleach of rehabilitated dams washing away the cages), as well as post harvesting losses.

41. To mitigate some of these adverse impacts, it is noted that integrating fish smoking as preservation after sale of fresh fish in the absence of refrigeration capacity would be helpful. Attracting and mobilizing rural banks finance as well as appealing to CSR of private sector companies for additional cages would be helpful. Beneficiaries requiring support should be assisted to form cooperatives in order to meet banking requirements for fund disbursement).

42. Adequate awareness of the local banks should be created on income generation and savings culture established by the VSLAs and profitability of the livelihood interventions. Significant savings could be invested in treasury bills and used for collateral security for maintenance of equipment and future replacement.

43. **Conclusion 5:** Land tenure constraints delayed siting of the livelihood project particularly agro-processing centers. There is the need of purchasing lands for implementation of livelihood projects to avoid the challenge of communities not honoring Community entry agreements for release of land for the livelihood project implementation. The relocations tended to be far from utilities (electricity sources and/or water sources).

44. The additional cost of extending utilities (the electricity and water) were not factored in the project cost estimate by the NGO partners. This has resulted in some installations without electricity, and have therefore not started operation at the time of the field evaluation. For such communities, the Municipal and District Assemblies would need to provide the utilities after the PMU/UNDP handing over of the projects to the MDAs. Increasing dissatisfaction of non-project beneficiaries, leading to tendencies of arson during the dry season period

45. **Conclusion 6:** The Field Mission Report observed there is the need of adequate survey of the project interventions (boreholes, dams and canals, bee keeping and agro-processing installations) to determine gaps, maintenance and key improvements that are required to make the project interventions sustainable after handing over to the MDAs. Contractors should, however, be made to address defects within the defect liability period even after final handing over to the MDAs and communities.

46. **Conclusion 7:** Currently, there are important and validated inputs that can be adopted at the inter-ministerial level, to improve the management and planning of the water resource at the basin level, considering the impacts of climate change. This information can be updated and escalated to other watersheds through the Regional, District and Community-based Climate Change Adaptation Monitoring Committees that were established.

47. **Conclusion 8:** Although this indicator was not reached in time and data was not available on the representation of women, the 4 sub-basin plans were made up of more than 50 communities, taking into account the vulnerability and impacts of climate change on sectors and key communities that depend on it as its main source of water.

48. This provides the opportunity to incorporate climate change into local water resource management planning; however, given that the level of female participation is unknown, it is important to recognize that the impacts and vulnerabilities associated with this population could be underestimated.

49. **Conclusion 9:** The construction of 100 operational boreholes, benefitting at least 30,000 people (60% of whom should be women) was far exceeded and the communities have started making monthly financial contributions towards their repairs and maintenance without relying on central government support, demonstrating that this kind of activities can increase community self-management and thus its resilience.

50. **Conclusion 10:** The construction of 50 dams / dugouts for rainwater harvesting and water storage systems were not successful, the construction calculations were poorly done and there was no quality monitoring and follow-up, representing the weakest point of this project.

Lessons Learned

51. The Terminal Evaluation highlighted the following lessons learned which when addressed will enable replicability or scaling up this project; and will improve future implementation process and sustainable management. These include:

52. **Lesson 1.** Women and youth are particularly vulnerable and at risks to adverse effects of climate change impacts because of their peculiar circumstances in the communities. Climate smart water supply systems (dams, dugouts, functional boreholes) can effectively support productive small holder farming and reduce migration to other population centers where integrated and sustained under the government's policy of planting for food and jobs. The rice farmers in Upper East testified to this positive outcome of the AF project.

53. **Lesson 2:** CHACHE Shea nut small-scale processing plant (coordinated by Pure Trust) demonstrates that shea butter production has potential of growth from micro-scale enterprises (MSEs) to small and medium scale enterprises (SMEs) and increasing income generation at the community level, because of market access and supply demand for shea butter by private sector (local and oversea markets).Women received training from the NGOs, and have diversified into soap making as value addition to shea butter production chain. The project has the opportunity to be integrated in the government's flagship IDIF job creation programme.

54. **Lesson 3:** Local by-laws and rules by traditional authorities are enforceable for Shea tree crop conservation and protection for expansion and profitable shea nut processing and butter production. Chache Shea butter processing plant has assured supply of shea nut as the main raw material. This is because the traditional chief of Cache has instituted a local conservation rules banning the cutting of shea trees as economic trees, and has instituted an enforcement regime throughout the community. The compliance to the traditional rules is assessed as very successful; and providing the needed raw material for the Chache shea butter production. This conservation measure could be promoted in all the shea nut processing communities for sustainability of the climate smart livelihood intervention.

55. **Lesson 4 Community entry agreements for release of** parcels of land, for the livelihood project implementation were not honoured by some communities, including the Project Coordinator's own village community. Land tenure constraints made replacement difficult and delayed siting of the livelihood project particularly agro-processing centers. There is the need of purchase of lands for implementation of such livelihood projects to avoid potential delays. The relocations were far from utilities (electricity sources and/or water sources).

56. The additional cost of the extending the electricity and water were not factored in the project cost estimate by the NGO partners. These installations are still without electricity and have not started operation at the time of the field evaluation. For such communities, the Municipal and District Assemblies would need to provide the utilities after the PMU/UNDP handing over of the projects to the MDAs. Increasing dissatisfaction of non-project beneficiaries, leading to tendencies of arson during the dry season period

57. **Lesson 5:** In communities with functional boreholes for potable water and rehabilitated dugouts/dams with active canals for irrigation, dry season farming is well supported and profitable. Though communities increased their acreage for farming, and productivity increased, marketing of produce became a challenge due to lack of transportation to market centers. Communities wished local transportation (motor king) were included in the facilities provided by the project to the youth as part of the value chain.

58. **Lesson 6:** With exception of few instances of dry season farming NGOs in the communities, most of the project implementors of the intervention were located far from the community and did not have good communication channels for active interactions with beneficiaries. This highlights the question of effectiveness of contractors compared with services provided by to district-and regional level institutions such as CWSA, GIDA, MOFA Extension Services, Forestry Commission, Game and Wild Life.

59. **Lesson 7:** Complete burning of water hoses and surface pipe conduits and the farm was observed in one community. This was attributed to the dissatisfied non-beneficiaries who want the demonstration projects to be replicated on their lands adjacent to the project farms. This brings the need of sensitizing communities that the project was an adaptation fund demonstration that could potentially be scaled up as a result of the project success and its linkages to the government's flagship programme of Planting for Food and Jobs (PFJs).

60. **Lesson 8:** The development of the project (2011-2016) and implementation period (2016-2020) was subject to three political cycles (2012, 2016, and 2020). As a result, there were political interreference with respect to which government in power did initiate the project; and which implemented; and which takes the glory of the project results for electoral votes in a political economy. This led to some degree of interference by the Assemblymen in the completion of the projects in 2020 regardless of benefits to their communities. Political cycles need critical adaptative management measures to minimize impacts on community-based projects.

61. **Lesson 9:** Periodic flooding resulting from the spillage of excess water from the Bagre Dam in Burkina Faso continue to be a threat to climate change adaptation projects in the project districts particularly communities along the White Volta in the Bawku West District in the Upper East Region. Between 5th August 2020 and Monday 10th August 2020, the rehabilitated dams project in communities including Lamboya, Tampion breached as a result of been hit by the flooding resulting from the spillage of the two dams in Burkina Faso (Bagre dam and Kompienga dams). Farms planted with crops like millet and sorghum got inundated[16]. The threat of the floods does pose considerable challenge to the sustainability of the livelihood projects in those flood-prone districts.

[16] https://www.graphic.com.gh/news/general-news/bagre-dam-spillage-farms-underwater-in-bawku.html; https://www.wanep.org/wanep/files/2020/Sep/GHANA_Quick_Update_on_Bagre_Dam_Spilage.pdf http://www.nadmo.gov.gh/index.php/12-nadmo-articles/68-press-release-spillage-of-the-bagre-dam-and-nadmo-s-response-operation-thunderbolt-2020

62. **Lesson 10:** The success of the Chache community and others can be shared and promoted in other districts populations, at bank level and even at CSR level of private sector, to attract and mobilize support and their active participation in the production and processing value chain, which would increase the possibilities to increase profitability and move beyond the level of MSSE and MSE to SME. This specially applies regarding to Shea production and processing, agro-processing and fish farming.

Recommendations Summary Table

Rec #	TE Recommendation	Entity Responsible	Time frame
A	Category 1: Monitoring and Evaluation of Impacts		
A.1	- **Strengthening of local and institutional capacities for monitoring and maintenance of boreholes:** It is recommended to sign - Sign a Letter of Agreement with the district assemblies (in particular the Community Water and Sanitation Agency) to continue capacity building of the caretakers for all the boreholes constructed to enable a better monitoring and maintenance. The support should include: o Training of technician per village or group of neighboring villages. o Capacities to support the creation of a social business dedicated to providing a maintenance service. Given the number of boreholes, a fine-tuned business plan can be profitable. Such activity can be implemented by existing companies (agro-inputs providers for example).	MESTI/EPA/UNDP/ DA/CSWA	March 2021-March 2022
A.2	**Undertake evaluation of the project's impacts after it has been handed over to communities**: Evaluate the level of impacts of installation, operation and maintenance of boreholes, which were recently constructed, as well as the impact of fish farming, dry season gardening and some agro-processing activities, including the "household economic approach" as part of the development of an econometric monitoring of a sample of households, and an evaluation to measure the replicability and scale up of the project in the North Region. The objective of this is to demonstrate the reduction of vulnerability and increase of income at project and regional level and their potentialities.	MESTI/UNDP	March 2022

B	Category 2: Finances		
B.1	**Implement the final financial audit:** According to the agreement between AF and UNDP a final audited financial statement must be prepared by an independent auditor to be submitted within 6 months of the end of the implementing entity financial year. Considering the financial findings described before, the audit becomes of great importance to clarify the use of the funds and the actual project expenditure.	MESTI/UNDP/GIDA/MDAs	March 2021
C	Category 3: Livelihood Demonstration Projects		
C.1	**Evaluate state of the dams and boreholes before closure of project implementation:** To measure the state of functional operation of dugouts/dams' systems, it is recommended that a survey be conducted, which should include: - The quality of the rehabilitation of the dams achieved (noting the failures and losses recorded after rehabilitation); - The actual dam storage capacities restored relative to the design capacities to allow for dry season farming throughout the dry season period; - The extent of the dam storage capacities restored over and above the dam dead volume, which is regulated to meet the demand competing ecosystem and multiple use needs (livestock, aquatic life). - The drying up canals for irrigation due to control of Dead Volume of Dams. - The control of the pest impacts (for example: pest resistant varieties and effective traditional herbal methods).	MESTI/GIDA/MDA/CWSAs	March 2021

2 INTRODUCTION

Purpose and Objectives of the Evaluation

63. The Terminal Evaluation (TE) report objective is to assess the achievement of project results against what was expected to be achieved, identify to what extent the achievements and effects are /or not mobilizing toward impacts and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

64. In this regard, the TE report provides elements to promote accountability and transparency by assessing the extent of project accomplishments and making recommendations focusing on sustaining the various results and benefits undertaken under this project interventions.

Scope

65. The scope of the evaluation included desk reviews of relevant Project documents, key informant/Expert interviews, focus group discussions at the community-level, beneficiary interviews and interactions with other key stakeholders of the Project. The Consultants evaluated the specific objectives, the project output delivered, the outcomes achieved and significant milestones. The TE assessed results according to the criteria outlined in the Guidance for TEs of UNDP-supported GEF-financed Projects.

66. The TE built on the Mid-Term Evaluation outcomes; considered its conclusions and recommendations, as a reference point to assess the final project achievements and the quality of the results attained by the project. The evaluation encompassed but not be limited to the following:

a) Assessing the effectiveness and efficiency of the project implementation, including assessing the institutional arrangement, partnerships, risk management, M&E and project implementation;

b) Determining the relevance of the project in relation to the existing needs of the key stakeholders at the international, national and sub-national level;

c) Assessing the long-term sustainability of project interventions; and,

d) Identifying lessons learned and making appropriate recommendations.

67. On the other hand, an assessment of gender equality was addressed throughout the TE report and a dedicated section will address planned and unplanned gender results derived from project´s actions. Below are points discussed in the TE report:

- Discuss how effective the project was in contributing to gender equality and women's empowerment.
- Describe how gender results advanced or contributed to the project's environment, climate and/or resilience outcomes.
- Indicate whether the gender results achieved are short-term or long term.
- Indicate if there was any potential negative impact on gender equality and women's empowerment? If so, what can be done do to mitigate this?

- Indicate which of the following results areas the project contributed to (indicate as many results areas as applicable and describe the specific results that were attributed to the project):
  - *Contributing to closing gender gaps in access to and control over resources; or Improving the participation and decision-making of women in natural resource governance;*
  - *Targeting socio-economic benefits and services for women.*
- Discuss any further points on the project's gender results in terms of relevance, effectiveness, efficiency, country ownership, sustainability and impact.

68. **Cross-cutting issues:** In order to review to what extent the project outcomes and benefits are aligned with UNDP country programme strategies and SDGs, TE report reviewed how projects have successfully mainstreamed other UNDP priorities such as poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, gender equality, capacity development and knowledge management, as well as how projects incorporated the UNDP commitment to rights-based approaches in their design.

69. The TE will reviewed relevant documents such as country programme documents (CPD, UNDAF, UNSDCF) and the project's Social and Environmental Standards (SES) documents, including the SESP.

Methodology

2.1.1 Evaluation dimensions

70. The evaluation exercise commenced with all work done by the international consultant from homebased on October 10, 2020 due to the COVID-19 pandemic and the national consultant in-country. Both evaluators designed an evaluation matrix (Annex 6.5) and from it carried out stakeholder consultations; key informant interviews at the national, district and community levels; offline mobile surveys; and online/virtual progress update to the UNDP/project team. The initial Findings were subsequently presented to the UNDP project team. A detailed schedule and timeline for the entire evaluation assignment is in Annex 6.2.

2.1.2 Evaluation Design

71. To enable the Consultants efficiently executive this assignment, a combined approach of **qualitative** and **quantitative methods** was used. Information obtained from the qualitative methodology, was used to interpret quantitative results obtained. This combined approach did not only promote committed stakeholder engagement in the assignment but was also used as a means of validating data. ***Qualitative methods:*** 43 key informant interviews (KIIs), 31 focus group discussions (FGDs), Field Evaluation visits (FEVs), Stakeholder Consultations. ***Quantitative methods:*** 305 beneficiary interviews.

Data Collection & Analysis

2.1.3 Data Collection Instruments

72. Evaluation Instruments used included: In-depth interview guides for Key Informant Interviews (KIIs), Beneficiary structured questionnaire for beneficiary survey, moderation guides for focus group discussions (FGDs) and secondary data collection template (Progress Towards Results Matrix, Physical Progress report (PPR) and GEF CC Adaptation tracking tool).

73. The consultants are fully aware of the current trends to change delivery of service, following the outbreak of the COVID-19 pandemic and its immense impact on business-as-usual approaches. Consultants as COVID-19 mitigation measures, leveraged technological innovativeness (Microsoft teams and skype) for key informant interviews, Offline mobile data collection (CAPI) for beneficiary survey interviews. The evaluation team implemented applicable but strict health protocols, and generally manage project information gathering in a manner that was suitable to partners and stakeholders. Face-to-face key informant interviews at the district and community-level was carried out by the national consultant and the field mission team. Focus group Discussions were carried out while observing all COVID-19 health protocols.

74. Triangulation was used to ensure that empirical evidence collected from one source, for example documentation such as reports, was validated from other sources – interviews and offline mobile survey. The case where information was not available in document form but only available from interviews, the evaluators sought to validate opinions expressed and information given, by posing the same questions to more than one key informant. Anecdotal evidence was taken into account only if in the judgment of the evaluators, the information was important, and the source was considered reliable. In such cases, the possible limitations of this information have been noted. References to documentation are noted in this report, in most cases in footnotes. The full list of documents reviewed and/or consulted is in Annex 6.4 which also contains a short list of the websites that were visited and reviewed. The methodology was seen as culturally sensitive and appropriate and the reliability of the information received is not in question. The spread of interviewees, across genders and circumstances served to enhance the validity of the information obtained. A full list of experts interviewed by the evaluators is found in Annex 6.3.

75. With the timeframe of 11 days for TE field missions per the ToR and the spatial distribution of the project districts, 2 field mission teams were formed. The national consultant traveled from Accra to Tamale by Air, then assembled the field mission teams (6 field staff) for a one-day data collection training and details of methodology and protocols. The team first travelled to Savelugu district, where the national consultant worked with the whole team for a day-time, then split the field-team into 2 (***Team UW*** and ***Team UE***). **Team UW** will travel to Bole, Sissala East, Nadowli, and Nandom. **Team UE** will travel to Zabzugu, Bongo, Builsa South, Bawku West and Bawku Municipal.

2.1.4 Data Capture and Analysis

76. From a quantitative approach, data gathered from field (beneficiary individual interviews) will be captured using Off-online mobile data collection with tablets (CAPI). Microsoft Excel and/or Statistical Package for the Social Sciences (SPSS) software were used for data processing and analysis. On the qualitative side, data collected from focus groups, key informant interviews, field evaluation visits were captured in the form of video recordings, audio recordings, images and qualitative data analysis (QDA) was used and this will be based on an interpretative philosophy. Qualitative data was analyzed within three stages, i.e., Transcription, Coding, and Interpreting.

Ethics

77. In working for the UNDP, the two consultants paid particular attention to the UNDP principles of independence, impartiality, transparency, disclosure, ethical, partnership, competencies/capacities, credibility and utility. This is within the overall GEF-related objectives of (i) promoting accountability and global environmental benefits; and (ii) promoting learning, feedback and knowledge sharing on results and lessons learned among the GEF and its partners. Both consultants were guided by the criteria derived directly from the Human right and Gender equality (HR & GE)[17] principles of equality, participation, social transformation, inclusiveness, empowerment.

Limitations to the evaluation

78. It is possible that the reality is not defined correctly because of the subjective perspective of the qualitative approach (as respondents give their side of the story)?

Remedy: *The evaluators used specific and probing questions during the key informant interviews to retrieve collective answers that best defined the reality of project implementation.*

79. Results depend on the quality of respondents selected from the national, regional, district and community levels.

Remedy: *The evaluators have undertaken comprehensive analysis of the respondents/ stakeholders' involvement in project. The respondents were selected based on the analysis and in consultations with UNDP/MESTI to consider other additional criteria such as gender, location and active participation in the project to select the population for the evaluation. Additionally, the selected participants were randomly sampled.*

80. The availability of all selected persons, institutions, government representatives known and interacted with UNDP/MESTI and the project to respond to virtual key informant interviews as there will be no travels by the international Consultants to Ghana meet with respondents in-person due to COVID-19 pandemic.

Remedy: *The evaluators in collaboration with UNDP/MESTI developed the KII schedule. The UNDP/MESTI facilitated the response to the KII interviews by designating project staff*

[17] http://www.uneval.org/documentdownload?doc_id=980&file_id=1294

members who liaised with participants to come up with specific and individual online interview times. The UNDP/MESTI also formally wrote to selected respondents and introducing the Evaluators and the KII program to them. This approach was used effectively in obtaining responses to the interviews. The Evaluators maintained very effective and efficient connectivity for online Microsoft teams/Skype interactions with the participants of the KII.

Structure of the TE report

81. The structure of the evaluation report follows the Evaluation Report Outline in the Terms of Reference as provided by UNDP Ghana Country Office. The terminal evaluation report contains an "Title page" that provide general information about the project and the terminal evaluation; an "Introduction" which contains the purpose of TE, Scope, Methodology, Data collection and Analysis; a "Project Description an" section that outlines detailed information on the project; the "Findings" section analyses and assesses the project's design and implementation, including the project's M&E activities, as well as the levels of achievement of project results, and evaluates on the sustainability of project outcomes; conclusions, best and worse practices, lessons learned as well as actions to follow up on the project are included in the "Main Findings, Conclusions, Recommendations and Lessons Learned" section at the end of the report. An Executive Summary at the beginning of the terminal evaluation report summarizes all pertinent information on the terminal evaluation activities, findings, conclusions, recommendations and lessons learned. As required by its M&E Policy, UNDP stipulates that rating should be used to assess project outcomes, relevance, effectiveness and efficiency, M&E, IA and EA execution, and sustainability, an Evaluation Ratings Table, containing the evaluators' rating applying rating scales stipulated by the TE Evaluation Guidance, is included in the Terminal Evaluation Report.

3 PROJECT DESCRIPTION

Project start and duration, including milestones

82. The project was developed between 2012 and 2013. The Project was funded by Adaptation Fund[18], which was established under the Kyoto Protocol of the UN Framework Convention on Climate Change. The Adaptation Fund finances projects and programs19 that help vulnerable communities in developing countries adapt to climate change. Initiatives are based on country needs, views and priorities

83. The Ghana Proposal was approved by the Adaptation Fund Board on May 2015; and was launched in May 2016. The expected implementation period was May 2016 to April 2020. The project was expected to end in April 2020, however, due to a number of challenges including the late release of funds from the Adaptation Fund which impacted on the completion of some activities such as the construction of the dams and dugouts, Adaptation Fund approved a request for No-Cost Extension made by the Implementing Partner (MESTI) through UNDP. The project was thus granted No-Cost Extension to April 2020. The total project duration thus became 5-years from May 2016 to April 2021. The project was expected to end in April 2020, however, due to a number of challenges including the late release of funds from the Adaptation Fund which impacted on the completion of some activities such as the construction of the dams and dugouts, Adaptation Fund approved a request for No-Cost Extension made by the Implementing Partner (MESTI) through UNDP to extend the project to 31 December 2020. Subsequently, the IP initiated the procurement of companies to construct five dams. The procurement in accordance with the national Public Procurement Act, 2003 (Act 633)[20] prolonged. The contracts were eventually signed in August 2020. The construction period entered into prolonged rainy season in the project districts. Contractors commenced actual work October- November 2020. Under the circumstances, it was not possible for the contractors to complete the construction of the dams by the project completion date of 31 December 2020. Consequently, in October 2020, following a consultation and advice of the Regional Technical Advisor and the Management and Programme Support Analyst at RSC, the Ghana UNDP CO could use the project funds to take care of already signed commitments with the constructors. The CO advanced the remaining balance (See Annex 6.13) on the condition the IP would retire the funds in Q1 of 2021 after the completion of the work and the related payments to the contractors; and the funds would not be used for any new activity.

84. The project is being executed by the Ministry of Environment, Science, Technology and Innovation (MESTI) of Ghana in partnership with the United Nations Development Programme (UNDP), with close cooperation with sectoral ministries and agencies, NGOs and the private sector. The project has been under implementation since May 2016 in selected districts and communities in the then tree (3) Northern regions of Ghana, but currently Four (4) regions. The most recent region created being the Savanna Region, which was originally part of the Northern Region.

[18] https://www.adaptation-fund.org/about/

[19] https://www.adaptation-fund.org/projects-programmes/

[20] https://www.ppaghana.org/documents/Public%20Procurement%20Act%202003%20Act%20663.pdf

Key milestones of the project

85. The project achieved community-level cooperation in the implementation of community-based livelihood intervention demonstration projects (dry season gardening, bee keeping, fish farming, Agro-processing and agri-business) that can be integrated in the government's flagship agriculture policies, programs and projects, namely planting for food and jobs (PFJs), rearing for food and jobs (RFJs) and aqua-culture, 1 District 1 factory (I1D1F), The key milestones are summarized in Box 1.

BOX-1-Key Milestones

- A total 145 boreholes climate smart ground water system were drilled relative to a target of 100 boreholes as climate smart community-based portable water supply system in 50 communities in all the 10 project districts; serving as alternative sources providing good drinking water relative to hither-to polluted surface water systems. This reduces vulnerability and risks of the communities to vulnerability of surface water resources to drought, which lead to water scarcity for multiple uses in the dry season.
- In all, 10 dams/dugouts[1] climate smart water supply systems were completed by 31 December 2020 and additional 5[1] would be constructed/ rehabilitated by March 2021 bringing the total to 15 dams /dugouts. Out of the dams/dugouts, 45 small irrigation systems, one each in 45 communities were established.
- A total of 39 livelihood fish farms projects were established in rehabilitated dams/dugouts in 23 Communities benefiting over 790 direct beneficiaries.
- 50 bee keeping livelihood schemes established in all 50 project communities for honey production benefiting both women and men as direct beneficiaries.
- 50 dry season gardening livelihood schemes for predominately women were established in 50 communities to undertake the small-holder climate smart farming of pepper, okro, tomatoes, among others during the dry season.
- A total of 24 Agro processing livelihood centers were constructed; and equipped with appropriate technology equipment for processing of shea, groundnut, soya beans and rice as agribusiness value-addition in in 24 communities.
- The project produced valuable knowledge management and transfer products on Climate Risks Management (CRM) for the Volta and the Oti basins in the 4 northern regions of Ghana. They are:
    - Downscaled and historical climate projections on for the White Volta, Black Volta and Oti Basins
    - Ecological monitoring -Oti River Basin[1],
    - Ecological monitoring -Black Volta Basin[1],
    - Black Volta river basin management plan[1]
    - Strategic environmental assessment (SEA) of the Oti River Basin and the Black Volta Basin in 2017; initiated in the process of developing IWRM plan for the Volta Basin.
- The Black Volta Basin Board and Oti River Basin Board were established in September 2017 and November 2017 respectively as institutional arrangement for sustainability. The Boards form an integral part of the decentralized Integrated Water Resources Management (IWRM) of Ghana's river systems including Densu, White Volta, Ankobra, Pra, and Tano. project has established two additional Volta River Basin Boards.

Development context: environmental, socioeconomic, institutional, and policy factors relevant to the project objective and scope

86. Ghana ratified the United Nations Framework Convention on Climate Change (UNFCCC) in September 1995. Ghana committed itself to pursue coordinated actions to, among others,

reduce climate change impacts on the most vulnerable people, while continuing to advance national economic development (NC3, 2015). As a non-Annex 1 Party (NAIP) to the Convention, and in pursuant to Article 4, paragraph 1, and Article 12, paragraph 1 of the Convention, Ghana subsequently prepared and submitted its Initial National communication (INC) in 2001[21]; Second National Communication (NC2) in October 2011[22]; Third National Communication (NC3)[23] in July 2015 and Fourth National Communication (NC4)24 in August 2020.

87. The various national communications, among others, identified the impacts and vulnerability of the national economy, analyzed policies and measures and as well as urgent priority interventions. This was towards enhancing Ghana's resilience and adaptation response measures to reduce vulnerability and risks to climate change impacts on its people in designated six Agro-ecological zones of the country. The INC specifically studied climate impacts and vulnerability of water resources and agriculture of Ghana (NC1 Section 3.1 pg. 43).

Socio-economic context

88. USDA Forest Service (2011) reports the results of the assessment of social vulnerability to climate change conducted on a district level in Ghana. A vulnerability index was used and the assessment based on 11 socio-economic indicators: Ability to survive, agricultural employment, dependent population, distance from drinking water, distance from food market, female-headed households, illiteracy, malnourished children, poverty perception, road accessibility, and unimproved drinking water source. The data indicates that Northern Ghana (composed of the Upper East, Upper West and Northern administrative regions) have the highest overall social vulnerability to climate change. The Upper East, Upper West, and Northern regions also have a much higher incidence of poverty than other regions of Ghana.

89. The Ghana Statistical Service, 2019 report of Poverty Incidence[25] of administrative regions in Ghana indicate that the incidence of poverty in the Northern, Upper East, and Upper West Regions have been consistently higher than the national average since 2005/06. The regions experienced worsening poverty rates between 2012/13 and 2016/17. The Upper West region has the highest poverty rate among all the 10 regions in Ghana, with a rate of 70.9 percent. The Northern Region (61.1 percent), and Upper East Region (54.8 percent). Indeed, of the 6.8 million persons who are deemed poor in Ghana in 2016/17, about half a million are from the Upper West Region (574,794.9), while the Northern Region with a poverty incidence of 61.1 percent accounts for one-fifth (20.8 percent) or 1.8 million of the poor in Ghana. In terms of contribution to extreme poverty, the Northern Region (37.5 percent) accounts for over a third of the extreme poor in Ghana, far more than any other region. In 2016/17, the Northern Region, Upper East Region, and Upper West Region

[21] https://unfccc.int/documents/77592
[22] https://unfccc.int/documents/77595
[23] https://unfccc.int/documents/66194
[24] https://unfccc.int/documents/231806
[25] https://www2.statsghana.gov.gh/docfiles/publications/GLSS7/Poverty%20Profile%20Report_2005%20-%202017.pdf

together accounted for 67.2 percent of those living in extreme poverty in Ghana. The project livelihood investments were thus meant to provide income generation activities in addition to climate smart water supply to respond to the high-level incidence of poverty, which is exacerbated by climate change impacts and vulnerability of the communities.

Project responds to National Climate Change Adaptation Strategy

90. Sectoral Vulnerability Impacts and Adaptation Assessment in NC2 revealed the substantial impacts of climate change and vulnerability of water resources as well as women's livelihoods. The poverty situation is exacerbated by climatic stress in northern regions where temperatures are already relatively high. Lower agricultural productivity and periodic flooding are also increasing the pressure on the vulnerable youth from the north to migrate to the south. The NC2 resulted in prioritization of 10 adaptation options, including water resources. The 10 prioritized adaptation options contributed to the development of the national climate change adaptation strategy (NCCAS). The NCCAS was aimed at facilitating national response to increase Ghana's resilience to climate change impacts. The NCCAS26 covered the period of 10 years from 2010 to 2020.

91. Ghana has subsequently implemented various national adaption initiatives27: studies, programs and intervention projects prior to the development of this UNDP/AF/GOG adaption project. The 'Netherlands Climate Assistance Programme' (NCAP) NCAP was implemented between 2004 and 2007 by ETC International with local support by the EPA and NDPC. The Climate Change Adaptation and Development Programme Initiative (CC-DARE) was a joint program by UNEP, UNDP, the UNEP Risø Centre for Energy, Climate and Sustainable Development (URC) and the UNEP Centre for Water and Environment (2009-2010); The World Bank led study on the 'Economics of Adaptation to Climate Change' (EACC, 2010).

92. Ghana participated in UNDP's Africa Adaptation Programme (AAP) on 'Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa' project; CARE, an international NGO focusing on fighting global poverty, launched the 'Adaptation Learning Programme (ALP)' for Africa (2010-2014). In 2008 UNDP/ National Disaster Management Organization of Ghana (NADMO) implemented a project on 'Enhancing National Strategies for Effective Disaster Risk Reduction in Ghana'; and the Ghana North Sustainable Development, Disaster Prevention and Water Resources Management (GFDRR) from 2008-2013.

Project linkages to *nationally determined contributions, national climate change policy, medium-term development frameworks, and government flagships projects and SDGs*

93. The project proactively had linkages with one of the key pillars of NDC Adaptation Actions, that is "Agriculture resilience building in climate-vulnerable landscapes submitted under the Paris Agreement to the UNFCCC in 2015. The project also proactively responded to the

[26] https://www.adaptation-undp.org/sites/default/files/downloads/ Ghana national climate change adaptation strategy nccas.pdf

[27] https://cdkn.org/wp-content/uploads/2012/04/Ghana-initiatives-mapping-climate-change-May2011.pdf

key objectives of Medium-term national development priorities (GSGDA 2 - 2014 to 2017), which emphasized Accelerated agriculture modernization and sustainable natural resource management under SDG 2: Zero Hunger; and SDG 13: Climate Action; and addressed Medium-term National development priorities (Agenda for Jobs - 2018 to 2021) that is aimed at Livelihood Empowerment Against Poverty (LEAP) Programme; Agricultural development and rural transformation flagship programmes (- planting for food and jobs, one village one dam, one district one warehouse); as well as development of fisheries under aquaculture for food and jobs. These were achirid on the National climate change policy priorities Focus area 1: developing climate- resilient agriculture and food systems.

Project proactively contributes to and responds to National Adaptation Plan (NAP, 2020) objectives

94. Ghana has launched National Adaptation Plan (NAP) project in July 2020 to guide the process of integrating climate change into national decision-making and effective adaptation in the country. Professor Kwabena Frimpong-Boateng, Minister of Environment, Science, Technology and Innovation, who launched the Plan, said the National Adaptation Planning process was one of the efforts by the government to address the impact of climate change from a more integrated, coordinated and sustainable manner. "These risks and many other more are indications that Ghana should not address development as business as usual but rather translate these risks to opportunities for policy responses that will put the structures of the Ghanaian economy on climate resilient footings"[28].

Problems that the project sought to address: threats and barriers targeted

95. The World Bank EACC study temperature trend projected over the period 2010–50 indicates warming in all regions, with temperatures increasing the most in the northern regions where the forecast indicates a temperature increase up to 2.2–2.4°C. (See Figure 3). The range of temperature (maximum–minimum) indicates that the project area is expected to witness the widest range of temperature variability (5.7°C range).

96. The precipitation forecast also reveals a cyclical pattern over the period 2010–50 for all regions, The Northern and Southern Savannah regions are expected to be relatively dry. flows and runoffs, particularly in the Volta River basin, increase the risk of drought frequency and vulnerability of agricultural systems.

97. While the southwestern part of Ghana will experience increases in runoff, the Black Volta basin will experience reductions in runoff under Wet and Dry scenarios. The Oti basin will experience a small increase in runoff in the Wet scenario and 29 percent reduction in the Dry scenario. The fluctuations in stream floods and/or droughts in urban and rural areas. The need of negotiation of the spill from the Badagry Dam in Burkina Faso, which adds to human-impacts, is essential to all flood management response in the Volta Basin in the project area.

[28] https://mesti.gov.gh/ghanas-national-adaptation-plan-project-launched-accra/

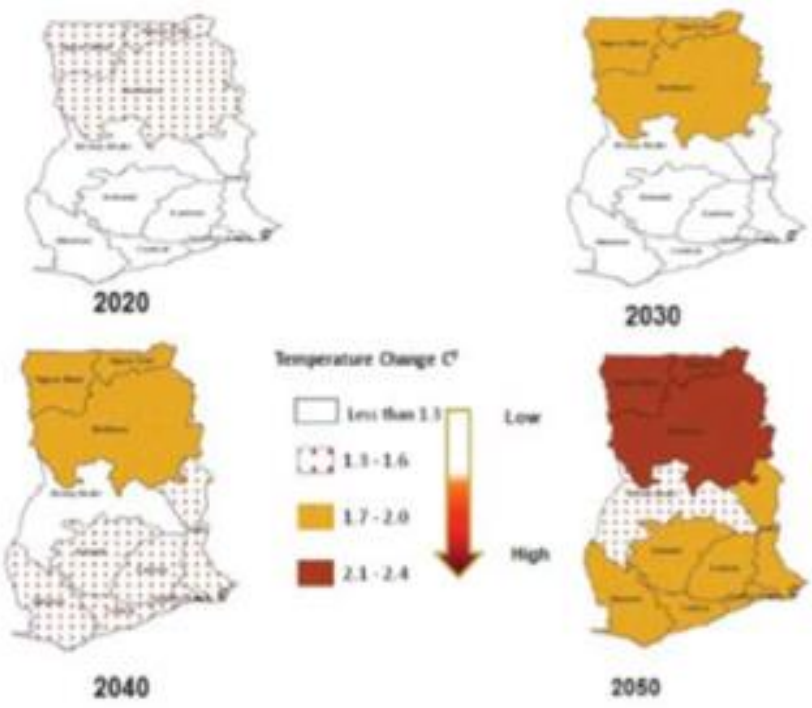


Figure 3: Temperature Trends in Project Area, 2020-2050

98. The project intervention areas have high degree exposure to climate variability and climate change characterized by increasing temperatures, erratic rainfall, and thus contributing to low socio-economic development. Even within the humid months of June to September 10 to 14 days of dry spells are common. Potential evaporation is in the range of 2000 mm per year. Most of the soils have low water holding capacity due to their light textured nature and low organic matter content. High surface runoff rates during the rainy months' result in silting up of water storage facilities, such as small dams and community dugouts.

99. The project areas within the Volta basin experienced severe drought in 1983. Since the late 1990s, floods have been increasingly frequent in the northern regions. Floods affected more than 300,000 people in 1999, 630,000 in 2007/08 and 140,000 in 2010, causing deaths, damaging farmlands, and destroying livelihoods. This resulted in severe hunger, affected the poor and reduced gross domestic product over the years. The most severe flood occurred in 2007 during which 630,000 people were affected, through losses of life and displacement, and extensive infrastructural damage and loss of crops[29]. The extreme events are attributable to impact of climate change in the Volta basin, exacerbated by recent events of the unplanned spilling of the Burkina Faso Bagre Dam periodically when the country is responding to high and erratic precipitation due to climate change.

100. The project document identified and sought to address the key climate-related problematic situations in the project area identified in the various climate change studies, the national communications, policies, programmes and projects. Specifically:

a. The low capacity of local people to protect themselves and livelihoods from exacerbated floods and droughts by climate change and land degradation, which leads to migration during the dry season.

b. The exacerbated expansion of desertification by climate impacts. According to the Environment Protection Agency of Ghana, out of the 35% (83,489km2) of Ghana's total land area prone to desertification, 33% (78,718km2) is in the northern regions.

c. Negative impact of drought and high temperatures on water resources and agricultural production in the 4 northern regions, which have predominantly rain-fed agriculture.

101. The World Bank led-study on the 'Economics of Adaptation to Climate Change' (EACC, 2010)[30] identified migration as one of the key outcomes of the impacts of extreme events on the communities within the project area. Livelihood interventions that increase incomes, health, education; coupled with disaster risk reduction to floods do hold very promising response actions to increasing resilience and adaptive capacity; and reduce vulnerability and to impacts of climate change in the project area.

102. The project document also emphasized that although the GoG has invested in major catchment development programmes, the basin wide management plan for the White Volta, for example, failed to take into consideration climate change impacts and the vulnerability of key sectors and communities that depend on it as their primary source of water. Furthermore, there was no overarching management plan for the White Volta without plans for the Black Volta, the Oti River and the small basins and tributaries of the White Volta directly used by local communities. For both the main basins and the sub-basins, there was the need to mainstream climate change into the current water resource management planning.

103. The project also sought to *mainstream climate change adaptation in the socio-economic activities of the project communities:* Ghana's medium-term development strategy is captured in the Ghana Shared Growth and Development Agenda (2010- 2013) was formulated

[29] Trend Analyses of the Impact of Climate Variability on the Black Volta, White Volta And Oti River Basins I (Water Resources Commission, 2017)

[30] Ghana - Economics of Adaptation to Climate Change (EACC): Main report (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/278431468337213682/Main-report

during the development to the project integrated climate change into Ghana's decentralized planning system and reflected CC in a number of sector plans. However, NC3, 2015 acknowledged that climate mainstreaming was taking time to trickle down into the various facets of national development. This was because CC was yet to be integrated into the national medium term expenditure framework (MTEF) with respect to budgeting, implementation, monitoring and evaluation. This project thus sought to mainstream climate change adaption by climate resilient water supply and village irrigation systems for dry season gardening as climate smart small holder farms at the community level. This was achieved through providing climate resilient water supply, namely a) rehabilitation and improving storage capacity of existing village dams, and b) construction of dugouts. These systems check flooding as flood plains are drained and the water harvested into the dams and dugouts expanding water capture, harvesting, and storage, for small scale irrigation systems.

Programme Objective:

104. The main objective of the project was to enhance the resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in the 3 northern regions of Ghana. This objective was achieved through key results centered on the improvement of water access and also in the increase of institutional capacity and coordination for integrated water management to support other uses of water resources, especially for the diversification of livelihoods by rural communities.

Expected results

105. The expected project results based on the original Project Document (ProDoc) were under the respective outcomes of the project components as follows

106. **Outcome 1:** Improved basin level management and planning of water resources, taking into account climate change impacts on surface and groundwater sources. These include Downscaled and historical climate projection. Revised White Volta Plan completed and adopted at inter-ministerial level. The Regional, District and Community based Climate Change Adaptation Monitoring Committees established.

107. **Outcome 2:** Climate resilient management of water resources by 50 communities in 4 regions in northern Ghana, including 50 community water management plans implemented by community institutions with at least 50% women representation; 100 operational boreholes, benefitting at least 30,000 people (50% of whom should be women). Rainwater harvesting systems in place, providing water supplies to 50 community facilities; 50 operational irrigation systems, benefitting at least 2,500 farmers

108. **Outcome 3:** Enhanced diversification of livelihoods by 50 communities in northern Ghana implemented. They are 50 dry season gardening schemes for women established, directly benefitting at least 1,000 women; 40 community tree nurseries and wood lots, incorporating bee keeping, established; 40 community level women led agricultural product (shea butter or honey) processing schemes established, directly benefitting at least 1,200 women; At least 50% of the households in the target communities increase their income by 30% by the end of the project; community tree nurseries and wood lots, incorporating bee

keeping, established; 20 community fish farms established, benefitting at least 10,000 people (60% of whom should be women).

Summary of Main stakeholders

Table 4: Main Stakeholders

Institutions/Persons		Remarks	Roles and responsibilities
1.	Secretariat/Project Management Unit (PMU), Ministry of Environment, Science, Technology and Innovation (MESTI)	National Programme Director, National Programme Coordinator, Technical Officer, Climate Change Oversight and M&E, Auditor (Internal/External)/ Procurement/ Project Accounts, IT support for project	Overall responsibility for project coordination, management, monitoring and evaluation as well as fiduciary management, with respective sector agencies responsible for management of field implementation, under the oversight of PSC
2.	UNDP Country Office (CO)	UNDP CO, UNDP RCU, UNDP RTA, UNDP EEG	Verify the project monitoring and evaluation (M&E) are in accordance with established UNDP procedures and carried out by the project team.
3.	Project Steering Committee members	High-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies, civil society organizations, and other development partners	• Determine the necessity of further design or development of specific risk mitigation measures to avoid maladaptive outcomes. • Oversee the development of the portfolio of community-based projects, ensuring its alignment with AF requirements and that lessons learned are discussed and evaluated.
4.	Environmental Protection Agency (EPA)	Field regional and zonal EPA staff involved in filed monitoring and evaluation of the NGOs	• To be the technical unit of the project, leading the implementation of all components on the ground. • Together with the PMU, to identify and engage the relevant Ministries and agencies to perform specific sub-components of the project. • To organize project operational activities, workshops, educational outreach in the project areas to provide the opportunity to discuss climate change adaptation, water resources management and rural livelihood issues with government agencies, related projects, beneficiary communities and development partners. • Timely submission of inputs on project reports to steering committee, as well as semi-annual updates and

			quarterly financial reports according to formats provided.
5.	Ministry of Food and Agriculture (MoFA)	AEA and District Director of Agriculture (DDA) per project district	· Provide technical backstopping support to field implementation of aspects of the project under their mandate (especially Component 3) · Periodically provide technical input to PMU for regular update of project implementing strategies and options. · Development of capacity building programs/modules for AEAs and Community Ex-tension volunteers. · Submit to the PMU, timely input to annual plans and reports, semi-annual updates and quarterly financial reports according to formats provided. · Support farmer-based organizations and farmers with regular agricultural extension services for enhanced technology adoption and improvement in crop productivity · Train different interest groups on alternative livelihood options introduced by the project under component 3 (e.g., dry season gardening, tree nursery management, bee keeping, agro-processing, etc.) · Ensure sound management of project assets under its supervision (e.g., irrigation infra-structure in communities).
6.	Ministry of Finance (MoF)		· Be represented on the steering committee to provide technical backstopping in respect of budgeting, financing, procurement and expenditures on specific aspects of the project. · Have representation on the Project Validation committee which will be responsible for the review of technical reports and recommend to MESTI via the PMU approval of re-ports, evaluate technical and financial proposals of studies and other related documents
7.	Adaptation Committees	Regional, District and Community level Adaptation committee	Serve the programme objectives but with a wider view of supporting the implementation of the development of a National Climate Change Adaptation Strategy

8.	Water Resources Commission (WRC)	Consultants in the revision of the baseline CC Impact and Vulnerability assessment; and development of the Back Volta and Oti Basin management plan	· Supervisory role in components related to water use planning and management (com-ponent 1) · To support developing TOR for various technical assignments in areas within their mandate · To support in the organization of workshops & meetings in project areas within their domain/mandate · To review all documents produced by technical experts and consultants in their man-date areas under the project · To adapt documents generated from the project for their use as an institution · To support other institutions with technical advice during implementation of their sub-components of the project.
9.	Water Research Institute under CSIR	Engaged in the Fish Farming livelihood project implementation.	To provide technical backstopping for the project in respect of all research activities in the areas of water quality for aquaculture, water levels and impact of climate change on river basins and water resources in project communities.
10	Ghana Irrigation Development Authority (GIDA)	The Regional GIDA Offices who conducted the baseline evaluation of the dams and dug-outs; partnered the PMU as supervising and monitoring unit for the dam rehabilitation and construction	· Support in the design, construction and installation of all irrigation infrastructure in target communities. · To provide technical support to communities and other project implementing partners such as MoFA in the use and maintenance of the reservoirs and installed irrigation systems
11	Community Water and Sanitation Agency (CWSA)	The national CWSA in Accra involved in the borehole water system project implementation	· Support the project in the construction of boreholes, repair and rehabilitation of existing dams and dugouts, construction of sand dams and rain harvesting systems as well as training of WATSAN committees, water boards and water users' associations in proper management of community water resources and systems. · Train local artisans to support communities with periodic and timely maintenance of boreholes and dams/dugouts,

12	Fisheries Commission	Partnered as monitoring and supervision of the fish farming livelihood intervention project	· Support the project in establishing viable fish farms as alternative livelihood option for project communities. · The identification of communities with prospects for sustainable aquaculture enterprises. · To be responsible for capacity building in the areas of cage/pond construction and management for improved productivity on sustainable basis. · To work closely with MoFA to explore the possibility of integrated aquaculture-vegetable enterprises to ensure optimum use of water resources.
13	National Fire Service (NFS)		· Support the project in the creation of buffer zones and fire belts as well as periodic training of community groups in fire prevention and management in forests and wood-lots · Support in forming or reviving existing yet weak fire volunteer squads to protect established woodlots.
14	Forestry Commission (FC)		· Manage project activities through its Forest Services (FS) and Wildlife Divisions in the regions and districts of the project. · Preparation and review of Activity and Management Plans relating to tree nursery establishment, woodlot establishment and creation of the riparian buffer zones. · Undertake awareness creation about woodlot establishment, biodiversity conservation and control of firewood and charcoal production. · Assist in capacity building local community members in the establishment of tree nurseries, woodlots and riparian buffer zones. · Support districts and communities to undertake enrichment planting in degraded areas along watercourses. · Support districts and communities to establish and manage green firebreaks. · Ensure that safeguards provisions are followed in management plans, in

			particular those related to access restriction in the buffer zones
15	District Assemblies (DA)		· Be responsible for monitoring and overseeing project activities being undertaken in all communities in the respective districts
16	SADA		To play a supporting role in the implementation of agricultural and aquaculture as well as irrigation projects in project districts and communities.
17	NADMO	Responsible for the Disaster Risk reduction of the periodic impact of flooding of the Bagre Dam, Burkina Faso on communities in the project area during periodic spill of excess water from the Dam[31].	· Supports NFS in preventing and managing disasters in buffer zones and other protect-ed areas in project communities. · Training in flood prevention and management
18	NGOs	46 NGOs, partnered the PMU in the implementation of the Livelihood interventions projects in all the 50 communities	· Support community engagement and provision of some training in the areas of dry season gardening, water resources management planning, riparian buffer zone and CAC establishment and management as well as management of non-farm businesses. · Complement the technical expertise of District and Regional staff of EPA, MoFA and FC to provide extra capacity for community planning and institutional development. · Support specific technical activities, such as the introduction of new livelihood options or water management technologies, in cases where they have specific expertise and experience in those activities. · Play an active role in learning workshops for inter-District exchange and lesson sharing.
19	Mass Media partners		· Be engaged to support regional and district learning networks, including publicizing project workshops and results, and supporting extension efforts by providing access to technical information, supporting peer

[31] https://www.graphic.com.gh/news/general-news/ghana-news-burkina-faso-spills-bagre-dam-nadmo-intensifies-preventive-measures-in-northern-ghana.html

			discussions and recognition of strongly performing communities or individuals.

Theory of Change

109. The ToC was analyzed by the MTE and this TE reaffirms its analysis and the synthesis that it makes of the project in that scheme (Figure 4). The majority of entities encountered during the MTE as well as consultants consider that the PRODOC is of an excellent quality, with an appropriate description of the context and challenges in Northern Ghana in terms of adaptation to climate change, resilience and development.

110. There is a clear link between the problem analysis and the proposed solutions. The activities are well described and are relevant enough to contribute to the objective of the project. There is a "funnel approach" between component 1, 2 and 3 with a very methodical and iterative approach: (1) a general analysis of the trends in climate, (2) the design of long-term management plan of the river basins, (3) confirming the relevancy of adaptation activities for the communities and (4) community entry to prepare the activities.

111. The logical framework was organized around three general hypotheses. It will be possible to enhance the resilience and adaptive capacity of rural livelihoods facing climate impacts and risks on water resources in the 3 northern regions of Ghana if: 1) The management and planning of water resources at basin level are improved and if they take into account climate change impacts on surface and groundwater sources, 2) The management of water resources is climate resilient in Northern Ghana, 3) The livelihoods of the communities in northern Ghana are enhanced through diversification.

112. The indicators are considered as SMART enough, and consistent with the outcomes and outputs. The difficulties presented by the project are not related to the logic of change, but to aspects related to: disbursement of funds by Adaptation Fund in a timely manner to ensure project delivery within the stipulated timeframe, recruitment processes, absence of a tool to monitor the improvements in livelihood at local and district level and NGOs involvement in the project formulation process for a better understanding of the systematization of results according to indicators and a gender perspective. In the absence of the ToC outlined in the project, the difficulties could probably have been higher.

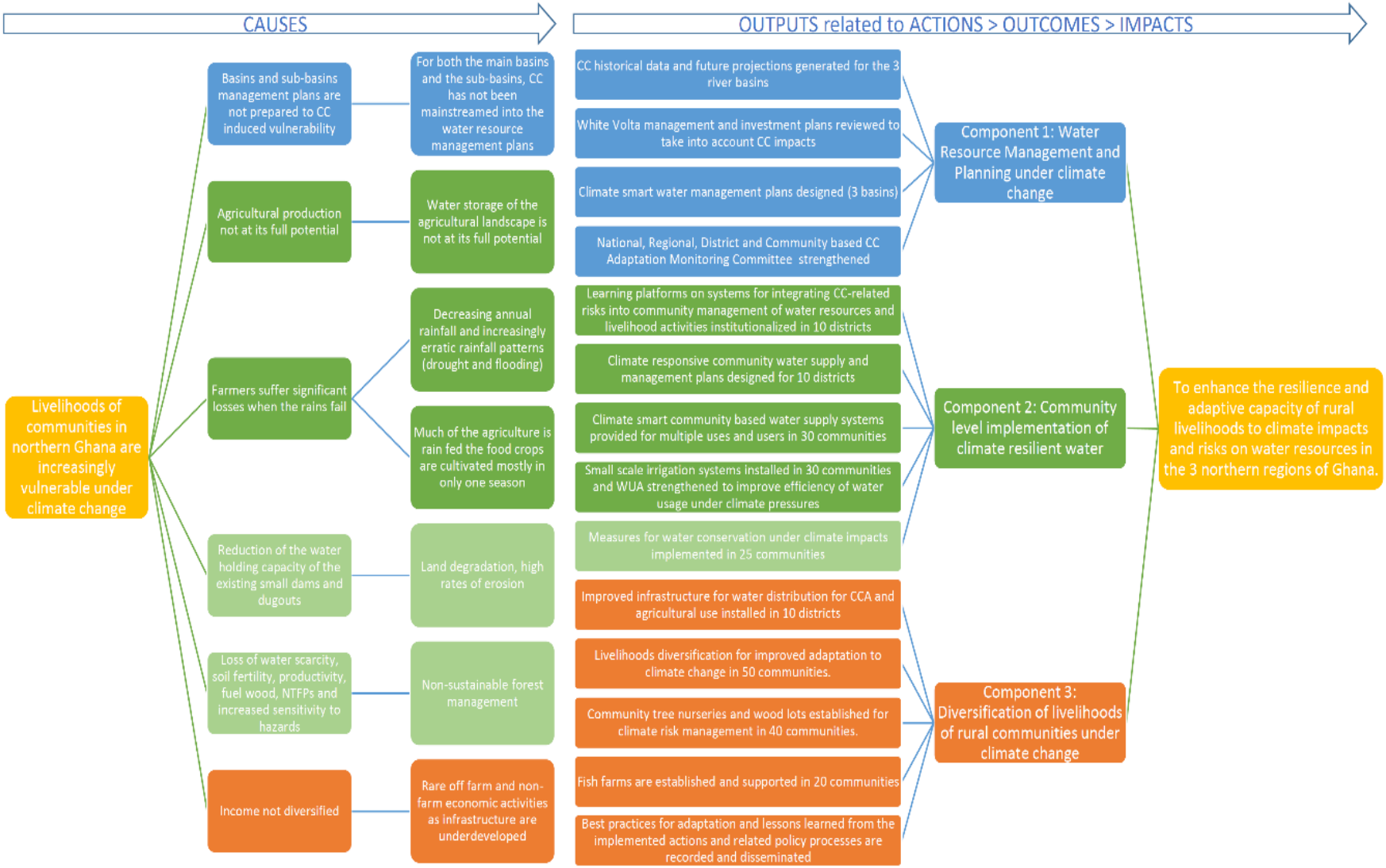


Figure 4: Theory of Change

4 FINDINGS

Project Design/Formulation

4.1.1 Analysis of Results Framework: project logic and strategy, indicators

113. The ease of monitoring the outputs, its activities and its achievements, showed in the PPR, demonstrated the project objectives were clear, practicable and feasible. The PPR demonstrated the time frame of the activities were accomplished, and explained the project objectives in its evolution from a "funnel approach" perspective between component (1) Water Resource Management and Planning under climate change, (2) Community Level Implementation of climate resilient water resource management activities, and (3) Diversification of Livelihoods of Rural Communities under climate change.

114. These components show a clear relationship with the problem analysis and the proposed solutions, addressing country priorities and government projects such as "one village one dam" policy and "water for all" initiatives. In this context water is recognized as a crosscutting resource underlying the Growth and Poverty Reduction Strategy (GPRS 11) of Ghana and the National Water Policy, with direct linkages to the realization of all the previous eight Millennium Development Goals and some of the current Sustainable Development Goals (SDG).

115. The project was designed to take into account local structures and partners, the consolidation of institutional planning and the management of water resources. This strengthens the organization and capacity of the communities through the implementation of water management activities and livelihoods diversification to mitigate the effects of climate change. In addition, the consideration of the monitoring of the water resource and its plans, allows to ensure the basis for the rest of the other activities.

116. Analyzes of different sources at the national and regional levels (governmental or independent), show that, due to their climatic patterns, drought and the strong dependence on local economies and livelihoods on rainfed systems, these objectives are suitable for the three Northern regions (Northern, Upper West and Upper East regions), which are the most vulnerable to climate change. The Government of Ghana (GoG), address climate change-induced decreases in the availability and increasing unpredictability of water resources, and the associated negative impacts of these trends on the livelihoods of rural communities.

117. All the major government stakeholders have been consulted during the development of the project proposal and there is consensus with regards to the main components as well as the log frame (outcomes, outputs, activities, indicators etc.) of the project.

118. The Results Framework was defined in three workshops with all major stakeholders during the Project conceptualization and design phase in July, August and September 2011. The Ministry of Environment Science and Technology (MESTI) coordinated consultation as part of its mandates and as the key governmental counterpart of the process. The draft proposal was then presented to a wide range of stakeholders (national/regional and district scales and from the government and civil society sectors) at a national workshop in November 2011 and their inputs to comprehensive log frame and activities were used to further develop the Project design and the elaboration of the Project Document. Following this workshop, a mission was carried out to the northern region in December 2011 for consultation with the three target

regions to establish the baseline of communities' vulnerability towards and to find out about community priorities for adaptation.

119. Since the community consultation meeting, this proposal has been developed in considerably greater detail and it is the results of the community consultation which have been the most important elements in guiding this detailed proposal development.

120. In the Project document can observe a comprehensive Results Framework with defined success indicators for project implementation, indicating where sex-disaggregated data, baseline values, targets and indicators would be collected, as well as the respective means of verification. According to the project document, the Project monitoring and evaluation (M&E) was in accordance with established UNDP procedures and was carried out by the project team, verified by the Mid Term Evaluation (MTE) and the UNDP Country Office in Accra.

121. The Project Results Framework, included quantified Outcome and Output targets as well as specific, measurable and time-bound indicators. However, the reports from NGOs denoted an inadequate linkage of project outcomes with outputs, although, most of the activities were carried out. This fact reflected indicators were not clear in some NGO projects.

122. The MTE Report mentioned there were a need to develop a econometric tool to monitor the improvements in livelihoods (reduction of vulnerability and increase of income), measuring the main indicator of vulnerability reduction of the project which is "changes in access to water and diversification of livelihood activities and income generation will increase by 30% in at least 50% of households in the communities", however, no records were found reflecting the efforts made to address of this recommendation

123. The M&E plan budget and timetable and relevant actors were precisely detailed for each M&E activity. For these reasons, the M&E system quality as described in the Project Implementation Mechanism (PIM) were considered very high in the MTE Report. Despite this, when the "log Frame" document was reviewed, it seemed that its last update was in 2017.

124. The MTE team suggested that the M&E system should have mentioned the districts adaptation monitoring committees in the monitoring system (as part of the "Role and Responsibilities" named in the table of the PRODOC), but there is no information to support that this recommendation was addressed.

4.1.2 Assumptions and Risks

125. There were six key risks underlying the project in connection with the target sites, detected during the formulation phase. All of them were well-articulated in the Project document and reduced at the end of the implementation, except the "insecurity in the area– terrorist attacks or regular banditry – may jeopardize the implementation and follow-up of the programme."

126. Besides these, new risks were reported in the PPR and solved by modifying the activities, including:

- Political interference in the selection of project beneficiaries and concrete adaptation interventions. Resolved by constant dialogue with political actors and the development of clear selection criteria agreed by all stakeholders to address this challenge. Year 1

- Resistance by communities along river basins not selected as project beneficiaries. Solved by the establishment of a community climate change adaptation monitoring committee and a participatory process for the selection of beneficiary communities. Year 1. In addition, some communities were also clustered (merged and considered as 1 project community as a way of resolving the problem.
- Lack of clarity of roles and responsibilities of key government institutions: where solve by a draft. Project Implementation Manual spelling out clear responsibilities of each project partner. Year 1
- Late release of funds. Activities like planting trees, drilling of boreholes and rehabilitation of dams had to be put on hold. UNDP country office advanced some funds. Year 2 and 3
- Resistance by farmers whose farm area were selected to be used as buffer zones for rivers and dams. Solved by working with the community leaders, affected farmers and community climate adaptation committees during focus group discussions and community engagements meetings applying Agro-forestry and involving them in planning, planting and monitoring. Year 3
- Activities such as the mechanization of the boreholes and the finalization of the community water management plans where very slow. Steps to address this challenge included the development of procurement strategy to address this challenge. Year 3

127. The Project document mentions that during this project a UNDP risk log will be regularly updated in intervals of no less than every six months in which critical risks to the programme have been identified, however, records were found only in the annual PPR.

128. Land tenure risks were very difficult to address where the project beneficiaries did not have parcels of land themselves. It is recommended that parcels of land should be properly acquired for future projects for beneficiaries. The traditional approach to leasing land for equity shares could be explored to facilitate land availability on sustainable basis.

4.1.3 Lessons from other relevant projects (e.g., same focal area) incorporated into project design

129. Lessons learnt from other previous/ongoing projects were integrated in the design phase, to ensure cost effectiveness and appropriateness of particular solutions in particular communities, including the detailed design determined by the requirements of the particular communities, local environmental and biophysical conditions, a consideration of local environmental impacts, cost effectiveness/economic viability and land ownership constraints.

130. The inputs and suggestions developed in consultation with the WRC and the NGOs implementing the GWI were incorporated in the programme proposed in Project document. The benefit of pursuing a diverse set of water management strategies for adaptation were proved by the WRC project and were the core of this proposal. The WRC project demonstrated the importance of strengthening existing adaptation strategies, notably dry season farming. The development of training modules under this project will build on the WRC (2011) primer, "Climate Change Adaptation: A Primer for Water Conservation, Flood Risk Reduction and Irrigation Strategy for Northern Ghana." The interventions related to water resources management, conservation, and storage proposed by this programme were those tested and recommended as a result of the DANIDA-funded project.

131. Lessons learned from the GWI project, particularly with respect to the suitability of specific technologies in northern regions and the importance of designing multi-purpose water systems over single planning use planning and design approach were included. The project also demonstrated the importance of developing sub-basin water management plans. The NGOs implementing the project found out that boreholes work really well in satisfying the multiple water needs of communities. Using solar power to pump out water was proven effective in communities with no electricity by World Vision's rural water projects in the region.

132. The Africa Adaptation Programme (AAP) in Ghana experience demonstrated clearly that support livelihood activities that depend on water should also provide complementary support to ensure access to adequate and continuous water supply. Moreover, AAP realized that the best modality of working with the districts is through a MOA between the Implementing Partner (at the national level) and the District Assembly with clear milestones that are associated with funds transfer.

133. During the inception workshop on the launch of AF project, two similar projects were discussed that offered tips regarding to how to work with the communities.

4.1.4 Planned stakeholder participation

134. The project document established consultations with all the major government stakeholders during the development of the project proposal, which resulted in a consensus regarding the main components as well as the log frame (outcomes, outputs, activities, indicators etc.) of the project. This consultation took place in July, August and September 2011.

135. After this, the draft proposal was presented to a wide range of stakeholders (national/regional and district scales and from the government and civil society sectors) responsible for policy level development/ implementation, at a national workshop in November 2011. Their inputs to log frame and activities were used to develop the Project design and the elaboration of the Project Document. As a result, the project considered the inclusion of groundwater resources, the multiple uses of water and the flood management in order to take an integrated approach.

136. In December 2011 the three target regions were consulted to establish the baseline of communities' vulnerability towards, to find out about community priorities for adaptation and stablished a rapid local climate change adaptation capacity assessment in the regions. This mission was targeted to ensure consultation with organizations that work with, and understand, the issues and vulnerabilities of rural communities in northern Ghana. These meetings validated the logical framework and focused on the need to engage with communities in planning water resource interventions, the need to utilize existing organization structures including in particular district assemblies, the need to ensure that funds lead to actual measures on the ground and on the scale of interventions that could be possible within particular quantities of funding. Dry season gardening was identified as being a livelihood option that is particularly suited for women. In addition, the need to ensure that support to livelihood diversification addresses the whole value chain was strongly emphasizes.

137. In March 2012 MESTI and the EPA convened a consultation meeting with community representatives from the three northern regions to comment on the proposed project, this

consultation strongly influenced Component 3. The key points discussed included: the emphasis on livelihoods was lauded / communities emphasized the need to pay particular attention to gender roles / processing activities for women were recommended / participants supported a range of water management and livelihood options (bee-keeping, planting of cash-crop trees and linking dry-season gardening to a source of water were recommended). Beside these, participants emphasized the extent of vulnerability to flooding and drought as a factor that was used in selection of project target areas. With respect to implementation arrangements, the participants stressed the importance of identifying governance structures and systems in a specific target community, but at the same time recognize that in some communities, the existing structures may not be necessarily the most supportive structure for delivering adaptation. The management structure at the community level varied from one community to another.

138. The inception workshop included key stakeholders like organizations that particularly represent women and other vulnerable groups, and identified and targeted those communities most vulnerable to climate change impacts to be targeted in the project. Each of the prioritized communities were visited for further on-the-ground assessments before finalizing the 50 communities that will pilot the project.

139. Baseline studies of the vulnerability analysis of the AF communities include vulnerability analysis of both men and women to the risk of climate change. To ensure that the needs and concerns of women groups were reflected in the project implementation, separate meetings and engagement were held. Given the concerns raised during the community level consultations, additional criterion was added in the selection of the project beneficiary communities: capacity of the project communities to address gender dimensions of adaptation interventions was factored in the selection of the project beneficiary communities, this was determined by the presence of women's groups and/or women leaders in the communities. The project beneficiaries were then selected based on the findings of the gender analysis.

140. Regular field monitoring and engagement of key stakeholders included traditional leaders and high-level government officials at both the local and national levels. Initially, key stakeholders like the chiefs and landowners were not willing and ready to release their lands closer to the major water bodies for protection. However due to regular engagement with the key stakeholders including the traditional leaders this issue was resolved.

141. The lack of interest of the beneficiaries seems to indicate that they were not well considered in the planning. In addition, the proposals of the NGO projects indicate entry strategies, and the first contacts with community actors. This raises doubts about the real and active involvement in planning. Some organizations consider involvement in execution, through decision making, but not all reports indicate that they are successful in this regard.

142. The project implementation follows Multilateral Implementing Entity method, taking into account: 1) the consistency with GoG governance structures and mandates of various agencies in order to foster mainstreaming and ownership; 2) accountability and transparency in fund flows to ensure cost-effectiveness; and 3) disbursement of funds in a timely manner to ensure project delivery within the stipulated timeframe; and 4) mainstreaming and sustainability. This arrangement is enhanced with a delegation of operational aspect at the community level to specialized NGOs who have intervened on sites for a significant amount of time showing institutional sustainability. UNDP served as the Multilateral Implementing Agency (MIE),

their services were provided by staff in the UNDP Country Office in Ghana, UNDP Africa Regional Centre in Pretoria as well as UNDP Headquarters (New York) and carried out monitoring and evaluation functions as per UNDP guidelines. The implementation arrangement recognizes the separation between implementing and execution services.

143. The project was coordinated by a National Programme Steering Committee (PSC) and consists of high-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies, civil society organizations, and other development partners. It will be chaired by MESTI and co-chaired by UNDP. In addition, included the parent ministries of the decentralized agencies that will be involved in delivering the project outputs at the community level: Water Resources Commission, Community Water and Sanitation Agency, Ministry of Food and Agriculture and others.

144. The Programme Executive Board (PEB), was responsible for approving key management decisions of the project, ensuring technical quality, financial transparency and overall development impact of the project. The PEB will consist of designated senior-level representatives of agencies with direct stakes in the implementation of the project (e.g., MESTI, EPA, UNDP, WRC, and Ministry of Local Government and Rural Development).

145. A project implementation manual which spells out the roles and responsibilities of relevant institutions were submitted, approved and disseminated to deepen a shared understanding of roles and responsibilities for a correct implementation. The roles are clearly defined which helps to clearly focus on results and allows good synergy.

4.1.5 Linkages between project and other interventions within the sector

146. The Project document identified and reviewed the scope of intervention, duration and details of each activity conducted off all the ongoing and planned project interventions mapped on environment and climate change nationwide as well as other relevant project activities in other thematic areas but within the proposed project sites.

147. The mapping provided the establishment of synergies and complementarities with the proposed project activities for capitalization and re-enforcing previous interventions and to make sure there are value added and no duplication. Links with the AF project include: agricultural insurance products developed under a GIZ project that could contribute to adaptation in AF project sites; the consideration of techniques for storing rainwater and choose vegetation that is appropriate for the new climatic conditions, identified in community interventions supported by the FA project, by German Federal Ministry for Environment, Nature Conservation and Nuclear Safely; the improvement in design of the AF proposal, particularly the importance of coupling of livelihood and water resources management interventions thanks to the lessons learned from African Adaptation Programme; the identified of water resource management to enhance productivity and livelihoods as one of the priority adaptation projects in the NCCAS product of the Climate Change Adaptation and Development Initiative (CC-DARE); the implementation of the lessons learned and recommendations of the Climate Change Adaptation through Integrated Water Resource Management (IWRM) in the three Northern regions of Ghana and via close collaboration with the Water Resources Commission; the inclusion of the approaches to multiple water use

systems for livelihood improvement tested by Adaptation learning Programme for Africa (ALP); the AF project developing using lessons learnt from interventions implemented by Global Water Initiative Project, such as those that seek to help communities meet with water needs (e.g. through boreholes); the URAdapt: Managing water in the urban-rural interface for climate change resilient cities learns on collectively design adaptation strategies for water-use; and the joint FAO/UNDP/WFP on climate change adaptation and disaster risk reduction to generated synergies between proposals in order that they are complementary but avoid duplication.

148. These results were presented to government representatives in November 2011. In addition, in-depth discussions were also carried out with institutions that are based in and implementing water-related and livelihood initiatives in the northern regions.

149. Besides, the PPR mentioned that key results and lessons of the AF project, especially relate with the livelihoods interventions, will be crucial in the implementation of the "Ghana Shea Landscape REDD+ Project" which has been submitted for consideration by the Green Climate Fund (GCF).

150. Related with planned coordination with other relevant GEF-financed projects and/or other initiatives, the experience of implementing the UNDP-GEF Small Grants Program in Ghana and by some local NGOs demonstrated the best funding option was providing grants to communities using NGO support as per the Small Grant Program model. This project also demonstrated that gender gap in access to extension services could be covered by local NGOs, which are fast acquiring the capacity to run agricultural extension projects, in collaboration with district assemblies, in the context of implementing their livelihood projects. These approaches were into account in the proposal.

151. Besides, the goal to provide increased access to affordable, clean, and efficient energy services from the GEF projects may help enable adaptation of communities that benefit under the AF project. The project it's also indirectly linked with the GEF capacity building for CC response at local level on health, which together with the AF project contributes towards implementation of the National Climate Change Adaptation Strategy (NCCAS).

4.1.6 Gender responsiveness of project design

152. There is no evidence about a gender analysis or gender action plan per se in the design phase, however the document project reflects the emphasis of gender equity in all the components for all the beneficed communities.

153. The level of illiteracy among women is much higher than it is among men; cultural norms about visibility and traditional gender roles imply heavy workloads on women. All of these impose time constraints on women and tend to limit their awareness about opportunities in general and participation in development programs in particular. In this scenario, the project adopted the criteria of improve capacity to address gender dimensions of adaptation interventions, which was determined by the presence of women's groups and/or women leaders in the benefited communities. The project document proposed added additional criteria during the inception workshop to fully capture other issues that may increase the vulnerability of different groups in the communities such a gender, youths, elders etc.; and

there was a commitment to obtain an equitable sex ratio across the beneficiaries. Also, one of the tasks of the project officers is to ensure that gender is effectively mainstreamed throughout the project activities, work plans, budgets, re-ports, researches and analyses.

154. Another consideration in project document was the analysis of gender roles in terms of the differing roles of women and men in managing water resources, through a gap analysis of the White Volta management plan as part of the Output 1.2. And the consequent plans for the Black Volta and the Oti River basins, with an emphasis on exploring and developing solutions for gender specific management of water resources, particularly in terms of water use, as part of the Output 1.3.

155. As part of the establishment of Regional Climate Change Adaptation Monitoring Committees (RCCAMC) mentioned in Output 1.4 and requested by the NCCAS, the project document proposed the inclusion of 50% or more representation by women. According to the PPRs, the committee among other responsibilities was to ensure that gender was fully mainstreamed in the implementation of project activities. In addition, the Gender Working Group within the MESTI over the reporting period supported the review of project activity and annual reports to ensure that gender was fully mainstreamed not only in planning but in actual implementation of project activities.

156. Because the system that could provide the highest level of income to users is not necessarily the one that also allows for greater women participation, as part of the Output 2.1, the project document proposed the communities take the decision based on knowledge of the required trade-offs. The same applies to irrigation systems proposed in Output 2.3.

157. As part of Output 3.2, women were supported in the engagement in market activities to diversify their livelihoods for improve their adaptation to climate change, including dry-season gardening activities, agricultural processing schemes (shea butter or honey) and bee keeping practices. At the same time, women were involved in all aspects of the training as part of Output 3.3, 3.4 and 3.5, and were solicited as a requirement that all wood lots and fish farms that were established involved women in the groups that plan and manage these lots.

158. The process of channeling funds from Grantee NGOs to communities included gave priority to women individuals or women-based organizations.

159. Taking into account that it has been demonstrated by the World Bank that gender gap in access to extension services is very much pronounced in Ghana despite the predominance of women in agriculture (in the forest and savannah zones where some of the project target districts are located, the study found out that none of the sampled female-headed households received agricultural extension visits), the project document proposed an approach with NGOs in collaboration with district assemblies, in the context of implementing their livelihood programmes as a supplement government AES. Additionally, because in Ghana, female AEAs proved more effective in reaching women farmers, the project proposed an increased in AES women members. In this way, training activities were proposed in suitable schedule to both women and men members.

160. PPRs reports the conduction of a first simple gender analysis for each livelihood interventions in all the project sites. According to this, the project beneficiaries were then selected based on the findings of the gender analysis.

161. According to PPRs, a grievance mechanism was established and known to stakeholders, to accept grievances and complaints related to gender equality and women's empowerment. However, the same PPR indicates that no formal grievances were received.

162. The AF project complies with the UNDAF Ghana which intends to follow the implementation of projects connected to the SDGs. In this project, one of the main SDGs include the 5th: Gender Equality, with gender-oriented projects and improved representation of women.

163. There is no information about how was the UNDP Gender Marker rating assigned to the project document.

4.1.7 Social and Environmental Safeguards

164. The PPRs report that while ESP was not a requirement at the beginning of the project, environmental and social safeguard measures guided the construction and rehabilitation of the existing dams and the provision of other water supply systems such as the boreholes. Vendors and contractors obtained the necessary environmental permits and engaged effectively with the project beneficiaries taking into consideration social and gender issues.

165. The project budget supported development of the enabling environment for addressing the climate risks for the water resources and the depending economic activities. Such measures will reduce physical exposure of the water basins to climate risks, and help avoid the additional costs resulting from mal-adaptive land use and development planning and practices such as destruction vegetation of the water catchment, unsustainable water use by farming and grazing that currently characterize the water catchments. This is critical in safeguarding sustainability of community livelihoods and economic development activities of the Basin in the face of climate change. Investing 6% of the project resources on enabling environment constituted a cost-effective investment considering the economic role of this region.

166. Besides this, overall, Component 2 supported the realization of Ghana's Water Vision 2025 by the strengthening and ensuring sustainability of ongoing community management, operating and maintenance of facilities, in order to safeguard investment already made.

Project Implementation

4.1.8 Adaptive Management

167. Midterm evaluation (MTE) identified some points that require attention, which were later revised by the board and answered in the official management response on May 2nd, 2019. The document includes answers from Management to all recommendations, including key actions, time frame, responsible and tracking with status at the time. Recommendations from the MTE were attended with concrete key actions, such as:

a. Ensure regular quarterly follow up monitoring visits at the community level.
b. Develop communication strategy, containing a series of activity level, including the launch and commissioning of key project interventions such as dams and boreholes. And, ensure regular update of the website.

c. Commission a study to ascertain the income and vulnerability levels of the project beneficiaries compared to the baseline levels.
d. Conduct refresher training for all the caretakers for the Community Boreholes drilled. Engage local institutions regarding their monitoring role.
e. Based on review of progress made by the NGOs in the implementation of livelihood activities, extend the contract of the NGOs based on satisfactory performance until project completion.
f. Develop detailed work plan for the last year of the project.
g. Engage the Implementing Partner (IP) and other partners to plan for scaling up project(s) and the incorporation of the linkage between climate science and adaptation in other government programmes.

168. A detailed workplan for 2019 was prepared, but key actions suggested by the board were not included in the workplan. Hence, there is no documentation proving that board key actions were implemented.

169. There is evidence of other improvements done during implementation, such as redistribution of economic resources due to the infeasibility of the execution of some activities and outcomes. In the 2019 annual evaluation (AF project 2019 ANUAL SDC), is indicated that the overall performance of the community tree nurseries sector did not meet expectation due to poor market. Thus, the sector was not considered under the Phase 2 implementation and the resources were reallocated to support the establishment of 9 community fish farms. Another relevant change was number of rehabilitated dams because were more expensive than expected, therefore the Steering Committee decided to reduce the number of dams to be intervened from 30 to 12.

170. Therefore, there is evidence of adaptive management, but the implementation of changes and improvements is not clearly documented.

4.1.9 Actual stakeholder participation and partnership arrangements

171. One of the strategies that was adopted to improve the project results was the engagement of Community Based Organizations (CBOs) to support in the implementation of community level interventions. This strategy proves to be effective and efficient in delivering multiple project results in a diverse project location.

172. The project successfully organized country-driven processes and stakeholders by engaging 46 CBOs in delivering the key outputs under outcome three of the project. Besides, The NGOs managed to develop a good relationship between the AFP with government projects, like the Planting for Food, which helps the beneficiaries to access subsidized fertilizer for their farming activities.

173. However, in the case of NGOs, there is a variety of degrees of stakeholder engagement. Some of them reports low local participation or participation only by beneficiaries; few cases indicate strategic alliances with other organizations. At the beginning of the implementation, a lack of follow-up by state entities was reported. Some weaknesses are evident in the participation report of NGO projects, showing limited stakeholders' participation.

174. Regarding involvement of communities, despite there being a clear plan to involve communities and women groups, community-based NGOs lacked the capacity to understand gender issues. To solve this, capacity building workshops were organized for the participating NGOs. PPR indicate that regular field monitoring and engagement of key stakeholders including traditional leaders, high-level government officials at both the local and national levels, improved project results and greater ownership by communities.

175. Creative and high impact education and awareness strategies are reported on the issue of climate change, its causes, effects on livelihoods, and actions in agriculture to reduce or mitigate these effects. These are of high impact by number of people reached through radio discussions, as reported in FORG activity report for third quarter.

176. Gender approach was included during project planning in an appropriated way, following the objective of increasing the resilience of vulnerable groups including, women, youth, the disabled and the elderly through the implementation of community led adaptation and livelihood diversification. As indicated in the project plan and project reports, CBOs and NGOs were engaged to implement community level activities taking into consideration gender issues, making efforts to ensure that women constitute the greater beneficiaries (at least 60%). The project beneficiaries were selected based on the findings of a gender analysis. Other action taken towards gender equality was that each Community Climate Adaptation Monitoring Committee (CCAMC) was formed ensuring that at least one third of the members of them were women.

177. To ensure that the needs and concerns of women groups were well reflected in the project implementation, separate meetings and engagement were held at a time and place convenient to the marginalized groups, especially the women. Given the concerns raised during the community level consultations, additional criterion was added in the selection of the project beneficiary communities: capacity of the project communities to address gender dimensions of adaptation interventions was factored in the selection of the project beneficiary communities, this was determined by the presence of women's groups and/or women leaders in the communities.

4.1.10 Project Finance and Co-finance

178. In the Midterm evaluation, the financial execution of the project was rated as satisfactory (S) as the planned budget was respected. However, the project had an advanced spending. There have been relevant differences between planned budget and actual expenditures. The same evaluation shows that there was an excess expenditure of 102,942 USD in component 1: Water resource management and planning under climate change. Project report for the first year also showed a difference between the expenditure ($412,819.94) against the received funds ($300,725.00). The excess expenditure, financed by UNDP, was due to the implementation of some key preparatory activities that were necessary to start, and other activities which were originally not part of the 1st year such as project launch and inception, community entry and consultation and drilling of 10 boreholes. There are no variations in expenditure against budget, the differences where only in the execution period.

179. The project achieved 79% (6009,665.4/7644,214*100) as at November 2020. In order to improve the project fund utilization rate, the remaining balance of 21% has been committed in contracts including the cost of the terminal evaluations and contracts signed by government for the rehabilitation of 5 other dams (See Annex 6.14). This additional rehabilitation will bring the achievement rate of the 50 dams targeted initially from 20% (10 out 50) as at 31 December 2020 to 30% (15 out 50) by March 2021. Thus, the actual terminal expenditure as at 31 December 2020 is in principle $6,356,932.32 + $649,758.19 (from the programme cycle mgt fee), representing 84.48% of the total project fund.

180. At the moment the final payment remains to be made (Table 5). There are important amounts that are committed to contractors, but they must be duly settled (with works delivered, in operation, and with the respective inspections and approval).

181. The implementation of the project was planned to be funded only by the Adaptation Fund Board. No other co-financing organizations were identified. During implementation, some resources were donated from external organizations or stakeholders. Third year's project report describes how two government officials were seconded on this project at various times without any additional cost to the project. In this case, the government absorbed the staff cost of the critical staff for the entire duration of the project, equivalent to USD 250,000 at the time of the report. There is also evidence of a donation of GHS 500,00 giving to the Wallembelle gardeners by the Minister of Environment, Science, Technology and Innovation, Prof Kwabena Frimpong Boateng, during his visit to the garden. Nevertheless, such donations and co-financing are not clearly shown in financial reports. There is no sufficient clarity regarding co-financing in the project documentation. Combined Delivery Reports shown data of grants by the Government of a total amount of $750.557,07 USD (Table 6). There is no evidence or any other leveraged resources, such as in-kind donations, committed to the results of the project.

182. The mentioned donation from the Minister of Environment, Science, Technology and Innovation was reported as a great support to the project's sustainability. The donation was used to establish the Village Savings and Loans Scheme system (VSLA). The objective of the initiative is to fulfill the gardener's' need to have a bank account and make savings for their garden project activities, especially when they harvest, and to have access to loans with better conditions than banks.

183. A variety of financial documentation has been found. Combined delivery reports show annual expenditures per activity, annual revision of workplans define the specific budget for the implementation of the activities, project performance reports for every includes financial evaluation, midterm evaluation and monitoring and evaluation reports gathered relevant financial information and, finally, financial reports from some NGO's indicating expenditures for specific activities have been found. Midterm evaluation concludes that the project resources have been aligned with the financing and delivery of outputs and that there has been a competitive procurement to ensure best value for money, following the UNDP procurement procedures. However, comparing all available financial documentation is not possible due to differences in the reporting periods.

184. Audits were carried out in the years 2017, 2018 and 2019; and in all of them there was conformity in the reviews made. Only in 2017 was a finding made with its respective

recommendation, which was corrected in 2018 and its risk estimated as medium. The finding referred to a negative balance of $ 311

185. When it comes to funds allocations, one of the major issues during the implementation of the project was the delay in the release of funds by the Adaptation Fund Secretariat. It is repeatedly reported by NGOs that the delay in the disbursement of funds had consequences on the projects, especially in the case of activities related to the cultivation and harvesting of crops. Gladly, as indicated in the Midterm report, the issue was solved by the Project Management Unit, who used the opportunity to engage with the Project's Regional and District stakeholders including the EPA to plan for project activity implementation.

186. However, the delay in funds allocation affected the implementation of key activities, according to what was reported in the third-year project performance report. Another relevant change in funds allocation and budget planning was found on 2019's board minutes, where it was stated that dam's rehabilitation was more expensive than expected. The Steering Committee then decided to reduce the number of dams to be intervened from 30 to 12.

Presentation and Discussion of May 2019-April 2020 Work Plan and Budget	**Key Activities from May 2019- April 2020:** • Build capacity of district and community adaptation monitoring committees on Disaster Preparedness, Management and Coordination • Construct/rehabilitate existing dugouts/Dam • Drilling of 30 Boreholes • Monitoring and Travels • Plant vertiva grass/ and other cover crops/enriching planting • Hold reflection and annual review meetings & learning festivals • Supply inputs for dry season gardening e.g. Seeds, small water pumping machines, water horses etc. (Support to 17 NGOs) + Last year outstanding • Support community-based bee keeping with hives and training/support for small ruminants' production for women and youth groups (support to 9 NGOs) +Last year outstanding • Protect all trees in water catchment areas/Monitoring EPA Regional Offices • Supply inputs such as fingerlings and nets for wild fishing and cage fishing/Monitoring by EPA Regional Office • Produce and disseminate brochures, maps, video documentaries/Learning visits, Sign Posts etc. **Discussions:** • The committee recognized that the budget for the rehabilitation of the dams as contained in the original project document is inadequate to support the rehabilitation of 30 Dams. There has been changes in the structure of the existing dams, which will require more works than originally anticipated. These additional works have resulted in additional cost which will not permit the project to rehabilitate the 30 Dams. The committee has therefore requested the project to adjust the project budget for the dams to contain at least 12 Dams instead of the 30 Dams.

187. Also, there is a difference in the time relating to the submission of the reports, some of them used the calendar year while other used the project year (starting every May), which don't allow a proper comparison between such data. All financial data shown below are according to the CPR.

188. Although the annual expenses reports show differences between planned and actual budgets, the fact that some budget is still needed to disburse on the first quarter of 2021 does not allow

comparison in the total amount. The summary tables have this limitation, so a proper evaluation should be performed once the final financial report is delivered. With the available information, a comparison between planned and actual budget, as well as, a summary of the financing and co-financing amounts, is shown in Table 5 and Table 6 below.

Table 5: Financing and Co-Financing 1

Co-financing (type/source)	AF financing (US$)		Government (US$)		Partner Agency (US$)		Total (US$)		Pending (US$)	
	Planned 2	Actual 3	Planned	Actual 3	Planned	Actual	Planned	Actual	Outstanding NEX advances	Commitments
Grants	8.293.972,19	4.795.415,13		750.557,07			8.293.972,19	5.545.972,20	1.134.239,04	23 291,07
Loans/Concessions							0,00	0,00	0,00	0,00
In-kind support							0,00	0,00	0,00	0,00
Others							0,00	0,00	0,00	0,00
Totals	8.293.972,19	4.795.415,13	0,00	750.557,07	0,00	0,00	8.293.972,19	6.356.932,32	1.134.239,04	23 291,07

[1] Data shown at August, 2020
[2] Planned expenses based on Project Document
[3] Actual expenses based on CDR

Table 6: Confirmed Sources of Co-Financing at TE Stage

Sources of Co-Financing	Name of Co-Financier	Type of Co-Financing	Investment Mobilized	Amount (US$)
Recipient Country Government	Government of Ghana	Grant	Recurrent expenditure	750.557,07
Total Co-Financing				750.557,07

[1] Based on Combined Delivery Reports

**Investment Mobilized* means Co-Financing that excludes recurrent expenditures (Different governments, companies and organizations may use different terms to refer to "recurrent expenditures", such as "current expenditures" or "operational/ operating expenditures".)[32]

***Recurrent expenditures* can generally be understood as routine budgetary expenditures that fund the year-to-year core operations of the entity (they are often referred to as 'running costs' - they do not result in the creation or acquisition of fixed assets). They would include wages, salaries and supplements for core staff; purchases of goods and services required for core operations; and/or depreciation expenses. Some of the typical government co-financing we have previously included (such as routine budgetary expenses for Ministry of Environment operations) will no longer meet this new definition of investment mobilized for these specific countries.[33][34]

[32] GEF Guidelines on Co-financing and Policy on Co-financing https://www.thegef.org/documents/co-financing
[33] ibid
[34] Specific, Measurable, Attributable, Relevant, Time-bound/Timely/Trackable/Targeted

4.1.11 Monitoring & Evaluation: design at entry (*), implementation (*), overall assessment of M&E (*)

189. The available M&E strategy plan has a clear and broad definition of the monitoring objectives, data collection, storage, control and assessment, decision making (including CEO Endorsement), evaluation and auditing. However, the plan is dated on December 2016, which is after the project implementation started in May of the same year, so is easy to think that the document could not be put in practice since the beginning of the implementation. Even though, as indicated in the midterm report, several monitoring tools were used during the project implementation to evaluate at the four different levels (community, district, region and national), which follow the indicators and methodology to track the progress for UNDP supported projects.

190. In the agreement between AF and UNDP for the project implementation, the following records and reporting are requested: (1) Inception report, (2) Annual Project Performance Reports (PPR), (3) Mid-term evaluation (MTE), (4) Project completion report, (5) Final evaluation report and (6) Final audited financial statements.

191. During implementation, monitoring activities are shown in documentation such as the annual project performance reports (PPR) and quarterly NGO's reports based on the expected results and their indicators to assess the level of achievement of the results obtained. Baseline indicators are included in the M&E plan, and they have proven to be specific, measurable, achievable, relevant and timely through its follow up presented in the mentioned reports.

192. Baseline methodology was well articulated, but roles and responsibilities regarding monitoring was not clear enough to allow in a well organize result. As indicated before, NGOs seemed to lack understanding on how to monitor indicators. Besides, not all monitoring activities, such as audits, where performed at the point of this Terminal Evaluation.

193. An annual risk assessment was carried out in each of the project performance reports (PPR), which allowed establishing measures and steps on time to reduce and eliminate the different risks or their impacts.

194. There is evidence showing that M&E budget was not sufficient. The Midterm report indicates that due to the low time budget it was not possible to analyze the cost effectiveness of the investments for each activity. The same report remarks the problem of limited grants received by the NGO's restricting the possibility to perform mid-term monitoring. Stakeholders also claimed that there was a low frequency of the monitoring missions due to absence of budget.

195. M&E plan do not specify how AF should be informed and involved, but it indicates that all relevant information and knowledge gathered through the monitoring and evaluation processes will translated into effective communication tools and materials to be shared with stakeholders in Ghana, regional UNDP team, and any other relevant circles; and inform management for questions and decisions, which includes AF.

196. Relevant data on specified indicators and monitoring tools by the different organizations is included in the project document and guidance. Applicable relevant indicators and tools are clearly gathered and implemented in the PPRs, at least until the latest one available from May 2018 to April 2019.

197. All PPR have data related to expenditure and planned expenditure schedule. However, are some reports from NGOs indicating that there was a poor sense of timing at some stages, since there was a lot of activities yet to take developed.

198. Monitoring reports showed to be highly valuable at higher management, especially the MTE and the PPRs. Information included in these documents is wide and comprehensive, and there is evidence of management review with an intention of improving and adapting the project. For example, there are two MTE recommendations related to improve monitoring and communication with stakeholders, to which the management replied with key actions to be implemented. However, as there is no PPR for the last year available and no other monitoring documentation, it is not possible to conclude if such actions where implemented. More information should must be gathered to confirm whether changes were made to project implementation as a result of the MTE recommendations.

199. M&E included training of all stakeholders responsible for monitoring activities. Nevertheless, during implementation, the activity reports indicate an inadequate monitoring by the regional and district EPA team regarding interventions being implemented at the community level, failing at their responsibility of collecting primary data on implementation of agricultural and natural resource management subprojects. It was mentioned that monitoring at district level could have been improved if there was a meeting each quarter to increase the awareness on quality of the work.

200. There is clear evidence of relevant groups being involved and monitored. As indicated in PPRs, Indigenous knowledge on community practices, beliefs, culture, co-existence and livelihood was included during the community entry, mapping and engagements processes even in year 2 of the project. This knowledge influenced the siting of boreholes, buffer zones and which water resources should be repaired or introduced. The sub-basin committees are composed of representatives of district assemblies, water users, civil society organizations in the water sector, women representatives, traditional authorities and other stakeholders who are key with regards to the implementation of water resources management strategies. There was an available initiative to listen women complains or suggestions, but any entry was registered. Work with the community leaders, affected farmers and community climate adaptation committees during focus group discussions and community engagements meetings, to leasing their concerns and sensitive community member, was also implemented.

201. There was an adequate monitoring of environmental and social risks. An annual risk assessment was carried out in each of the PPRs, which allowed establishing measures and steps on time to reduce and eliminate the different risks or their impacts.

202. The MTE Report demonstrated the outcomes and outputs are consistent with the Theory of Change.

203. The rating of the progress towards results is: satisfactory (S) for outcome 1; moderately satisfactory (MS) for outcome 2 and satisfactory (S) for outcome 3. In the latest PPR available (year 3), self-rating is: satisfactory (S) for the 3 outcomes.

204. The M&E Design, M&E Implementation and the overall quality of M&E are assessed separately on a six-point scale, as described in Table 7.

Monitoring & Evaluation (M&E)	Rating
M&E design at entry	5 = Satisfactory (S)
M&E Plan Implementation	4 = Moderately Satisfactory (MS)
Overall Quality of M&E	4 = Moderately Satisfactory (MS)

Table 7: Monitoring & Evaluation Ratings Scale

Rating	Description
6 = Highly Satisfactory (HS)	There were no short comings; quality of M&E design/implementation exceeded expectations
5 = Satisfactory (S)	There were minor shortcomings; quality of M&E design/implementation met expectations
4 = Moderately Satisfactory (MS)	There were moderate shortcomings; quality of M&E design/implementation more or less met expectations
3 = Moderately Unsatisfactory (MU)	There were significant shortcomings; quality of M&E design/implementation was somewhat lower than expected
2 = Unsatisfactory (U)	There were major shortcomings; quality of M&E design/implementation was substantially lower than expected
1 = Highly Unsatisfactory (HU)	There were severe shortcomings in M&E design/implementation
Unable to Assess (UA)	The available information does not allow an assessment of the quality of M&E design/implementation.

4.1.12 UNDP implementation/oversight (*), Implementing Partner execution (*) and overall assessment of implementation/oversight and execution (*)

205. Since the project planning, UNDP has shown a clear communication with all involved partners. There is evidence of written communication from January 2015 to March 2016, and UNDP involvement in management and committee meetings up to February 2020. The implementing agreement between AF and UNPD, signed on March 2015, show an adequate definition of implementing, monitoring and reporting activities.

206. Available PPR (years 1 to 3), are well organized and comprehensive, showing candor and realism. Risk management shown in the same reports presents good quality and there is clear follow up of the risks and mitigation strategies.

207. The project is coordinated by a Programme Steering Committee (PSC) and consists of high-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies (Water Re-sources Commission, Community Water and Sanitation Agency, and Ministry of Food and Agriculture, and others), civil society organizations, and other development partners. UNDP has been responsive to significant implementation issues

through the PSC, as shown in their response to the mid-term evaluation recommendations, where clear action points are defined to attend all recommendations.

208. Considering that UNDP is directly involved in the PSC and there is a continuously reporting through the PPR, it can be concluded that an adequate oversight of the management of environmental and social risks, included in the reports, has been performed.

209. The mid-term evaluation reports some issues related with the implementation of the project, but it also shows that actions were implemented to overcome the issues. Therefore, the mid-term evaluation qualified the implementing execution as Satisfactory from all stakeholders. Overall, there is a good quality of risk management, clear, straightforward and realistic reporting, and an adequate management of environmental and social risks.

210. However, it is relevant to recall that one of the main issues during implementation was the delay in the release of funds, due to late disbursement by the Adaptation Fund, affecting implementation of activities.

211. Others difficulties presented by the project included 1) The absence of a tool to monitor the improvements in livelihood at local and district level, responsibility of M&E and PMU; 2) NGOs involvement in the project formulation process for a better understanding of the systematization of results according to indicators and a gender perspective, responsibility of M&E and PMU; 3) The inadequate monitoring by the regional and district EPA team on interventions being implemented at the community level does not ensure that PMU has timely feedback; 4) At the beginning, the contracting processes, responsibility of the UNDP Country Office, had few tenders in some cases, delaying the contracting process and the start-up of some studies; and 5) Greater supervision was needed in the construction of wells, as well as in the repair and rehabilitation of existing dams and levees, responsibility of the Community Water and Sanitation Agency (CWSA) and the District Assemblies (GIVES)

The recruitment processes, responsibility of UNDP Country Office, and oversight the construction of boreholes, repair and rehabilitation of existing dams and dugouts, responsibility of and Community Water and Sanitation Agency (CWSA) and District Assemblies (DA).

212. As a Assessment of Quality Assurance Mechanism, the minutes mentioned the role of UNDP and GIDA engineers to oversee regularly monitoring of the site through supervision mission, draft of reports and relevant statistics, to ensure that the milestones, beside this, no reports where fund in the documentation package and the SDC Results Reporting Template (2019) mentioned as a challenge ensuring through phone calls and meetings that UNDP's Supervising consultant is on field and provides regular updates on progress of work.

213. UNDP implementation/oversight and Implementing Partner execution and an overall rating for both are rated separately and assessed on a six-point scale, as described in Table 8.

UNDP Implementation/Oversight & Implementing Partner Execution	Rating
Quality of UNDP Implementation/Oversight	5 = Satisfactory (S)
Quality of Implementing Partner Execution	5 = Satisfactory (S)

Overall quality of Implementation/Oversight and Execution	5 = Satisfactory (S)

Table 8: Implementation/Oversight and Execution Ratings Scale

Rating	Description
6 = Highly Satisfactory (HS)	There were no shortcomings; quality of implementation/execution exceeded expectations
5 = Satisfactory (S)	There were no or minor shortcomings; quality of implementation/execution met expectations.
4 = Moderately Satisfactory (MS)	There were some shortcomings; quality of implementation/execution more or less met expectations.
3 = Moderately Unsatisfactory (MU)	There were significant shortcomings; quality of implementation/execution was somewhat lower than expected
2 = Unsatisfactory (U)	There were major shortcomings; quality of implementation/execution was substantially lower than expected
1 = Highly Unsatisfactory (HU)	There were severe shortcomings in quality of implementation/execution
Unable to Assess (UA)	The available information does not allow an assessment of the quality of implementation and execution

4.1.13 Risk Management

214. New risks (not identified at project design) were clearly registered in the Project Performance Report (PPR), identifying the most critical ones and clarifying the steps taken to mitigate the risks. The project´s risk register was properly updated and maintained during implementation. At an operational level, in the NGO evaluation reports the challenges are indicated, some of them correspond to risks and how they were managed. For example, Open Ghana reported 3 challenges facing the project: (1) Lack of cellular network services, (2) Conflict in the Bole District, and (3) Armed robbery attacks. An example of reported mitigation is the case of Arocha NGO report of third quarter, where says that the NGO has developed a good relationship with a partner NGO (JAKSALLY), based in the project area, which is helping the project to implement its activities in the face the chieftaincy dispute.

215. Identified risks and mitigation actions for each reported year are summarized in the following Table.

Table 9: New risks identified in implementation progress and steps taken to mitigate them

Year	Identified Risk	Status at the time	Steps Taken to Mitigate Risk
1	Resistance by communities along river basins not	Low	• Established community climate change adaptation monitoring committee to collaborate with institutions for

	selected as project beneficiaries.		implementation and monitoring of the project. • Effective collaboration with local Authorities in the beneficiary communities. • A participatory process was used in the selection of beneficiary communities. The PMU developed selection criteria and the districts selected 10 potential communities which subsequently became five through a field assessment by a joint team made up of the PMU, local authorities and the communities. Some communities were put into clusters to deal with the risk of conflict resistance which could cause a deliberate action of the non-selected communities to cause harm or danger to the project intervention. To deal with this risk, the project ensured that communities closely along a river basin were selected and grouped into zones and referred to as a single beneficiary community with the acceptance of the leadership and stakeholders of these communities.
	Lack of clarity of roles and responsibilities of key government institutions may affect the smooth implementation of the project.	Low	A draft Project Implementation Manual was finalized, clearly pointing-out responsibilities of each project partner.
2	Late release of funds from the AF for year 2.	Critical	Though the project managed to catch up with the delay in project start-up/implementation, one critical issue that affected the smooth delivery of year 2 activities was a long delay in the release of funds by the donor (Adaptation Fund Board) which had significant negative effect on the project implementation delivery. To reduce this risk, UNDP country office advanced some funds to assist in the implementation of some of the soft activities. Other hard activities like planting of trees, drilling of boreholes and rehabilitation of dams had to be put on hold and had some dire effects on project objectives for year 2.
3	Resistance by farmers whose farm area were selected to be used as buffer zones for rivers and dams	Low	This is no longer a risk to the project. Regular field monitoring and engagement of key stakeholders including traditional leaders, high-level government officials at both the local and national levels was critically in addressing this risk. Initially, key stakeholders like the chiefs and landowners were not willing nor ready to release their lands closer to the major water bodies for the creation of the buffer zones. However due to regular engagement with the key stakeholders including the traditional leaders this issue was resolved. This led to the creation of 15 Buffer around the water bodies. Indeed over 18, 000 tree seedlings have been planted in 15 communities (37.1 acres) as a result of the closer collaboration with the project key stakeholders at the local levels. It is expected that the trees planted will among others reduce siltation in the watershed.

			Affected farmers were sensitized and roped in the tree planting activities in order to ensure ownership of trees by the farmers. Additionally, the agroforestry planting method is being adopted for the buffer zone. Under this arrangement, crops planted by farmers are inter-cropped with trees so that they have an immediate benefit from crops while benefits from trees come later.

216. The major risk encountered during implementation was the possible delay caused by the late release of the project resources on behalf of the Adaptation Fund Board. UNDP country office advanced some resources to the project to minimize this risk. A no cost extension until December 2020 for Implementation of all project activities, especially the rehabilitation of the dams, was recommended. However, Board meeting minutes show that the amount of dam interventions was reduced due to a higher cost than planned, and they were expected to be finished by April 2020, as indicated in the latest board minute available, on February 14th, 2020. There is no indication of other potential risks that were not considered or overlooked.

217. Despite the fact that there is no written evidence of risks being received by the Project Board, the Project Team maintained clear reports, including all new risks, in the PPR. There is also evidence of the Project Board taking decisions that are influenced by the identified risks. Therefore, the Project Board was properly informed of new risks and their status.

218. The rest of risks identified at the Project document were contained or reduce as indicate the next table.

Table 10: Level of risks identified at the design phase and mitigation measures.

Risks	Level indicated in the PRODOC	Mitigation Measures	Current level of risk and rationale (PPR 3)
Insecurity in the area – terrorist attacks or regular banditry – may jeopardize the implementation and follow-up of the project	Medium	The project shall take this into account through various measures including cooperation with local communities and structures as well as a good cooperation with local organizations for the project implementation using UN security alert system distance follow-up and reporting tool.	Low
A poor understanding of the objectives by the project team	Low	A strong involvement of leaders, particularly in implementing agencies and key stakeholders is needed as well as support of national experts and adapted trainings	This is no longer a risk (Low)
Low mobilization of the target group caused by a	Low	Collaboration with the target communities with a participatory approach and a	Low (=)

poor understanding of climate change issues		sensitization to the outcomes of climate change needs to be increased.	
Lack of capacity to meet financial, and in particular resource commitments by partners in project implementation	Medium	A continuous dialogue before and after the signing of the project document will be established among project partners. Sufficient allocation within the detailed proposal and implementation arrangements will be made to developing teams with sufficient capacity (both in terms of size and technical abilities), which are sufficiently embedded into implementing agencies as well as setting realistic targets for partner contributions in the first instance	Medium (=)
Lack of sufficiently qualified partners	Low	Capacity-building Screening and evaluation of partners Collaboration with communities at a decentralized level	This is no longer a risk (Low)

219. Project performance reports indicate that even when ESP was not a requirement at the beginning of the project, environmental and social safeguard measures guided the construction and rehabilitation of the existing dams and the provision of other water supply systems such as the boreholes. Vendors and contractors obtained the necessary environmental permits and engaged effectively with the project beneficiaries taking into consideration social and gender issues, showing that the safeguards management measure was effective.

Project Results and Impacts

4.1.14 Progress Towards Objective and Expected Outcomes

220. The following table presents an analysis of the progress towards objectives and outputs achievement; based on indicators suggested in the Project document, and using the same method as MTE. The indicators are assessed using the following color code:

Green= Achieved	Yellow= On proper way to be achieved	Red=not on way to be achieved

Table 11: Progress towards objectives and outputs achievement

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
Outcome 1: Improved basin level management and planning of water resources, taking into account climate change impacts on surface and groundwater sources						
Indicator 1.1: Existence of historical and downscaled climate projections	No downscaled climate projections are in place	Downscaled and historical climate projections available for the White Volta, Black Volta and Oti Basins	All studies in this category have been carried.	MTE Report / MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Project Documentation; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		This output has been achieved by year 3. The Water Resources Commission and other relevant stakeholders have now access to data and information about the historical climate trends and future climate change projections for the White Volta, Black Volta and Oti river basins. Downscaled climate projections are available for the White Volta, Black Volta and Oti river Basins
Indicator 1.2: Revised White Volta management plan		Current plan does not address climate change impacts nor link clearly to community level	Revised White Volta Plan completed and adopted at inter-ministerial level	MTE Report / Project MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9) /Project Documentation; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		The White Volta Management and Investment Plans have been developed under Water Climate Programme and Development Programme (WACDEP) project, which was implemented by the Water Resource Commission and funded by DANIDA. The project has obtained a copy of the report which will be used to inform other interventions. The findings from the studies led to the development of evidence-based and climate-resilient water management and investment plans for river basins. Black Volta plan and 5 sub-basin plans in the White Volta and the Oti Basins have been fully developed and validated for adoption at the inter-ministerial level. The White Volta Management and Investment Plans have been developed under Water Climate Programme and

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						Development Programme (WACDEP) project which was implemented by the Water Resource Commission and funded by DANIDA. The project has obtained a copy of the report which will be used to inform other interventions
Indicator 1.3: Management plans in the Black Volta and five sub-basins in the White Volta and the Oti basins at ministerial level	No plans are in place	Black Volta and Oti basin plans adopted at inter-ministerial level	Black Volta and Oti Basin-wide management plans have been prepared	MTE Report / MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/ Project Documentation; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Climate smart water management plans designed for the Black Volta and Oti River basins developed and validated by year 3. Five thematic programs have been generated and formed part of the plan: robust integrated decision support systems for managing water resources; climate resilient water infrastructure; Healthy water resources systems; Strategic knowledge management and exchange; Robust and effective water governance.
Indicator 1.4: Three regional Climate Change Adaptation Monitoring Committees	There is no committee in place	Regional Climate Change Adaptation Monitoring Committees established in the three target regions	Regional Climate Change Adaptation Monitoring Committees have been established in the three target regions	MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/ Project Documentation; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Regional Climate Change Adaptation Monitoring Committees are fully established and functional in the three target regions. The adaptation fund project in 2016 established 3 regional, 10 District and 50 community Climate Change Adaptation Committees in the three northern regions of Ghana. Series of training workshops led by the Water Resources Commission have been conducted by the year 3, for over 115 participants, made of traditional leaders, women and youth groups, civil society organizations and other

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						community-based organizations that were educated and sensitized on various water resource management activities and disaster risk and preparedness under climate change. Through the trainings most of the project beneficiaries understood their individual roles in addressing climate change impacts, especially the women groups as key agents to addressing climate change impacts on water resources To ensure effective implementation of the management plans, five sub-basins committees were established, namely, Noumbiel, Dapola, Bamboi, Bui and Vonkoro for the Black Volta basin. This is also part of efforts by the Water Resources Commission to decentralize their management. The sub-basin committees are composed of representatives of district assemblies, water users, civil society organizations in the water sector, women representatives, traditional authorities and other stakeholders who are key with regards to the implementation of water resources management strategies.
Outcome 2: Climate resilient management of water resources by 50 communities in northern Ghana						
Indicator 2.1: Number of communities	Management plans are not in place. Lack	50 community water management plans implemented by community institutions with at least	This indicator was not achieved in time. But	MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Field Mission Report/ Project Documentation; Project		As a follow up to the Basin wide Water Management Plans developed under this project in 2018, 4 Sub basin Plans made up of over 50 communities in

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
in which management plans have been developed and are being implemented	of coherent and planned water management activities in communities.	50% representation by women in place by end of project year 2.	at the end of 2019 4 sub basin plans were made up of over 50 communities. No data available about the representation by women	documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Northern Ghana have been developed in 2019 for implementation. These plans take into consideration climate change impacts and the vulnerability of key sectors and communities that depend on it as their primary source of water. The plans provide opportunity to mainstream climate change into local water resource management planning. The four sub- basin plans in the White and Black Volta basins are as follows: - Dapola sub- basin (Black Volta); - Bui sub- basin (Black Volta); - Gambaga sub- basin (White Volta) and Nasia sub- basin (White Volta).
Indicator 2.2: Improved infrastructure for water distribution for CCA and agricultural use installed in 10 districts						
Indicator 2.2.1: Number of operational boreholes systems	Communities have limited infrastructure in place for supply and storage of water	100 operational boreholes, benefitting at least 30,000 people (60% of whom should be women).	145 Boreholes constructed	MTE Report / MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		The project completed the construction of end project target of 100 boreholes in good time. As a result of efficient use of resources, additional 45 boreholes were drilled, bringing the total boreholes as at end of project to 145 boreholes, the community have full-ownership of the boreholes and have started making monthly financial contributions towards the repairs and maintenance of the boreholes without relying on central government support. These 145 boreholes would serve about 40,000 people mainly women and children in 50 communities in 10

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						districts. Community Water and Sanitation Agency in the regions noted, during the field interviews, that the regional CWSAs were not involved in the boreholes project implementation. This occurred, according to the Project Director, because the CWSA Head Office in Accra signed and implemented the contract using private sector contractors to drill the boreholes in the project communities. The Tamale CWSA indicated it has conducted the assessment of the boreholes in the project areas including Tampion in Zavulugu district and recorded cases of non-satisfactory performance. The PMU should obtain a copy of the Borehole Sustainability Survey by CWAS Regional Office, Tamale. This will inform the PMU in the enforcement of rehabilitation to address the issues identified within the defect liability. Given that the degree of non-operational boreholes has not been established, TE has considered the additional 45 drilled boreholes can potentially off-set the non-operational ones and rated it green.
Indicator 2.2.2: Number of operational dugouts/dam's systems	Communities have limited infrastructure in place for supply	50 dams/dugouts serving as rainwater harvesting and water storage systems in place, providing water supplies to 50 community facilities	10 dams were successfully rehabilitated under phase 1; and 5 additional	MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report Draft), /Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/		The TE noted in the minutes of the Steering committee, of February 2020, that much concern was shown over the status of the completion of the dams. At the time the number completed was only 10 dams.

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
	and storage of water		will be completed by march 2021. This brings to a total of 15 dams that would be rehabilitated under the project.	(https://mesti.gov.gh/adaptationfund/documents/communities		The total target for dams/dugouts were subsequently reduced from 50 in the Project document to 30 in the Midterm report and 12 in the Minute for Steering Committee meeting, in April 26th, 2019 because there were changes in the structure of existing dams, which required more works than originally anticipated. These additional works resulted in additional cost which does not permit the project to rehabilitate the 30 dams In all, 10 dams were successfully rehabilitated under phase 1; and 5 additional will be completed by march 2021. This brings to a total of 15 dams that would be rehabilitated under the project. During the field evaluation, the TE observed that, two (2) dams at Goli and Tampion developed a breach on one side of the embarkments. The volume of water collected has been lost, destroying the livelihoods projects. The footbridge/Walkway on another dam at Lamboya was recently washed away by the heavy rains coupled with the spillage of the Bagre Dam in Burkina Faso. This raises the question of loss and damage under climate change. The Contractor in charge of the Lamboya dam is currently on site reconstructing the walkway.

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						The procurement of the Contractors as well as payment of Advance Mobilization delayed. This was attributed to administrative bottlenecks. That largely affected the commencement of works on the additional 5 dams/dugouts. Contractors have started clearing sites and materials being supplied. Work expected to be completed by March 2021 under a special agreement with the Government of Ghana.
Indicator 2.3: Number of operational community scale irrigation systems installed	Very few communities have effective irrigation systems in place	30 operational irrigation systems, benefitting at least 2,500 farmers	40 small irrigation systems, one each in 40 communities with a total direct beneficiary of 1,590 were established (More than 50% are women).	Project Performance Report 3, 2019; Project Annual Reports including 2020 Annual Report Draft), /Physical Progress Report (Annex 9)/Field Evaluation/ Project ProDoc; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		For the output 2.3 the project document shows two targets, one of 50 and the other of 30 operational irrigation systems. This evaluation is based on the target of 30 operational irrigation systems, since it is the number most mentioned in the project document. In this sense we recommend following the suggestions that given the absence of the revised planning of this outcome need to be analyzed carefully because there is no evidence provided by the team that the quantitative targets (50 irrigation systems) will be achieved on time despite the delays. PPR 3 reports that 40 small irrigation systems, one each in 40 communities with a total direct beneficiary of 1,590 were established (More than 50% are women).

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						The project provided small-scale infrastructure support, such as watering cans, pumps and pipes, to facilitate dry seasoning gardening by women. This activity is linked to increased water supply and storage, particularly from dugouts and small-scale dams.
Indicator 2.4: Measures for water conservation under climate impacts implemented.	Deforestation and illegal mining and tree cutting activities within river banks exacerbates evaporation and drought frequency (N/A in the Prodoc)	30 buffer zones with fence created with effective water catchment/river bank re-afforestation schemes to reduce siltation and evaporation water-losses as water conservation measures	30 Buffer zones have been created. Over all 44, 000 tree seedlings have been planted in 30 communities which were designated for woodlots/ plantations. These tree planting will among others are secured from bush fires, encroachment and deforestation by farmers and livestock to reduce siltation in the watershed	Project Annual Reports including 2020 Annual Report Draft), Physical Progress Report (Annex 9); Field Evaluation and Project ProDoc; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Consistent with the water conservation measures outlined in the project document (ref, page 25), tree nurseries have been established as effective water catchment/river bank re-afforestation schemes with buffer zones. The afforestation reduces evaporation and provide water loss-control system to extend the holding capacity of the dugouts and dams. The project planted trees around the dams. Even where dams existed, the TE observed the project planted trees around the water bodies (e.g., Tumu and Tampion). Other buffer zones have also been created. Fire belts are established to protect the trees to sustain the water conservation measures. Water Resources Commission carried out training workshops within river basin catchment areas to educate the communities on water resources management issues relating to avoiding deforestation activities and illegal mining that exacerbate climate impacts and vulnerabilities. The water management boards established and institutionalized form part of the

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
			and sustainability of the afforestation scheme			strategies to sustain the water catchment conservation measures.
Indicator 2.5: Learning platforms on systems for integrating climate change-related risks into community management of water resources and livelihood activities in northern Ghana institutionalized in 10 districts	N/A in the Prodoc	Lessons learnt documentation produced.	A 20-minutes video documentary, a photobook and a newsletter highlighting the progress the project from inception into mid-term of implementation have been developed.	PPR 3 (2019), Project Annual Reports including 2020 Annual Report Draft), Consultants' Physical Progress Report (Annex 9); Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Dissemination of information was done during planning and implementation of the project. The project information and publications are hosted on the MESTI website: (https://mesti.gov.gh/adaptationfund/), They include knowledge transfer materials, lessons, results, training workshops and information exchange (https://mesti.gov.gh/adaptationfund/documents/ communities; The project held peer-to-peer knowledge sharing, learning and capacity building platform for the 46 NGOs to share lessons on their respective livelihood interventions,
Output 3.: Livelihoods diversification for improved adaptation to climate change in 50 communities in northern region						
Indicator 3.2.1: Number of dry season gardening schemes for women established	Few communities benefit from effective dry season gardening	50 dry season gardening schemes for women established, directly benefitting at least 1,000 women	40 dry season gardening schemes for women established	Project Performance Report 3 (2019) Project Annual Reports including 2020 Annual Report Draft), Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		80% of dry season gardening schemes for women have been established. Fencing for security from livestock, and water supply schemes supported the dry season small holder farms adequately. The support has demonstrated the effectiveness of dry season relative to rain-fed gardening. Farmers have developed preference of dry season

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
						farming compared to rain-fed. This is driven by higher yields, productivity, increased income and profitability, and more importantly increased cycles of farming when water remained viable water These schemes are supporting over 1,590 direct beneficiaries in 40 communities to undertake the planting of pepper, okro, tomatoes among others during the dry season. Considered the most successful livelihood intervention limiting migration especially for rice farmers. To the extent that in one community, the farm, the hoses were all burnt by unidentified person because they were not benefitting from the project, and have been requesting for the expansion to cover them; which was provided because the project is a demonstration. Assemblies ate to replicate the project success under the government program of planting for food and jobs (PFJs).
Indicator 3.2.2: Number of women led agricultural product processing schemes established	*Few communities benefit from bee keeping activities*	40 community tree nurseries and wood lots, incorporating bee keeping, established	42 bee keeping schemes established in Phase I and 8 additional in Phase II, bringing the total to 50 communiti	AF Project Implementation Beneficiary Analysis 2019, PPR-3; Project Annual Reports including 2020 Annual Report Draft), Physical Progress Report (Annex 9)/Field Mission Report; Beneficiaries Interview Outcome; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		Additional 25% communities benefitted from the bee keeping schemes along the honey production value-chain established (1,348 direct beneficiaries). Key issues identified: 1. Women want increased quota in beekeeping. 2. PPEs are not sufficient (One per group). 3. Lack of clear accounting and profit-sharing regimes by members of the

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
			es benefiting 1348 direct beneficiaries			different groups in relation to their harvest. 4. Colonization of bee hives low in concrete hives compared to wooden. Requesting replacement of concrete hives. 6. Harvesting being done by other trainers, not beneficiaries, raising the question of insufficient training on harvesting techniques. 7. COVID prevented external support for harvesting at the right time, leading to loss of the harvest. 8. In some communities, they would have preferred livestock to beekeeping because the men dominate the bee keeping. (low involvement not desirable)
Indicator 3.2.3: Number of women led agricultural product processing schemes established	Few communities benefit from agricultural product processing	40 community level women led agricultural product (shea butter or honey) processing schemes established, directly benefitting at least 1,200 women	24 community level women-led agricultural product (shea butter, groundnut and baobab) processing schemes established. Over 60% of these direct	PPR- 3, (2019); Project Annual Reports including 2020 Annual Report Draft), Physical Progress Report (Annex 9)/ Field Mission Report (interview outcome-) Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		24 Agro processing centers established in 24 communities; achieved 60% women participation as the target women-led agricultural product processing schemes; benefiting over 1,260 direct beneficiaries in the processing of shea, groundnut and baobab in 24 communities.

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
			beneficiaries are women (Approx. 1260).			
Indicator 3.2.4: Household income	More than 50% of the households in the target communities have income levels below the poverty line	At least 50% of the households in the target communities increase their income by 30% by the end of the project	This indicator has been postponed due to the delays on the effective launching of livelihood related activities	PPR-3 (2019)		PPR 3 indicates independent studies using economic models were to be conducted in the 2020/2021 to determine the performance. This could be done alongside the on-going rehabilitation work to be completed by March 2021.

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
Indicator 3.3: Community tree nurseries and wood lots established for climate risk management in 40 communities	Few communities benefit from community managed tree nurseries and wood lots	40 community tree nurseries and wood lots, incorporating bee keeping, established	25 tree nurseries established benefiting over 400 direct beneficiaries in tree seedling establishment and marketing	PPR-3 (2019); Project Annual Reports including 2020 Annual Report Draft); Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		The overall performance of the community tree nurseries sector did not meet expectations due to poor market. As a result, the majority of the seedlings were not sold to off takers as expected. Hence, the sector was not considered under the Phase 2 implementation. The resources were used to support the establishment of 9 community fish farms in 2019. 62.5% of tree nurseries established aiding beneficiaries in tree seedling establishment and marketing Tree nurseries in Tampion have been destroyed due to dam overflow. Nursery inundated. Considered as the result of extreme event of flooding from spill of Bagre dam.
Indicator 3.4 Number of operational community fish farms established.	Few communities benefit from community fish farms.	20 community fish farms established, benefitting at least 10,000 people (50% of whom should be women)	A total of 30 Fish farms in rehabilitated dams/dugouts have been established in 23 Communities benefiting over 790 direct	PPR-3 (2019); Project Annual Reports including 2020 Annual Report_Draft); Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities		30 fish farms were successfully established under phase 1 and 9 under phase 2, making a total of 39 fish farms. Of the fish farming visited during the filed mission, one fish pond in Goli had very good harvest. In Tampion, the fish cages were washed away by flood, considered extreme event when the Bagre Dam was spilled in August 2020; raising the question loss and damage. One breached dam resulted in the loss of the cages Other communities had theft cases, raising security issues. Others not completed. While fish

Indicator	Baseline Level	End-of-project Target	Terminal Evaluation Assessment	Reference	Achievement Rating	Comments
			beneficiaries.			farming could be very profitable livelihood,
Indicator 3.5: Best practices for adaptation and lessons learned from the implemented actions. Related policy processes are recorded and disseminated to all 38 districts in northern Ghana through appropriate mechanisms		Produce and disseminate brochures, maps, video documentaries/Learning visits, Sign Posts etc.		PPR-3, Project Annual Reports including 2020 Annual Report_Draft), Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/) (https://mesti.gov.gh/adaptationfund/documents/ communities;		. A local Ghanaian media firm has created a baseline video documentary, baseline photobook and project newsletters for the 3rd and 4th quarters of the project's implementation. The PMU led by the Project Coordinator worked with the regional EPA Directors to host a radio discussion at the regional capitals between 5th February and 15th March 2017 in the Northern, Upper East and West regions. The radio interaction was centered on raising awareness on the project, target districts and communities as well as the relevance of the project to Government and its benefits to the target Sign Posts have been planted. project information and publications are hosted on the MESTI website: (https://mesti.gov.gh/adaptationfund/), They include knowledge transfer materials, lessons, results, training workshops and information exchange (https://mesti.gov.gh/adaptationfund/documents/ communities;

221. The next paragraph presents a series of observations based on the documents provided by the project. These observations are mainly focused on project strategy design, implementation towards result achievement and its reactive management and sustainability.

Project strategy design

222. The Project document shows excellence in quality. The design of the project includes a scientific approach, the needs and expectations of the GoG and the beneficiary groups, and lessons and recommendations arising from different kinds of pre-existing practices. In addition, it deeply explains the problems to be addressed by the project, and its components are designed in a "funnel-like structure", which allows to create the basis of scientific climate information for decision-making in the short, medium and long term; necessary for a proper management of water resources and with this, provide opportunities to diversify the livelihoods of the direct beneficiary populations with a climatic resilience perspective, indirectly addressing issues related to food security, increase economic income, reduction of youth migrations and increase female empowerment.

Project implementation towards results

223. The project has set up important arrangements for activity management, planning, monitoring and evaluation and stakeholders' participation. Corrective measures could include actions in internal communication, fund disbursement, recruitment processes, monitoring at local and district level and NGOs involvement in the project formulation process for a better understanding of the systematization of results according to indicators and a better gender perspective.

224. There is a difference in planning expenditures calendar and those showing as expenses. All planned amounts are given in project years (May to April), while expenditures are in annual calendar periods (January to December), particularly in CDRs. Thus, a certain percentage of expenses versus budget is not possible. As an estimate, it could be said that, project achieved 79% (6009,665.4/7644,214*100) as of November 2020. In order to improve the project fund utilization rate, the remaining balance of 21% has been committed in contracts including the cost of the terminal evaluations and contracts signed by government for the rehabilitation of 5 other dams. This additional rehabilitation will bring the achievement rate of the 50 dams targeted initially from 20% (10 out 50) as at 31 December 2020 to 30% (15 out 50) by March 2021. Thus, the actual terminal expenditure as at 31 December 2020 is in principle $6,356,932.32 + $649,758.19 (from the programme cycle mgt fee), representing 84.48% of the total project fund.

225. Planned schedule and budget for the rehabilitation of dams/dugouts was insufficient. Documents indicate a reduction of dams/dugouts to be rehabilitated from 50 to 12, and the latest minutes from the National Programme Steering Committee meeting shows that by February 2020, the rehabilitation was not yet finished. The final report covered only 7 dams.

Progress to outcome achievement

226. Outcome 1 "Improved basin level management and planning of water resources by the Government of Ghana, taking into account the climate change impacts on surface and groundwater sources" had greatest achievements during the first year of implementation, all

activities planned were completed. Outcome 2 "Climate resilient management of water resources by 50 communities in northern Ghana", had been fully achieved in four of five outputs, except Output 2.2 in relation to expected 50 dams/dugouts. Outcome 3 "Enhanced diversification of livelihoods by 50 communities in northern Ghana", had been fully achieved in four of five outputs, except Output 3.3, in which the community tree nurseries and wood lots established for climate risk management were lower than expected, but the bee keeping schemes established where 25% higher than expected.

227. As stated in the project document, "The main indicator of vulnerability reduction will be changes in access to water and diversification of livelihood activities when income generation will increase by 30% in at least 50% of households in the communities". There remain significant efforts for a better integration of the 3 components and better measurement of the progress in terms of livelihoods and adaptation capacity of the communities.

4.1.15 Relevance (*)

228. At national level, the project considers Ghana's National Climate Change Adaptation Strategy (NCCAS), including the establishment of Regional and District Climate Change Adaptation Committees. In response to this, the project established and trained Regional, District and Community Monitoring Committees for Adaptation to Climate Change. Various activities sought to strengthen the capacity of Ghana's District Adaptation Committees on Long-term National Climate Actions (including Ghana's recently ratified Nationally Determined Contributions (GH-NDC) of the Paris Agreement on Climate Change). Of the ten priorities listed in the National Strategy for Adaptation to Climate Change, the GoG, with the support of resources from the Adaptation Fund, directly addressed priorities 2 and 6, and contributed to priority 3.

229. This is also consistent with government priorities, such as the Growth and Poverty Reduction Strategy II (GPRS II) of Ghana, the Ghana Shared Growth and Development Agenda (GSGDA), the National Water Policy of Ghana, and the project one village one dam policy and water for all initiatives; according to the vision of the Government of Ghana through the Water Resources Commission (WRC) and all its subsidiary bodies is the sustainable management of water resources for all by 2025.

230. At regional level, the project considers the Savannah Development Authority's Sustainable Development Initiative for the Northern Savannah (2010-2030) and took into account the local structures and partners, the consolidation of institutional planning and water resources management. The project also aims to strengthen the organization and capacity of communities by implementing forest and water resources management activities to mitigate the effects of climate.

231. Besides, the GoG actively participates in the project as coordination. It has ratified many international conventions related to adaptation, including the United Nations Framework Convention on Climate Change.

232. The results fully comply with the Adaptation Fund intervention, that supports multi-sectorial projects with a holistic approach. In the case of this project 7 out of 9: Agriculture, Disaster risk reduction, Food security, Forests protection, Rural development and Water

management. Also, the project contributes to four outcomes of the AF (N°2, 3, 4 & 6) and to three outputs (N°3, 4 & 6).

233. The project also complies with the UNDAF Ghana which intends to follow the implementation of projects connected to the SDGs (sustainable development goals). In this case: the 1st one (No Poverty), linked to the increase of basic incomes and supporting communities; the 5th one (Gender Equality), with gender-oriented projects and improved representation of women; and the 6th (Clean Water and Sanitation), linked to improved management of water resources. Other SDGs are also in the line of this project like SDGs 13 (climate action). The UNDP Ghana focuses on: inclusive growth, sustainable development and democratic governance (and peacebuilding). Their vision is aligned with the project's action as it includes action towards reducing poverty, improving gender equalities and representation, improving the efficiency of local administration and strengthening Ghana's capacity to face environmental challenges.

234. The project engaged 46 community organizations in the delivery of the key products under project Outcome 3. As part of preparatory activities to build trust and foster active stakeholder participation, the Project Management Unit (PMU) in collaboration with the Regional / District Climate Change Adaptation Monitoring Committees organized community input meetings in the 50 beneficiary communities of the project. Key actors participating in the exercise included traditional authority, traditional landowner, family / clan landowners, Fulani herders, minority tribes, women, farmers along the proposed water resource, representatives of the project's district assembly officials and relevant regional institutions. The community meetings created a unique opportunity for extensive deliberations on project deliverables and expected roles of stakeholders. In each of the communities, a Community Climate Adaptation Monitoring Committee (CCAMC) was formed after the participation sessions that involved an average of ten (10) members with at least 3 women. In total, around 3,000 community members participated in these sessions.

235. During the implementation and execution of operational activities, the beneficiaries were consulted about their points of view and approaches during decision-making, making them feel the sense of belonging and ownership of the projects.

236. Cases are reported of organizations such as FORG Ghana, they created closer ties since their members live in the community and are involved in their daily activities, especially in social gatherings such as funerals, markets, naming ceremony, among others, in addition to activities in the garden. This allowed to generate greater confidence and approach to complain or ask for advice on what to do at what time.

237. On the other hand, there was also the participation of government stakeholders, such as the technical support of the Ghana Irrigation Development Authority (GIDA) for the evaluation of dams and canoes in the impact communities and to advise the PMU on the scope of repairs and what dams to prioritize.

238. The criteria designed and used to select the project communities were also based on the experience and knowledge of the implementation of the Canadian-funded Ghana Environmental Management Project (GEMP), and the funded Sustainable Land and Water Management project. By the World Bank.

239. Field Mission Report appointed boreholes in the community have been essential in proving quality drinkable water, instead of the river water related diseases, and have been essential in proving quality water for dry season farming where they are operational, productivity and easily accessible.

240. Furthermore, lessons from WASH projects in West Africa suggested two complementary solutions which are:

- Train a technician per village or group of neighboring villages inspired by some districts with a significant participation of MOFA extension agents.
- Support the creation of a social company dedicated to providing a maintenance service. Given the amount of drilling, a tight business plan can be profitable.

4.1.16 Effectiveness (*)

241. As mentioned in the previous section, the project interventions were based on government priority projects and strategies, and it is also in accordance with the United Nations Framework Convention on Climate Change.

242. The level of implementation and achievement of the products was evaluated as Moderately Satisfactory. Much has been achieved across all three components, based on analysis of annual reports.

243. The Component 1 "Water Resource Management and Planning under Climate Change", had greatest achievements during the first year of implementation, all activities planned were completed.

244. The Component 2 "Climate resilient management of water resources by 30 communities in northern Ghana", fully achieved two of three outputs, with a greatest achievement in one of the targets of the output 2.2, which arise 145 of 100 operational boreholes projected, benefitting more than 30,000 people; and output 2.3, in which target arise 40 of 30 operational irrigation systems projected, benefitting at least 2,500 farmers.

245. Component 3 "Enhanced diversification of livelihoods by 50 communities in northern Ghana", fully achieved one of three outputs, with a greatest achievement in in output 3.2, which arise 57 of 40 community level women led agricultural product (shea butter or honey) processing schemes established, directly benefitting at least 1,200 women.

246. The outputs with the lowest achievements were output 2.2., specifically regarding the goal of designing, implementing and training the community in the construction of 50 dugouts / dams. Which later decreased to 12, after that decreased to only 10 reported in operation; and actually are 15 in total, 5 of them in construction. Output 3.3, where 25 of 40 tree nurseries established benefiting over 400 direct beneficiaries in tree seedling were reached.

247. Key factor in implementation were water resource management and long-term planning to effectively address the underlying drivers of water resource degradation and stimulate investment, while taking into account and attempting to reduce the impact of climate change on surface and groundwater sources and livelihoods.

248. Baseline assessment of existing dams water storage capacity was conducted by GIDA: ascertained works that needed to be done for each site in order to increase the capacity of the

dams and dugouts, particularly the dead volumes to meet the water demand of competing needs. This assessment served as a basis for determining the Engineers' estimates of the works and informed about the designs and drawings to guide the rehabilitation works. The results of the study showed considerable siltation and reduced water storage capacities (See Table 12).

Table 12: Degree of Siltation of Existing Dams before CCA-project

Community	Region/ District	Capacity in the Month of February	Existing Maximum Capacity	Designed capacity	Reduction in dry season based on existing max volume	Potential increase in storage volume and Dead Volume
		(m^3)	(m^3)	(m^3)	%	%
Takpo	Upper West/ Nadowli	25,557	99,261	217,591	74%	119%
Ko Gbafion	Upper West/ Nandom	36,631	81,996	111,339	55%	36%
Bugubelle	Upper West /Sissala West	692	15,781	37,295	96%	136%
Kakease	Northern/ Bole	50,088	150,313	204,889	67%	36%

249. Related to the state of rehabilitated dams, water availability and impact on livelihood projects, in Tampion in Savelugu district, Northern region where an increased wire height of the spillway and the road-side embankment after dam rehabilitation, loss and damage from intensive precipitation/rainfall and inundation of the dry season farm, tree seedlings, bee keeping and the buffer zone afforestation due to overflow over an existing dam bank wall.

250. In GOLI/Nadowli/Upper West, the dam breached after the rehabilitation. One death occurred in the dam just before this rehabilitation by the project contractor and there were loss and damage of the livelihood diversification projects (fish farming).

251. In Nabughan/Upper West, the dam rehabilitation was delayed (expansion) and by the Field Mission Report the contractor were still on site doing major works. All water dependent activities are delayed too.

252. In Lamboya/Bawku West/Upper East, the desilting of the dam was not completed by the Field Mission Report. Spill way was not well done, allowing almost all the water spilling out of the dam. The community used sand bags to prevent the complete loss of water. Some of the dam irrigation control system are broken and require immediate attention. Walkway bridge is in a deplorable state endangering lives of community members who use it. Despite the above challenges, farmers had a bumper harvest in 2019 harvest season. Contractor resumed rehabilitation based on the outcome of Expert interview of GIDA during the Mission in Bolga.

253. In Tambalugu/Bawku municipal/Upper East, were found water losses from hoses and there were no critical water conservation and management observed. Dam embankment is left undone fully as heap of sand is not used, canal pipes are linking and dam water did not reach a large area reserved for dry season farming, the canal is basted mid-way and most of the water waste it. The spill way was not done so community members cannot cross to the other side of the community as the whole place is flooded.

254. In Tilli Apupunpugu, the dam needs expansion as the total number of farmers requiring water is more than the dam output. This is becoming a general challenge as dry season farming becomes a preferred farming.

255. In Kpaliwega, the dam is yet to see works done, but community member said the contractor came to the dam site some few days before the arrival of the Field Mission Team. The water from the dam with the old canal does to get to all the farmland so some farmers have to resort to carrying water to the farm, predominately done by the men.

256. In Timonde, most of the farmers have left the dam site to farm at the river side as the place is not enough for all the farmers.

257. In Yidongo, the water supply valve for the dam is not repaired. Farmers struggling to use stones to regulate the water supply.

258. As one of the strategies to face the risks associated with the implementation of the project, the PMU led by the Project Coordinator with the support of the Project Technical Officer worked with the regional Directors of the EPA to carry out a radio discussion in the regional capitals (Wa and Bolgatanga). The discussion focused on these two aspects:

- Raising awareness about the project, the target communities and districts, as well as the relevance of the project to the government and its benefits for the target communities.
- Update stakeholders on the main activities implemented and lessons documented from the start of the project.

259. Another strategy was the creation of organizational structures for the management of water resources, in the face of institutional gaps. However, stakeholder participation did not guarantee gender parity.

260. Therefore, a specific strategy to consider the gender variable from decision-making to operationalization may have achieved better results in this area. At the management moment, in the selection of the project beneficiary communities, one of the criteria was determined by the presence of women's groups and/or women leaders in the communities.

261. During the implementation once of the considerations was the boreholes location not too far from communities in order not to endanger the security of women as they access water. Also,

the project outputs in livelihoods as dry-season gardening provided women not only with access to income sources during the dry-season but also importantly access to more and more diverse sources of food.

262. Despite the fact that the program reports inclusion of women in terms of land ownership, access and control of resources, and in decision-making. In the reports that the NGOs operationalize, there is no clarity in the contribution to the empowerment and strengthening of women's organizational capacities. The results are at the percentages of participation or number of beneficiary's level.

4.1.17 Efficiency (*)

263. Except for the development of 50 dams / dugouts, which was reduced to only 15, due to higher costs than estimated in the original project document. The cost effectiveness of the project has been "satisfactory", due to the fact that project expenditures achieved so far reflect achievements that (generally) follow the goals of the results framework. Additionally, AF resources have been aligned with the financing and delivery of products that have competitive procurement components to ensure the best value for money. In addition, UNDP procurement procedures are followed.

264. The Field Mission Report appointed there is a need of audit by the Community Water and Sanitation to be commissioned to do adequate audit. Most communities reported of boreholes not operational.

265. One of the financial risks of the project was that the disbursement rate of the AF funds is slower than expected. As a result, the project experienced delays in releasing the second tranche of project funds from the Adaptation Fund Secretariat. Delays affected implementation. The UNDP Country Office in Ghana initially pre-financed some activities to keep the project running, but only to a limited extent. This slowed down the implementation of activities and, therefore, the disbursement of the resources of the AF grant. The need for extension could have been avoided, granting disbursements on time

266. Regarding the follow-up, one of the financial limitations was that the grants received by the NGO is limited and not allow a mid-term monitoring.

267. The project was able to take steps to achieve its results profitably by implementing these strategies:

- Competitive bidding process.
- Review of budget proposals received from NGOs, CSOs, LNGO.
- Use of locally available materials (locally made bee hives, wooden pond structures, etc.)

268. The results of the work with the NGOs were very competitive given the number of beneficiaries and the costs. The use of community-based NGOs for community-level interventions is more efficient than implementation by Accra or regional teams, in terms of coverage and costs, it represents a success. Interestingly, some NGOs like World Vision have mobilized co-financing as they are present in other project areas.

269. PRODOC analyzed the alternatives to the approach and the cost of the project, showing that the cost of doing nothing is greater than the cost of benefits of increasing access to water and diversifying livelihoods, etc. This analysis showed that the cost effectiveness of the project is shown to be good.

270. However, during the implementation in the MTE, only the profitability of the boreholes has been evaluated, concluding that the average cost of these boreholes with "India" pumps is competitive (if we compare it with other projects in neighboring countries).

271. The dedicated resources for the inclusion and participation of women were necessary from the conceptualization and implementation of the livelihoods interventions and improved the ownership at the community level of the project interventions. This participation of women as active agents of climate change in decision-making, especially with regard to the type of livelihood interventions, made it possible to adopt them in certain communities, considering their particular circumstances. If the resources had not been provided means that the beneficiaries and their families would have seen their livelihoods deteriorate.

272. To ensure that the needs and concerns of women's groups were reflected in the implementation of the project, resources were devoted to separate meetings and participation took place at a time and place convenient for marginalized groups, especially women.

273. As part of the engagement process with contractors and suppliers, an established criterion was developed to ensure that successful suppliers took into account gender and social inclusion issues in construction and in hiring local artisans in the construction of supply systems. One of the limitations was the lack of capacity to understand gender issues of community NGOs. To fill this gap, training workshops were organized for participating NGOs.

274. Resources from the Adaptation Fund were used directly in priorities 2 of the National Strategy for Adaptation to Climate Change: "Alternative livelihoods to minimize the impacts of climate change for poor and vulnerable local populations". Thus, the beneficiaries of the project intervention were rural populations that live on the periphery of water bodies and with very poor living conditions and lack of economic opportunities in the dry season. These populations are highly dependent on agricultural activities and natural resources. Therefore, exploitation plays an important role in generating income for their subsistence. In this way, the actions of the project were adapted to the real needs of the population, ensuring that the project would improve the population's livelihoods, taking advantage of the benefits of well-managed water resources both for their food self-sufficiency and for their source of income (diversification).

275. The project established important procedures for the management, planning and monitoring of the activity, as well as the participation of interested parties. Created an appropriate PMU for the project ensures independent and more specific project management. This arrangement is reinforced with the delegation that the project provides for NGOs specialized for the operational aspect at the community level, mainly those that have intervened in the sites for a significant time showing institutional sustainability.

276. Regarding the structure of the project formulation, the range of activities concrete and lead to the 14 expected results in a clear and logical manner. The results were effective since they were easily measurable: documents, measurements, facilities. Finally, the budgets and

schedules of the activities were described, which give a good understanding of the objectives and vision of the project.

277. The slower-than-expected disbursement rate of FA funds is reported. It was recorded that at the time of submitting the PPR for year 3, the project experienced delays in releasing the second tranche of the project funds from the Adaptation Fund Secretariat. The delays affected the implementation of key activities. However, the Project Management Unit took the opportunity (while awaiting the release of funds) to interact with regional and district Project stakeholders, including EPA, to plan the implementation of the project activity.

278. The project document describes a rigorous M&E plan in accordance to UNDP procedures. This included the definition of SMART indicators within a logical framework and the recruitment of an M&E officer within a whole data collection project. The M&E system quality as described in the Project Implementation Mechanism (PIM) is considered very high.

279. Project activities were supposed to be monitored and evaluated at four different levels: community, district, region and national level through technical and financial reports of activities that are transmitted to higher levels of the implementation hierarchy. Several reports were produced during the first two years of implementation and allowed monitoring the project's performance, measuring project results against objectives and evaluating the impact in relation to planned activities. These reports include annual reports (years 1 and 2) and quarterly reports based on the expected results and their indicators to assess the level of achievement of the results obtained during the two years of implementation. An evaluation of the NGOs was also carried out in order to evaluate the progress of the work, to share the conclusions of the field monitoring visits on the implementation of the activities on the project field, and make recommendations on the sustainability of the operations and results of the NGOs' work.

280. However, the activity reports indicated an inadequate monitoring by the regional and district EPA team regarding interventions implemented at the community level. But a real challenge remains at the intermediate scale that were the district. The fact is that the district committees were unable to do what they are supposed to do which is "to be responsible for collecting primary data on implementation of agricultural and natural resource management subprojects". The main reasons as stated by the stakeholders are the access to information (subprojects documents) and the very low frequency of the monitoring missions due to absence of budget.

281. In conclusion, the implementation of a quality monitoring and evaluation system was made possible both by having created a dedicated position within the PMU and through close work between UNDP and the PMU.

4.1.18 Overall Project Outcome (*)

282. The calculation of the overall project outcome rating is based on the ratings for relevance, effectiveness and efficiency, of which relevance and effectiveness are critical. Overall project outcome is assessed using a six-point scale, described in Table 13.

Assessment of Outcomes	Overall Project Rating Outcome

Relevance	6 = Highly Satisfactory (HS)
Effectiveness	5 = Satisfactory (S)
Efficiency	4 = Moderately Satisfactory (MS)
Overall Project Outcome Rating	4 = Moderately Satisfactory (MS)

Table 13: Outcome Ratings Scale – Relevance, Effectiveness, Efficiency

Rating	Description
6 = Highly Satisfactory (HS)	Level of outcomes achieved clearly exceeds expectations and/or there were no shortcomings
5 = Satisfactory (S)	Level of outcomes achieved was as expected and/or there were no or minor shortcomings
4 = Moderately Satisfactory (MS)	Level of outcomes achieved more or less as expected and/or there were moderate shortcomings.
3 = Moderately Unsatisfactory (MU)	Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings
2 = Unsatisfactory (U)	Level of outcomes achieved substantially lower than expected and/or there were major shortcomings.
1 = Highly Unsatisfactory (HU)	Only a negligible level of outcomes achieved and/or there were severe shortcomings
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

4.1.19 Sustainability: financial (*), socio-political (*), institutional framework and governance (*), environmental (*), overall likelihood of sustainability (*)

Financial sustainability

283. The TE Field evaluation outcomes affirmed beneficiaries continued satisfaction with the livelihood's projects with respect to increased income from the projects. The report remarks that stakeholders should be aware and really monitor the profitability of the activities to ensure the long-term sustainability. The economic model of bee keeping and shea processing seem to be strong, but fish farming is still fragile because of the dependency to the fingerling's providers, the need to always buy feed and the lack of cool chain for fish preservation. To address this issue, a long-term agreement with Ranan Ltd to provide fish feed to fish farmers has been implemented. Also, some women benefiting from dry season gardening complained about the difficulties they face in the first years of income generating activities. There is no evidence of actions to mitigate this issue.

284. It is expected that beneficiaries of "economic trees" will begin to reap the benefits within 3 years, increasing their incomes and lessen their dependence on external support to cultivate their crops. In some cases, as fish farming, beneficiaries have started generating incomes from selling products.

285. PPR states that financial instruments have been established to ensure the ongoing flow of benefits once the assistance ends. The community have full-ownership of the boreholes and have started making monthly financial contributions towards repairs and maintenance. NGO's have implemented some actions to ensure sustainability, including market linkages platforms, training for beneficiaries on basic financial management, the Village Savings and Loans Scheme (VSLA) instituted through the NGOs and CBOs, which was built on Climate resilience through village savings and lending associations (VSLA) [35], long term agreements with private companies like the commented case of Ranan Ltd.

286. Financial sustainability is then very likely, considering the variety of tools and actions that have been implemented. However, with regard to operation and maintenance is Moderately Likely that the beneficiaries would be able to sustain. This is because the TE envisaged potentially low operating service life of the project equipment supplied. The key challenge could be the depreciation rate and replacement of the equipment supplied at the end of their operational service life. This is because the depreciation rate and the total annual depreciation of the equipment could be higher than normal based on observations of the equipment types and the nature of installations during the field evaluation. The plan to hand over the livelihood projects to the District Assemblies for continued support could address these envisaged challenges and improve the ability of the beneficiaries to sustain the project. There will be the urgent need for the NGOs partners and the District Assemblies to monitor the depreciation and develop schemes to support the replacements. The Focus Group conducted during the field evaluation meetings therefore emphasized the need of the village savings being expanded to include the government's treasury bills in mainline banking. This could be a source of collateral for raising commercial loans for expansion of the demonstration projects to increase the capacity and ability of the cooperatives to finance eventual replacement of the equipment at the end of their service life.

Socio-political sustainability:

287. Considering that the government is involved in the implementation of the project, long-term sustainability is always subjected to risks of political changes. As indicated in the PPR, the government has indicated its willingness to mobilize additional resources within its national budget and with support from international climate finance to support water resource management and implementation of resilient adaptation measures. However, there are no formal commitments to ensure the budget in the medium or long term and implementation will depend on the political willingness.

288. Stakeholders have demonstrated a high level of ownership. The government is expected to be helping the project objectives through its own programs, such as "water for all, infrastructure for all" to support access to water, the "one village, one dam" policy to support dam rehabilitation and planting for food and jobs programmes. On a local scale, NGO's have implemented several strategies to create awareness and ensure long-term sustainability from beneficiaries, including actions like capacity building for project beneficiaries, setting up community-based Local Project Management Committee and partners, establishment of implementing committees, and training of local people to follow up the initiatives.

[35] https://care.org/wp-content/uploads/2020/06/SII-Womens-Empowerment-and-VSLA-Brief-2009.pdf

289. The private sector has also shown interest, Guinness Ghana Limited, as part of their water replenishment strategy, has consulted UNDP for a potential partnership to provide additional funding to support the upscaling and replication of the rehabilitation of the dams undertaken by the project.

290. Lessons learned have been properly documented in the PPR. Key results and lessons of the current project especially lessons from the livelihoods interventions will be crucial in the implementation of new projects, like the "Ghana Shea Landscape REDD+ Project" that aims to significantly reduce emissions from deforestation and forest degradation in the Northern Savannah Zone (NSZ), whilst leveraging private sector investments in the shea value chain and supporting women's empowerment through the development of sustainable and more profitable business opportunities for rural women.

291. There is no specific strategy to transfer information for future projects, but strategies, results and lessons learned will be available through the project documentation that is accessible for involved stakeholders.

292. As indicated in lessons learned on the PPR, women generally face higher risks and greater burdens from the impacts of climate change. There was a deliberate effort to ensure greater percentage of the project beneficiaries were women. The gender results achieved are expected to be long term.

Institutional framework

293. The project reported a strong commitment from Government ministries during the project launch and implementation. The existence of policy frameworks such as the NCCP and INDCs provide favorable environment for the replicability and scalability of the project interventions.

294. The project released funds to the National Disaster Management Organization (NADMO) to build the capacities of Climate Change Adaptation Committees at regional, districts and community levels to help contribute to achieving the national climate change targets as enshrined in the Sendai framework, to build the capacities of Climate Change Adaptation Committees at regional, districts and community levels.

295. The Climate Change Adaptation Monitoring Committees will also continue to provide platform for a long-term and sustained process of understanding adaptation, synergies, gaps, and the required adjustments in existing interventions to ensure that they are well integrated and contribute to broader climate change and development planning and delivery at the national, regional and local levels.

296. There is indication that the project has worked closely with key actors in the government, such as the Ministry of Environment, Science, Technology and Innovation. Midterm evaluation also shows that 85% of the communities have a very high or high engagement in the project. This engagement is reinforced by the satisfaction they have from the access to water and the expectation of a raise in livelihoods which helps to create awareness and ensure sustainability. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased with training for 150 people (40% female). 80% targeted population (40% of female participants targeted) are aware of predicted adverse impacts of climate change, and apply adaptation measures.

297. Leadership of the project has proven to have a clear understanding of the project objectives, strategies and implementation challenges. There has been a continuous learning on how to work with the communities and a clear ability to report and adapt the strategies based on the lessons learned. Therefore, the project leadership should have the ability to respond to future institutional and governance changes.

298. PPR claims that the capacities gained by the key government institutions through the development and implementation of the plans will be maintained and further use the experience to continue the project within their respective sectors and institutions. For example, most of the key institutions such Water Resource Commission and Environmental Protection Agency, have demonstrated its commitment to eventually mainstream project activities within their day-to-day activities.

Environmental sustainability:

299. Considering that the implemented strategies rely on water availability, even though this diversifies the livelihoods, they are still vulnerable to climate conditions. Stakeholders identified the following three learning objectives which target the principal causes of climate change vulnerability in the Northern regions:

- Promoting a land tenure system that favors continuous crop fields for supply of services.
- Enhancing the institutional capacity in integrating climate change mitigation in water resources planning and management to deal with climate risks.
- Improving diversification of livelihoods of rural communities during off-farm periods to mitigate climate change impact.

300. Sustainability was assessed on a four-point scale, as described in Table 14:

Sustainability	Rating
Financial resources	4 = Likely (L)
Socio-political	4 = Likely (L)
Institutional framework and governance	4 = Likely (L)
Environmental	4 = Likely (L)
Overall Likelihood of Sustainability	4 = Likely (L)

Table 14: Sustainability Ratings Scale

Ratings	Description
4 = Likely (L)	There is little or no risks to sustainability
3 = Moderately Likely (ML)	There are moderate risks to sustainability
2 = Moderately Unlikely (MU)	There are significant risks to sustainability
1 = Unlikely (U)	There are severe risks to sustainability
Unable to Assess (UA)	Unable to assess the expected incidence and magnitude of risks to sustainability

4.1.20 Country Ownership

301. The project is designed to support the GoG kick-start the implementation of 3 core national priorities for climate change adaptation as outlined in the National Climate Change Adaptation Strategy (NCCAS) as well as those highlighted in the 2nd National Communication. Ghana, as a country that does not belong to the Least Developed Countries (LDCs) and is obliged and supported to prepare a National Adaptation Programme of Action through the UNFCCC process.

302. As a result, Ghana developed a National Climate Change Adaptation Strategy. Out of the ten priorities listed in this Strategy, the GoG, with the support of the Adaptation Fund resources, will directly operationalize national priorities # 2 and 6 (Alternative livelihoods: minimizing impacts of climate change for the poor and vulnerable; and Enhancing national capacity to adapt to climate change through improved land use management), and contribute to priority #3 (Managing water resources as climate change adaptation to enhance productivity and livelihoods). It also considered the National Growth and Poverty Reduction Strategy (GPRS II) of Ghana, the National Water Policy and the National Action Programme to Combat Drought and Desertification.

303. The objective of Ghana's Water Vision for 2025 is to "promote efficient and effective management system and environmentally sound development of all water resources in Ghana". The project directly contributes to the realization of this vision in the driest northern regions of the country. In accordance with the Ghana´s National Water Policy and its consideration of water as a cross-cutting element of the Growth and Poverty Reduction Strategy (GPRS II), the project downscaled the projections available for the White Volta, Black Volta and Oti Basins, reviewed the White Volta Plan and adopted at inter-ministerial level and developed the Black Volta and 5 sub-basin plans in the White Volta and the Oti Basins. Some of the measures developed within the framework of the Water and Climate Development Program (WACDEP) project.

304. The project is coordinated by a Program Steering Committee (PSC) and consists of high-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies (Water Resources Commission, Community Water and Sanitation Agency, and Ministry of Food and Agriculture, and others), civil society organizations, and other development partners. Their roles and responsibilities are: overall responsibility for project coordination, management, monitoring and evaluation as well as fiduciary management, with respective sector agencies responsible for management of field implementation, under the oversight of PSC.

305. Key among the stakeholders who participated in the project included, the traditional authority, traditional landowner, family/clan land owners, Fulani Herdsmen, minority tribes, women, farmers along the proposed water resource, representatives of project district assembly officials and relevant regional institutions/departments.

306. In the inaugural meeting for the Programme Steering Committee, 19 participants organizations were nominated members of the Steering Committee of the Project and 16 were representatives of relevant institutions. Participants came from the Ministry of Local Government and Rural Development, Community Water and Sanitation Agency, Ghana

Meteorological Agency, CSIR-Water Research Institute, Environmental Protection Agency (EPA), Ministry of Environment, Science, Technology and Innovation (MESTI), Savanah Development Authority (SADA), UNDP, Volta River Authority (VRA), Ghana Irrigation Development Authority (GIDA), National Disaster Management Organization (NADMO), Ministry of Food and (MOFA) , Water Resources Commission (WRC) and World Vision International-Ghana. The media were also represented by the Ghanaian Times and the Daily Graphic.

4.1.21 Gender equality and women's empowerment

307. As a strategy to ensure that the needs and concerns of women's groups are well reflected in project implementation, separate meetings and engagements were held at a time and place convenient for marginalized groups, especially women. Given the concerns raised during the consultations at the community level, an additional criterion was added in the selection of the beneficiary communities of the project, this was determined by the presence of groups of women and / or women leaders in the communities.

308. Women were directly involved in the entire value chain of dry season activities and other livelihood interventions such as fish farming and agricultural processing schemes. The inclusion and participation of women from the conceptualization and implementation of the livelihood's interventions improved the ownership at the community level of the project interventions. Along these lines, the boreholes were located not far from the communities so as not to endanger the safety of women in their access to water, also providing access to drinking water to more than 30,000 people, mainly women and children.

309. There was a deliberate effort to ensure that a higher percentage (60%) of the project's beneficiaries are women. First, a simple gender analysis was conducted for each livelihood intervention at all project sites. The project beneficiaries were then selected based on the findings of the gender analysis. One of the project's indicators was to increase the number of gardening programs for women in the dry season. The inclusion and participation of women from the conceptualization and implementation of livelihoods interventions have produced positive results that include an increase in the income levels of women's groups and a greater ownership at the community level of the project interventions. The gender results achieved are considered long-term

310. The fast-track self-helped upscaling of project activities by the women using innovative practices demonstrated that women have a role as change agents in adapting to climate change impacts. The project demonstrated small-scale activities provide a boost to business growth, development and food security improve among the women population. Most of these women participated actively in various project activity implementation including community entry engagements, representation on the community climate adaptation committee as well tree planting exercises.

311. Additionally, to address the challenge of high dependence on wells and natural water sources boreholes were drilled in climate risks communities, providing access to clean water to over 30 000 people, mainly women and children who used to travel far to obtain it.

312. As part of the challenges, some NGOs showed limited capacity to include the gender variable in their projects, as well as the systematization and reporting of the indicators. Also, some women benefiting from dry season gardening complained about the difficulties they face in the first years of income generating activities. When they migrate, they are housed and fed by the farmers where they sell their labor. So, even if the income is given by the farmers at the end of the campaign the women do not have to worry about the day-to-day expenses. But now that they do not migrate "because of NGO projects," they expressed that have no sustenance while waiting for the harvest.

313. In general terms, the project contributed to closing gender gaps in access to and control of resources and targeting socio-economic benefits and services for women. Because women were directly involved in the entire value chain of dry season activities and other livelihood interventions such as fish farming and agricultural processing schemes. Also, women have access to land to grow their crops and to irrigation through wells.

314. The project considered gender equity emphasizes on operational matters, for example, project documents highlight the decision to promote gender equity for beneficiaries. The results are shown at the level of the number of beneficiaries; however, as a recommendation, this strategy can be strengthened from more structural levels by considering the theory of change and making decisions level.

4.1.22 Cross-cutting Issues

315. The project increases the economic income of households, their access to water resources and their access to certain products that improve their food security, in both cases by generating new sources of employment and strengthening some products chains.

316. Many of these measures had positive repercussions on community natural resource management agreements, such as sustainable soil management, through agroforestry and better use of water, which has repercussions on the regeneration of these natural resources.

317. The investment made by the project through the construction of dams, dugouts and provision of irrigations systems, added to the judicious management of watersheds and the livelihoods interventions, improved food production for home consumption and market sale. And reduce the risks and vulnerabilities due to weather-induced disasters.

318. Regular field monitoring and engagement of key stakeholders including traditional leaders, high-level government officials at both the local and national levels improved project results. Initially, key stakeholders like the chiefs and landowners were not willing and ready to release their lands closer to the major water bodies for protection. However due to regular engagement with the key stakeholders including the traditional leaders this issue was resolved, opening space for the creation of buffer zones for water sources.

319. The very core of the project objectives aims to contribute and prepare the communities to cope or mitigate disasters and impacts related with climate change, with especial care of vulnerable groups. Therefore, it is expected that the result of improving water resource management and long-term planning effectively address the underlying drivers of water resource degradation while reducing the impact of climate change on surface and groundwater sources and livelihood. Other mitigation results like tree plantations and bee

farming will reduce GHG emissions mitigating climate changes impact. Water use will be optimized with the actions like developing climate smart water management plans, rainwater harvesting systems, develop measures for water conservation.

320. The implementing entity worked with the community leaders, affected farmers and community climate adaptation committees during focus group discussions and community engagements meetings to leasing their concerns and sensitive community member, aiming to benefit marginalized groups.

321. The project has also reduced the pressures on women's groups. Dry-season gardening provided women, not only with access to income sources during the dry-season, but also importantly access to more diverse sources of food and water resources in ways that do not threaten their safety. As a result of the deliberate involvement of women, 40 dry season gardening schemes for women have been established, supporting over 1,590 direct beneficiaries in 40 communities. PPR has also reported the benefits of the project, demonstrating that small-scale activities provide a boost to business growth, development and food security improve among the women population. Access to basic resources like water, through the implemented boreholes, benefit mainly women and children who used to travel far to obtain it, allowing them to learn and develop other activities.

322. During implementation of livelihood diversification activities, dry season gardening alternatives were implemented, known as "economic trees", like moringa, mango and teak that are tolerant to current climate extremes. These trees are a major source of income to households particularly women who play important roles in the provision of household food and needs.

323. Market chains are one of the results that can generate more sustainability of livelihoods. The diversity of species that are economically exploited and tolerant to current climatic extremes are an important source of income for households; especially for women, who play an important role in providing food and household needs. Another important aspect has been irrigation in the dry season, which increase food security, income diversification and reforestation of depleted tree cover.

324. The human rights-based approach took particular consideration in the principles of full participation and inclusion, equality and non-discrimination, respect to rule of law and the dignity of all persons and all stakeholders have been mainstreamed and took into consideration during the project design and implementation stages. For example, at the proposal development stage, all the major government stakeholders, CBAs and CSOs, men, women and youth groups were consulted and there was overwhelming consensus with regards to the main components as well as the log frame (outcomes, outputs, activities, indicators etc.) of the project. These was enhanced during the project implementation stage when all stakeholders including, including youth, elders, men, especially women, and other marginalized groups, were engaged to ensure that the project provides equal.

4.1.23 Catalytic/Replication Effect

325. As indicated in the project reports, the potential for replication and scaling up the climate resilience measures undertaken by the project is very high. The government has indicated its

willingness to follow up the objectives through their projects "water for all, infrastructure for all", the "one village one dam" policy, and planting for food and jobs programs. Also, Guinness Ghana Limited, as part of their water replenishment strategy, have consulted UNDP for a potential partnership to provide additional funding to support the upscaling and replication of the rehabilitation of the dams, which could allow replication nationally and internationally. More evidence of replication is the planned project "Ghana Shea Landscape REDD+ Project" that aims to significantly reduce emissions from deforestation and forest degradation. Finally, the training and sensitization of beneficiary communities and the existence of policy frameworks provide favorable environment for the replicability and scalability of the project interventions.

326. In a demonstration level, the dissemination of information was done during planning and implementation of the project. A local Ghanaian media firm has created a baseline video documentary, baseline photobook and project newsletters for the 3rd and 4th quarters of the project's implementation. Besides, the PMU led by the Project Coordinator worked with the regional EPA Directors to host a radio discussion at the regional capitals between 5th February and 15th March 2017 in the Northern, Upper East and West regions. The radio interaction was centered on raising awareness on the project, target districts and communities as well as the relevance of the project to Government and its benefits to the target communities; and updating stakeholders on the major activities implemented and lessons documented since the inception of the project.

327. Steps that have been taken to catalyze the public good included the strengthening of the approach of alternative organizational structures for the management of water resources, to ensure the effective implementation of management plans, establishing five sub-basin committees, namely Noumbiel, Dapola, Bamboi, Bui and Vonkoro for the Volta Negro basin. This is also part of the efforts of the Water Resources Commission to decentralize the management of water resources in the basins. There is evidence of several local strategies that were implemented and produce public goods. Boreholes implementation includes, besides the water access structure, training of local people for its maintenance and a sensible supply to reduce GHG emissions and easy operation. There is also adoption of indigenous technologies such as woven torch, compost preparation and the use of neem leave extract as insecticide, methods that can be widely used in a sustainable way.

328. Regarding the knowledge transfer, there is large evidence of dissemination of information, lessons, results, training workshops and information exchange. For example, the Regional, District and Community based Climate Change Adaptation Monitoring Committees facilitated three regional training meetings, 10 districts level meetings and 50 community level engagement. Several hundreds of people were trained within the project framework. Training included fire reduction; afforestation and buffer zones protection; implementation of profit-making activities (dry season gardening, bee keeping, fish farming, agricultural processing). The project also performed inception trainings and provision of basic tools for maintenance for the borehole's caretakers.

329. In capacity building area, through the several national studies on the Black and Oti River Basins, the project has built the capacity to understand the trends, historic and future projections on water resources as well as the preparation of Investment Plans for Oti and Black Volta to unlock further funding for developing these water resources. The project released funds to the National Disaster Management Organization (NADMO) to build the capacities of

Climate Change Adaptation Committees at regional, districts and community levels to help contribute to achieving the national climate change targets as enshrined in the Sendai framework. Moreover, the use of community-based, local NGOs and CSOs in the implementation of some components of the project builds the capacity of these organizations in fund raising and management, community mobilization as well as monitoring and evaluation of community led adaptation measures at the local level.

4.1.24 Progress to Impact

330. Since planning of the project, the definition and implementation of the objectives is expected to result in improved water resource management and long-term planning to effectively address the underlying drivers of water resource degradation and stimulate investments, while taking into account and trying to reduce the impact of climate change on surface and groundwater sources and livelihood. GHG emissions is expected to be reduced considering that the project has encourage key actions on the main outcomes, such as tree plantations and bee farming. Water use will be optimized with actions like the developing of climate smart water management plans, rainwater harvesting systems, develop measures for water conservation.

331. There is no written documentation quantifying the environmental stress reduction, but it is expected to happen, especially in the long term. Project reports indicate the implementation of positive findings like cultivated land, forests, watersheds and protected/rehabilitated areas in different degrees of effectiveness.

332. As it has been indicated, the project reported a strong commitment from Government ministries during the project launch and implementation. The existence of policy frameworks such as the NCCP and INDCs provide favorable environment for the replicability and scalability of the project interventions. Besides, the Adaptation Fund project collaborated with the GCF readiness project to train Metropolitan, Municipal and District Assemblies (MMDAs) to incorporate the Intended Nationally Determined Contributions (INDCs) checklists with respect to the Paris Agreement. The adoption of the Paris Agreement requires that Ghana puts in place sustainable national arrangements to enable it effectively develop and implement Ghana's Nationally Determined Contributions (GH-NDCs) especially at the local level, contributing to core changes in legal frameworks and policies that benefit environment.

333. One of the contributions to income and food security is access to land to grow crops, with the aim of emphasizing the inclusion of women to improve their livelihoods. It is also expected that beneficiaries of "economic trees" will begin to reap the benefits within 3 years, increasing their incomes and lessen their dependence on external support to cultivate their crops. In some cases, as fish farming, beneficiaries have started generating incomes from selling products.

334. Unintended impacts have been reported, like the effects in reducing the migration of young people due to the participation in the gardening of the dry season and the control of the sedimentation of the river due to the revegetation of the riparian zone.

335. Some risk that could affect long-term progress of the project impact are: (1) lack of funding from government or other stakeholders to maintain or increase key activities, (2) major changes in national policies and legislation, (3) breach of agreements with public and private

entities that support the long-term sustainability of the implemented activities and (4) poor or none monitoring from well-informed personal to follow up the implementation, maintenance and sustainability of the project.

336. With regard to the sexual division of labor and its relationship with the search for water for consumption and food assurance, the project has reduced the pressures on women's groups. Dry-season gardening provided women not only with access to income sources during the dry-season but also importantly access to more diverse sources of food. PPR has also reported the benefits of the project, demonstrating that small-scale activities provide a boost to business growth, development and food security improve among the women population. It has also been proved that women have an important role as change agents in adapting to climate change impacts. Access to basic resources like water, through the implemented boreholes, benefit mainly women and children who used to travel far to obtain it, allowing them to learn and develop other activities.

337. Mid Term report identified the following actions and results towards gender equality:

- Existence of women associations involved in profit-making activities.
- The adaptation committees count women as members.
- The groups of beneficiaries of NGO interventions have a significant number of women.
- Monitoring and Evaluation statistics are presented with the number of women.

5 MAIN FINDINGS, CONCLUSIONS, RECOMMENDATIONS, LESSONS LEARNED

Main Findings

338. This section presents specifics observations based in the project documents provided by the PMU and the TE Field Mission Report. These observations mainly focused on project strategy design, implementation towards results achievement, following the evaluation question on Annex 6.5, relative to the Relevance, Efficiency, Effectiveness, Result, Sustainability, Gender equality and women's empowerment and Cross-cutting and UNDP Mainstreaming Issues.

339. **Project strategy design:** The Project document is of an excellent quality. The design of the project includes a scientific approach, the needs and expectations of the GoG and beneficiary groups, and lessons and recommendations from different kinds of pre-existing practices. In addition, it explains in depth the problems addressed by the project and its components are designed in a "funnel-like structure", which allows to create the bases of scientific climate information for decision-making in the short, medium and long term; necessary for a proper management of water resources and with this, provide opportunities to diversify the livelihoods of the directly beneficiary populations with a climatic resilience perspective, indirectly addressing issues related to food security, increase economic income, reduction of youth migrations and increase female empowerment.

340. **Project relevance:** The project's relevance is rated to be **Highly Satisfactory (HS).** It improves national adaptation actions taken to address climate change. The project supports the achievement of three of the ten national priorities for climate change adaptation, as outlined in the 2011 National Climate Change Adaptation Strategy (NCCAS). This is also consistent with government priorities, such as the Growth and Poverty Reduction Strategy II (GPRS II) of Ghana and the Ghana Shared Growth and Development Agenda (GSGDA). In addition, the level of coherence between project and national policy priorities and strategies is high, including the attention to the National Water Policy of Ghana, the One Village One Dam policy and the project Water for all initiatives; according to the vision of the Government of Ghana through the Water Resources Commission (WRC). The project also responds to the need to improve water resources management practices (particularly wetland conservation) to address climate impacts, risks and vulnerabilities highlighted in the Ghana's Second National Communication (NC2), Third National Communication (NC3) and Fourth National Communication (NC4)[36] submitted to the United Framework Convention of Climate Change as well as the World Bank study on Economics of Adaptation to Climate Change (EACC) in Ghana[37]. The project currently is contributing significantly to the government's flagship programmes designed to create employment particularly for the youth in rural and peri-urban communities, thereby improve income levels and standard of living, as well as reduce rural-urban migration. These three flagship programmes are one

[36] https://unfccc.int/non-annex-I-NCs

[37] Ghana - Economics of Adaptation to Climate Change (EACC): Main report (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/278431468337213682/Main-report

village one dam (IV1D)[38], planting for food and jobs (PFJs)[39] and one district one factory (ID1F)[40].

341. At regional level, the project has a high level of involvement of local and national stakeholders in project origination and development, considering the Savannah Development Authority's Sustainable Development Initiative for the Northern Savannah (2010-2030) and taking into account the local structures and partners, the consolidation of institutional planning and water resources management and strengthen the organization and capacity of communities. The project also engaged 46 community organizations in the delivery of the key products. The community participations included key actors as traditional authority, traditional landowner, family / clan landowners Fulani herders, minority tribes, women, farmers along the proposed water resource, representatives of the project's district assembly officials and relevant regional institutions.

342. There is a high level of coherence between project objective and AF strategic priorities. The results fully comply with the AF intervention, that supports multi-sectorial projects with a holistic approach. In the case of this project 7 out of 9: Agriculture, Disaster risk reduction, Food security, Forests protection, Rural development and Water management. Also, the project contributes to four outcomes of the AF (N°2, 3, 4 & 6) and to three outputs (N°3, 4 & 6).

343. The level of coherence between project objective and design with UNDAF its also high. The programme complies with the UNDAF Ghana which intends to follow the implementation of projects connected to the SDGs (sustainable development goals). In this case: the 1st one (No Poverty), linked to the increase of basic incomes and supporting communities; the 5th one (Gender Equality), with gender-oriented projects and improved representation of women; and the 6th (Clean Water and Sanitation), linked to improved management of water resources. Other SDGs are also in the line of this project like SDGs 13 (climate action). The UNDP Ghana focuses on: inclusive growth, sustainable development and democratic governance (and peacebuilding). Their vision is aligned with the project's action as it includes action towards reducing poverty, improving gender equalities and representation, improving the efficiency of local administration and strengthening Ghana's capacity to face environmental challenges

344. **Overall Project Outcomes**: The achievement of outcomes is rated as **Moderately Satisfactory (MS)** given the level of implementation. A lot has been achieved across the three components, and the Component 1 is rated as Highly Satisfactory. This has been achieved even with a delay in the start of the project because of the late release of funds. However only 10 of initial 50 dams/dugouts projected was achieved by the December 2020. The rehabilitation of additional 5 dams have been commenced with committed budgets, which has improved the project fund expenditure rate to 84.48% ($6,356,932.32 + 649,758.19 related to the Project Cycle Management Fee) as at 31 December 2020. 25 out of 40 community tree nurseries and wood lots were achieved because of poor market, and 40 out of 50 dry season gardening schemes were implemented. (See Annex 6.9 -Physical project report summary).

[38] https://www.msdi.gov.gh/projects/3/; Ministry of Special Development Initiatives

[39] https://mofa.gov.gh/site/programmes/pfj

[40] https://www.moti.gov.gh/1d1f/about

345. Except for the development of 50 dams / dugouts, which was reduced to only 15, due to higher costs than estimated in the original project document. The cost effectiveness of the project has been "satisfactory", due to the fact that project expenditures achieved so far reflect achievements that (generally) follow the goals of the results framework. Additionally, AF resources have been aligned with the financing and delivery of products that have competitive procurement components to ensure the best value for money. In addition, UNDP procurement procedures are followed.

346. **Project implementation towards results:** The project has set up important arrangements for activity management, planning, monitoring and evaluation and stakeholders' participation. Corrective measures could include actions in internal communication, fund disbursement, recruitment processes, monitoring at local and district level and NGOs involvement in the project formulation process for a better understanding of the systematization of results according to indicators and a better gender perspective.

347. The project achieved the objective of obtained the necessary information for the establishment of actions that reduce the vulnerability of the selected communities, by improving the infrastructure for the collection and provision of water, establishing buffer zones for its long-term maintenance and enhanced activities that are resilient to projected changes in climate, including in this regard, an improvement in food security, household economic income and the empowerment of women. All these results have a high potential for sustainability over time due to the high involvement of different groups and community perspectives, now more trained, capable and empowered to collaborate themselves in monitoring and scaling up. The project provided (1) alternative livelihoods, (2) enhance national capacity and (3) management of water resource as climate change adaptation action.

348. **Overall Quality of M&E:** In terms of monitoring and evaluation, the project is rated as **Moderately Satisfactory (MS).** The project document describes a rigorous M&E plan in accordance to UNDP procedures. This included the definition of SMART indicators within a logical framework and the recruitment of an M&E officer within a whole data collection project. The M&E system quality as described in the Project Implementation Mechanism (PIM) is considered very high.

349. There were both adequate monitoring of environmental and social risks, and a clear evidence of the involvement of relevant institutions (EPA and GIDA) and adaptation committees at the national, regional, district and community level in the monitoring of activities in addition to monitoring functions performed by the Project Management Unit (PMU)[41] ; There were however some reports from NGOs indicating that there was a poor sense of timing at some stages of project implementation, since there was a lot of activities yet to be undertaken. . Besides, there is evidence showing that M&E budget was not sufficient and NGOs needed a better understanding of the systematization of results according to indicators. The project activities were monitored and evaluated at different levels: community, district, region and national level, with some improvement points at the local and district level.

[41] AF-M&E Plan for Livelihood NGOs

350. The EPA offices at the Regional and District level monitored and reported on the project performance of the NGOs to the PMU and the Project Steering Committee (See Annex 1[42]). The EPA submitted quarterly review of the Livelihood Sub-Project implementation performance reports of all the 46 NGOs involved as local partners in the implementation of the livelihood projects (bee keeping, dry season farming, agro-processing, fish farming, tree seedlings establishment) [43]. A study validation committee made up of UNDP, EPA, MESTI, MOFA, Gmet, WRC, CSRI-WRI, VRA, NADMO and MoF also periodically reviewed the performance of the NGOs who were selected by a bidding process as partners of the PMU to implement and deliver the livelihood projects (See Annex 2[44]).

351. Besides, there is evidence showing that M&E budget was not sufficient, and NGOs needed a better understanding of the systematization of results according to indicators. The project activities are monitored and evaluated at different levels: community, district, region and national levels, with some room of improvement at the local and district level.

352. **Effectiveness:** The level of implementation and achievement of the products was evaluated as **Moderately Satisfactory (MS)**. Much has been achieved across all three components, based on analysis of annual reports. The Component 1 "Water Resource Management and Planning under Climate Change", had greatest achievements during the first year of implementation, all activities planned were completed. The Component 2 "Climate resilient management of water resources by 30 communities in northern Ghana", fully achieved two of three outputs, with a greatest achievement in one of the targets of the output 2.2, which arise 145 of 100 operational boreholes projected, benefitting more than 30,000 people; and output 2.3, in which target arise 40 of 30 operational irrigation systems projected, benefitting at least 1,500 farmers. Component 3 "Enhanced diversification of livelihoods by 50 communities in northern Ghana", fully achieved one of three outputs, with a greatest achievement in in output 3.2, which arise 57 of 40 community level women led agricultural product (shea butter or honey) processing schemes established, directly benefitting at least 1,200 women.

353. The outputs with the lowest achievements were output 2.2., specifically regarding the goal of designing, implementing and training the community in the construction of 50 dugouts / dams. Which later decreased to 12, after that decreased to only 10 reported in operation; and actually are 15 in total, 5 of them in construction. There were changes in the structure of existing dams, which required more works than originally anticipated. These additional works resulted in additional cost which does not permit the project to rehabilitate the planned dams at the beginning. Output 3.3, where 25 of 40 tree nurseries established benefiting over 400 direct beneficiaries in tree seedling were reached, and only 80% of dry season gardening schemes for women have been established, but 25% additional communities benefitted from the bee keeping schemes.

354. Baseline assessment of existing dams water storage capacity was conducted by GIDA: ascertained works that needed to be done for each site in order to increase the capacity of

[42] Adaptation Fund Project, Report on Monitoring of Tree Planting Sites and Fencing Activities under the Adaptation Fund Project (EPA, February 2017)
https://drive.google.com/file/d/1E7a1skiNXrUl2HXpIpGbGa6RFxV9lMGE/view?usp=sharing

[43] NGOs Livelihood sub-project implementation review reports

[44] Report on the Review of Progress of Work of NGOs Implementing Livelihood Sub-Projects
https://drive.google.com/file/d/1P9Kf3dzL6D1qvlA5D1yj8HNpY5TweF59/view?usp=sharing

the dams and dugouts, particularly the dead volumes to meet the water demand of competing needs. This assessment served as a basis for determining the Engineers' estimates of the works and informed about the designs and drawings to guide the rehabilitation works. The results of the study showed considerable siltation and reduced water storage capacities (See Table 12).

355. As stated in the project document, "The main indicator of vulnerability reduction will be changes in access to water and diversification of livelihood activities when income generation will increase by 30% in at least 50% of households in the communities". There remain significant efforts for a better integration of the 3 components and better measurement of the progress in terms of livelihoods and adaptation capacity of the communities.

356. **Project Finance / Efficiency:** The financial execution of the project is rated as **Satisfactory (S).** The project achieved 79% ($6,009,665.4/$7,644,214*100) as at November 2020. In order to improve the project fund utilization rate, the remaining balance of 21% has been committed in contracts including the cost of the terminal evaluations and contracts signed by government for the rehabilitation of 5 other dams (See Annex 6.14). This additional rehabilitation will bring the achievement rate of the 50 dams targeted in initially from 20% (10 out 50) as at 31 December 2020 to 30% (15 out 50) by 31 March 2021. The low implementation rate is attributed to low initial budget estimate for the rehabilitation dams/dugouts at the project design stage. Thus, the actual terminal expenditure as at 31 December 2020 is in principle $6,356,932.32 (project activities) and $649,758.19 (programme cycle mgt fee). The total utilization represents 84.5% of the total project fund initiatives.

357. **Sustainability:** The sustainability is rated as **Likely (L).** The project demonstrated increased productivity and income generation from dry season farming with irrigation/controlled water use relative to rain fed small holder farming. As a result, dry season gardening has become the preferred small holder farming practice. Integration of dry seasoning farming in the government's programme of planting for food and jobs (PFJ) modules[45] could provide continued support for the fencing, water supply and inputs to the communities to sustain the livelihood diversification.

358. Similarly, the number of small-scale shea nut processing and shea butter production plants, and cereals and grains milling plants established by the project could be packaged as bundled projects to benefit from the governments flagship programme of one district one factory (1D1F) for sustainability. Likewise, the maintenance of the 15 small dams and dug outs constructed or rehabilitated by the project under the government's one district one dam policy and projects and Rearing for food and jobs (RFJ)[46] would ensure sustainability of water supply for the dry season gardening and also enhance small scale aquaculture[47]. In areas where fish farming was successful, there was very good harvest and cooperative earnings of the project beneficiaries. The dry season farming constituting about 51 % of livelihood

[45] https://mofa.gov.gh/site/programmes/pfj

[46] https://mofa.gov.gh/site/programmes/pfj/70-pfj/pfj-modules/328-rearing-for-food-and-jobs-rfj

[47] https://mofa.gov.gh/site/agribusiness/investment-areas/53-enhancing-small-scale-aquaculture-towards-agribusiness-development

projects have potential of reducing migration of the youth to urban and peri urban areas during the dry season.

359. The Communities have established very active Village Saving & Loan Association (VSLA) for managing their incomes to allow for meeting maintenance needs. The system has the potential of being managed as treasure bills in the mainline banking for leveraging small loans facility for the expansion of fencing and cultivated lands, and cages for aqua culture, and maintenance of pumps and Agro-processing equipment.

360. PPR states that financial instruments have been established to ensure the ongoing flow of benefits once the assistance ends. The community have full-ownership of the boreholes and have started making monthly financial contributions towards repairs and maintenance.

361. The project contributed to the three learning objectives identified in the first year. These were based on the adaptation actions identified for the project which targeted the principal causes of climate change vulnerability in the Northern regions of Ghana. The continuity of the flagship programmes of the current government from 2020-2024 could become the key drivers for the suitability of the livelihood projects. This sustainability strategy could be realized through the handing over programme[48] designed by MESTI, particularly the Agro-processing plants to the Local governments (MDAs) in the 4 regions (Northern, Upper East, Upper West and Savana). The MDAs are prepared to provide support to the projects to ensure their sustainability as part of the on-going flagship programmes.

362. Considering that the government is involved in the implementation of the project, long-term sustainability is always subjected to risks of political changes. As indicated in the PPR, the government has indicated its willingness to mobilize additional resources within its national budget and with support from international climate finance to support water resource management and implementation of resilient adaptation measures. However, there are no formal commitments to ensure the budget in the medium or long term and implementation will depend on the political willingness.

363. Stakeholders have demonstrated a high level of ownership. The government is expected to be helping the project objectives through its own programs, such as "water for all, infrastructure for all" to support access to water, the "one village, one dam" policy to support dam rehabilitation and planting for food and jobs programmes. On a local scale, NGO's have implemented several strategies to create awareness and ensure long-term sustainability from beneficiaries, including actions like capacity building for project beneficiaries, setting up community-based Local Project Management Committee and partners, establishment of implementing committees, and training of local people to follow up the initiatives.

364. The private sector has also shown interest, Guinness Ghana Limited, as part of their water replenishment strategy, has consulted UNDP for a potential partnership to provide additional funding to support the upscaling and replication of the rehabilitation of the dams undertaken by the project.

365. The project released funds to the National Disaster Management Organization (NADMO) to build the capacities of Climate Change Adaptation Committees at regional, districts and community levels to help contribute to achieving the national climate change targets as

[48] https://drive.google.com/drive/folders/1C0SCWrNuW3OELMJXDcMZs6iSViXuzJXI?usp=sharing

enshrined in the Sendai framework, to build the capacities of Climate Change Adaptation Committees at regional, districts and community levels.

366. The Climate Change Adaptation Monitoring Committees will also continue to provide platform for a long-term and sustained process of understanding adaptation, synergies, gaps, and the required adjustments in existing interventions to ensure that they are well integrated and contribute to broader climate change and development planning and delivery at the national, regional and local levels.

367. Leadership of the project has proven to have a clear understanding of the project objectives, strategies and implementation challenges. There has been a continuous learning on how to work with the communities and a clear ability to report and adapt the strategies based on the lessons learned. Therefore, the project leadership should have the ability to respond to future institutional and governance changes.

368. PPR claims that the capacities gained by the key government institutions through the development and implementation of the plans will be maintained and further use the experience to continue the project within their respective sectors and institutions. For example, most of the key institutions such Water Resource Commission and Environmental Protection Agency, have demonstrated its commitment to eventually mainstream project activities within their day-to-day activities.

369. **Overall Quality of Implementation / Oversight and Execution:** The project's quality of implementation and execution is rated **Satisfactory (S).** The project shows a clear communication with all key stakeholders[49] involved partners. The Project Performance Reports (PPR) were well organized and comprehensive, showing candor and realism. Risk management shown in the same reports were of good quality; and there is clear follow up of the risks and mitigation strategies. The project is coordinated by a Programme Steering Committee (PSC) and consists of high-level representatives from UNDP, MESTI, EPA, and key stakeholders from government agencies. However, the TE notes the main challenging issues during implementation included the delay in the release of funds, affecting implementation of activities. Audits were carried out in the years 2017, 2018 and 2019; and in all of them there was conformity in the reviews made. Only in 2017 was a finding made with its respective recommendation, which was corrected in 2018 and its risk estimated as medium. The finding referred to a negative balance of $ 311.

370. **Gender equality and women's empowerment:** The dedicated resources for the inclusion and participation of women were necessary from the conceptualization and implementation of the livelihoods interventions and improved the ownership at the community level of the project interventions. This participation of women as active agents of climate change in decision-making, especially with regard to the type of livelihood interventions, made it possible to adopt them in certain communities, considering their particular circumstances. If the resources had not been provided means that the beneficiaries and their families would have seen their livelihoods deteriorate.

[49] Stakeholder mapping

371. To ensure that the needs and concerns of women's groups were reflected in the implementation of the project, resources were devoted to separate meetings and participation took place at a time and place convenient for marginalized groups, especially women.

372. As part of the engagement process with contractors and suppliers, an established criterion was developed to ensure that successful suppliers took into account gender and social inclusion issues in construction and in hiring local artisans in the construction of supply systems. One of the limitations was the lack of capacity to understand gender issues of community NGOs. To fill this gap, training workshops were organized for participating NGOs.

373. Women were directly involved in the entire value chain of dry season activities and other livelihood interventions such as fish farming and agricultural processing schemes. The inclusion and participation of women from the conceptualization and implementation of the livelihood's interventions improved the ownership at the community level of the project interventions. Along these lines, the boreholes were located not far from the communities so as not to endanger the safety of women in their access to water, also providing access to drinking water to more than 30,000 people, mainly women and children.

374. There was a deliberate effort to ensure that a higher percentage (60%) of the project's beneficiaries are women. This objective was achieved.

375. As part of the challenges, some NGOs showed limited capacity to include the gender variable in their projects, as well as the systematization and reporting of the indicators.

376. **Cross-cutting and UNDP Mainstreaming Issues:** The project increases the economic income of households, their access to water resources and their access to certain products that improve their food security, in both cases by generating new sources of employment and strengthening some products chains.

377. Many of these measures had positive repercussions on community natural resource management agreements, such as sustainable soil management, through agroforestry and better use of water, which has repercussions on the regeneration of these natural resources.

378. The investment made by the project through the construction of dams, dugouts and provision of irrigations systems, added to the judicious management of watersheds and the livelihoods interventions, improved food production for home consumption and market sale. And reduce the risks and vulnerabilities due to weather-induced disasters.

379. The project has also reduced the pressures on women's groups. Dry-season gardening provided women, not only with access to income sources during the dry-season, but also importantly access to more diverse sources of food and water resources in ways that do not threaten their safety.

Conclusions

380. **Conclusion 1:** Dry season farming was generally very successful with increased yield where communities received adequate training in agronomic practices and more importantly the fencing of small holder farms to avoid destruction by livestock and arson. They were very well organized, and achieved the intended and commendable outcome in all communities. These resulted in increased in productivity, income generation, increased family income and

cohesion and consequently supporting children education. These activities should be replicated on demand where land is available. As a result, the communities have developed preference for dry season farming with irrigation compared to rain-fed farming. It is controlled farming with reduced risks of flooding by intense rain and unregulated watering of crops

381. **Conclusion 2:** Notwithstanding the success of Dry Season Farming, there are series key challenges as well as potential improvement for sustainability. These include the need to minimize the drying up canals for irrigation because of relatively high proportion of dead volume of silted dams with low storage volumes, making water unavailable for irrigation purposes. There is also the need to control of pest infestation (pest resistant varieties and effective traditional herbal methods could be adopted, improved and applied There is the need for critical studies to implement dredging of the highly silted dams/dugouts to restore dam capacities and the most appropriate dead volumes that can increase climate smart water supply over the entire dry season periods. It is also necessary to, support in market access and development (motor king), and minimize the incidence of fire hazards and arson. This will require laying supply pipes below ground.

382. **Conclusion 3:** There is a low productivity of hives, about 50-60% colonization reported and there is a differential degree of colonization of bees in concrete and wooden hives. Productivity from wooden hives far exceed concrete hives which is attributed to the latter being very considered as foreign material within the bees' habitat. Operators therefore requested for the replacement of the concrete hives. Some communities missed the honey harvesting period and lost all produce to the bees. One community still depended on assistance from Wa to harvest the honey, hence as a result of the COVID-19 restrictions, harvesting support was not obtained, leading to loss of the total production and income. There is a need of intensive training of both men and women alike in honey harvesting.

383. **Conclusion 4:** Fish farming had very low success rate in most communities, however, in areas where the activity was successful, communities reported very good harvest/catch. This successful harvest has driven the need of additional cages to increase production and subsequently income and profitability. Insecurity and theft (in some communities the entire harvest was lost to theft), loss and damage of cages (due to floods and bleach of rehabilitated dams washing away the cages), as well as post harvesting losses. To mitigate some of these adverse impacts, it is noted that integrating fish smoking as preservation after sale of fresh fish in the absence of refrigeration capacity would be helpful. Attracting and mobilizing rural banks finance as well as appealing to CSR of private sector companies for additional cages would be helpful. Beneficiaries requiring support should be assisted to form cooperatives in order to meet banking requirements for fund disbursement). Adequate awareness of the local banks should be created on income generation and savings culture established by the VSLAs and profitability of the livelihood interventions. Significant savings could be invested in treasury bills and used for collateral security for maintenance of equipment and future replacement.

384. **Conclusion 5:** Land tenure constraints delayed siting of the livelihood project particularly agro-processing centers. There is the need of purchasing lands for implementation of livelihood projects to avoid the challenge of communities not honoring Community entry agreements for release of land for the livelihood project implementation. The relocations tended to be far from utilities (electricity sources and/or water sources). The additional cost

of extending utilities (the electricity and water) were not factored in the project cost estimate by the NGO partners. This has resulted in some installations without electricity, and have therefore not started operation at the time of the field evaluation. For such communities, the Municipal and District Assemblies would need to provide the utilities after the PMU/UNDP handing over of the projects to the MDAs. Increasing dissatisfaction of non-project beneficiaries, leading to tendencies of arson during the dry season period

385. **Conclusion 6:** The Field Mission Report observed there is the need of adequate survey of the project interventions (boreholes, dams and canals, bee keeping and agro-processing installations) to determine gaps, maintenance and key improvements that are required to make the project interventions sustainable after handing over to the MDAs. Contractors should, however, be made to address defects within the defect liability period even after final handing over to the MDAs and communities.

386. **Conclusion 7:** Currently, there are important and validated inputs that can be adopted at the inter-ministerial level, to improve the management and planning of the water resource at the basin level, considering the impacts of climate change. This information can be updated and escalated to other watersheds through the Regional, District and Community-based Climate Change Adaptation Monitoring Committees that were established.

387. **Conclusion 8:** Although this indicator was not reached in time and data was not available on the representation of women, the 4 sub-basin plans were made up of more than 50 communities, taking into account the vulnerability and impacts of climate change on sectors and key communities that depend on it as its main source of water. This provides the opportunity to incorporate climate change into local water resource management planning; however, given that the level of female participation is unknown, it is important to recognize that the impacts and vulnerabilities associated with this population could be underestimated.

388. **Conclusion 9:** The construction of 100 operational boreholes, benefitting at least 30,000 people (60% of whom should be women) was far exceeded and the communities have started making monthly financial contributions towards their repairs and maintenance without relying on central government support, demonstrating that this kind of activities can increase community self-management and thus its resilience.

389. **Conclusion 10:** The construction of 50 dams / dugouts for rainwater harvesting and water storage systems were not successful, the construction calculations were poorly done and there was no quality monitoring and follow-up, representing the weakest point of this project.

Lessons Learned

390. The Terminal Evaluation highlighted the following lessons learned which when addressed will enable replicability or scaling up this project; and will improve future implementation process and sustainable management. These include:

391. **Lesson 1.** Women and youth are particularly vulnerable and at risks to adverse effects of climate change impacts because of their peculiar circumstances in the communities. Climate smart water supply systems (dams, dugouts, functional boreholes) can effectively support

productive small holder farming and reduce migration to other population centers where integrated and sustained under the government's policy of planting for food and jobs. The rice farmers in Upper East testified to this positive outcome of the AF project.

392. **Lesson 2:** CHACHE Shea nut small-scale processing plant (coordinated by Pure Trust) demonstrates that shea butter production has potential of growth from micro-scale enterprises (MSEs) to small and medium scale enterprises (SMEs) and increasing income generation at the community level, because of market access and supply demand for shea butter by private sector (local and oversea markets).Women received training from the NGOs, and have diversified into soap making as value addition to shea butter production chain. The project has the opportunity to be integrated in the government's flagship IDIF job creation programme.

393. **Lesson 3:** Local by-laws and rules by traditional authorities are enforceable for Shea tree crop conservation and protection for expansion and profitable shea nut processing and butter production. Chache Shea butter processing plant has assured supply of shea nut as the main raw material. This is because the traditional chief of Cache has instituted a local conservation rules banning the cutting of shea trees as economic trees, and has instituted an enforcement regime throughout the community. The compliance to the traditional rules is assessed as very successful; and providing the needed raw material for the Chache shea butter production. This conservation measure could be promoted in all the shea nut processing communities for sustainability of the climate smart livelihood intervention.

394. **Lesson 4 Community entry agreements for release of** parcels of land, for the livelihood project implementation were not honoured by some communities, including the Project Coordinator's own village community. Land tenure constraints made replacement difficult and delayed siting of the livelihood project particularly agro-processing centers. There is the need of purchase of lands for implementation of such livelihood projects to avoid potential delays. The relocations were far from utilities (electricity sources and/or water sources). The additional cost of the extending the electricity and water were not factored in the project cost estimate by the NGO partners. These installations are still without electricity and have not started operation at the time of the field evaluation. For such communities, the Municipal and District Assemblies would need to provide the utilities after the PMU/UNDP handing over of the projects to the MDAs. Increasing dissatisfaction of non-project beneficiaries, leading to tendencies of arson during the dry season period

395. **Lesson 5:** In communities with functional boreholes for potable water and rehabilitated dugouts/dams with active canals for irrigation, dry season farming is well supported and profitable. Though communities increased their acreage for farming, and productivity increased, marketing of produce became a challenge due to lack of transportation to market centers. Communities wished local transportation (motor king) were included in the facilities provided by the project to the youth as part of the value chain.

396. **Lesson 6:** With exception of few instances of dry season farming NGOs in the communities, most of the project implementors of the intervention were located far from the community and did not have good communication channels for active interactions with beneficiaries. This highlights the question of effectiveness of contractors compared with services provided by to district-and regional level institutions such as CWSA, GIDA, MOFA Extension Services, Forestry Commission, Game and Wild Life.

397. **Lesson 7:** Complete burning of water hoses and surface pipe conduits and the farm was observed in one community. This was attributed to the dissatisfied non-beneficiaries who want the demonstration projects to be replicated on their lands adjacent to the project farms. This brings the need of sensitizing communities that the project was an adaptation fund demonstration that could potentially be scaled up as a result of the project success and its linkages to the government's flagship programme of Planting for Food and Jobs (PFJs).

398. **Lesson 8:** The development of the project (2011-2016) and implementation period (2016-2020) was subject to three political cycles (2012, 2016, and 2020). As a result, there were political interreference with respect to which government in power did initiate the project; and which implemented; and which takes the glory of the project results for electoral votes in a political economy. This led to some degree of interference by the Assemblymen in the completion of the projects in 2020 regardless of benefits to their communities. Political cycles need critical adaptative management measures to minimize impacts on community-based projects.

399. **Lesson 9:** Periodic flooding resulting from the spillage of excess water from the Bagre Dam in Burkina Faso continue to be a threat to climate change adaptation projects in the project districts particularly communities along the White Volta in the Bawku West District in the Upper East Region. Between 5th August 2020 and Monday 10th August 2020, the rehabilitated dams project in communities including Lamboya, Tampion breached as a result of been hit by the flooding resulting from the spillage of the two dams in Burkina Faso (Bagre dam and Kompienga dams). Farms planted with crops like millet and sorghum got inundated[50]. The threat of the floods does pose considerable challenge to the sustainability of the livelihood projects in those flood-prone districts.

400. **Lesson 10:** The success of the Chache community and others can be shared and promoted in other districts populations, at bank level and even at CSR level of private sector, to attract and mobilize support and their active participation in the production and processing value chain, which would increase the possibilities to increase profitability and move beyond the level of MSSE and MSE to SME. This specially applies regarding to Shea production and processing, agro-processing and fish farming.

Recommendations

401. The TE has identified the next recommendations:

Table 15: Recommendations Table

Rec #	TE Recommendation	Entity Responsible	Time frame

[50] https://www.graphic.com.gh/news/general-news/bagre-dam-spillage-farms-underwater-in-bawku.html;
https://www.wanep.org/wanep/files/2020/Sep/GHANA_Quick_Update_on_Bagre_Dam_Spilage.pdf
http://www.nadmo.gov.gh/index.php/12-nadmo-articles/68-press-release-spillage-of-the-bagre-dam-and-nadmo-s-response-operation-thunderbolt-2020

A	Category 1: Monitoring and Evaluation of Impacts		
A.1	- **Strengthening of local and institutional capacities for monitoring and maintenance of boreholes:** It is recommended to sign - Sign a Letter of Agreement with the district assemblies (in particular the Community Water and Sanitation Agency) to continue capacity building of the caretakers for all the boreholes constructed to enable a better monitoring and maintenance. The support should include: o Training of technician per village or group of neighboring villages. o Capacities to support the creation of a social business dedicated to providing a maintenance service. Given the number of boreholes, a fine-tuned business plan can be profitable. Such activity can be implemented by existing companies (agro-inputs providers for example).	MESTI/EPA/UNDP/ DA/CSWA	March 2021-March 2022
A.2	**Undertake evaluation of the project's impacts after it has been handed over to communities**: Evaluate the level of impacts of installation, operation and maintenance of boreholes, which were recently constructed, as well as the impact of fish farming, dry season gardening and some agro-processing activities, including the "household economic approach" as part of the development of an econometric monitoring of a sample of households, and an evaluation to measure the replicability and scale up of the project in the North Region. The objective of this is to demonstrate the reduction of vulnerability and increase of income at project and regional level and their potentialities.	MESTI/UNDP	March 2022
B	Category 2: Finances		
B.1	**Implement the final financial audit:** According to the agreement between AF and UNDP a final audited financial statement must be prepared by an independent auditor to be submitted within 6 months of the end of the implementing entity financial year. Considering the financial findings described before, the audit becomes of great importance to clarify the use of the funds and the actual project expenditure.	MESTI/UNDP/GIDA/MDAs	March 2021
C	Category 3: Livelihood Demonstration Projects		
C.1	**Complete the construction of the 5 pending dams and evaluate state of the dams and boreholes before closure of project implementation:** To measure the state of functional operation of dugouts/dams' systems, it is recommended that a survey be conducted, which should include:	MESTI/GIDA/MDA /CWSAs	March 2021

	- The quality of the rehabilitation of the dams achieved (noting the failures and losses recorded after rehabilitation); - The actual dam storage capacities restored relative to the design capacities to allow for dry season farming throughout the dry season period; - The extent of the dam storage capacities restored over and above the dam dead volume, which is regulated to meet the demand competing ecosystem and multiple use needs (livestock, aquatic life). - The drying up canals for irrigation due to control of Dead Volume of Dams. - The control of the pest impacts (for example: pest resistant varieties and effective traditional herbal methods).		

6 ANNEXES

Annex 6.1: TE ToR

Terminal Evaluation Terms of Reference (ToR) Template for UNDP-supported GEF-financed projects

Template 1 - formatted for attachment to the UNDP Procurement website

1. INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full- and medium-sized UNDP-supported GEF-financed projects are required to undergo a Terminal Evaluation (TE) at the end of the project. This Terms of Reference (ToR) sets out the expectations for the TE of the *full-sized* project titled ***Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods (PIMS 4952)*** implemented through the *Ministry of Environment, Science, Technology and Innovation*. The project started on the *23 March 2016* and is in its *5th* year of implementation. The TE process must follow the guidance outlined in the document 'Guidance for Conducting Terminal Evaluations of UNDP Supported, GEF-Financed Projects' (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEFfinancedProjects.pdf

2. PROJECT BACKGROUND AND CONTEXT

The Government of Ghana (GoG), with funding from the Adaptation Fund Board Secretariat is implementing a four-year project dubbed "Increased resilience to climate change in northern Ghana through the management of water resources and diversification of livelihoods".
The project aims at addressing climate change-induced decreases in the availability and increasing unpredictability of water resources, and the associated negative impacts of these trends on the livelihoods of rural communities. It is expected to enhance the resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in Northern Ghana.

The objective of the project is expected to be achieved through key results centered on the improvement of water access and increase institutional capacity as well as coordination for integrated water management to support other uses of water resources especially for the diversification of livelihoods by rural communities. This will be done so by delivering the following three complementary outcomes:

- Outcome 1: Improved planning and management of water resources taking into account climate change impacts on surface and groundwater sources
- Outcome 2: Climate resilient management of water resources by communities in Northern Ghana
- Outcome 3: Enhanced diversification of livelihoods of communities in northern Ghana

The project is being executed by the Ministry of Environment, Science, Technology and Innovation (MESTI) of Ghana in partnership with the United Nations Development Programme (UNDP), with close cooperation with sectoral ministries and agencies, NGOs and the private sector. The project has been under implementation since May 2016 in selected districts and communities in the three (3) Northern regions of Ghana.

The Project target locations are in the Northern, Savannah, Upper East and West Regions of Ghana and is expected to directly benefit 60,000 as well as indirectly benefit over 8 million Ghanaians living along the Volta River Basin. In all ten (10) District Assemblies and a total of fifty (50) selected communities are benefitting directly from the project. The target project areas were selected based on an assessment of district vulnerability.

3. TE PURPOSE

The TE report will assess the achievement of project results against what was expected to be achieved and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The TE report promotes accountability and transparency and assesses the extent of project accomplishments. The project has over the past years since 2016 built partnerships among climate change key sectors/stakeholders at the national level and at the sub-national levels in Ghana. Recommendations from TE will therefore be useful in sustaining the various results and interventions undertaken under this project.

4. TE APPROACH & METHODOLOGY

The TE report must provide evidence-based information that is credible, reliable and useful.

The TE team will review all relevant sources of information including documents prepared during the preparation phase (i.e., PIF, UNDP Initiation Plan, UNDP Social and Environmental Screening Procedure/SESP) the Project Document, project reports including annual PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based evaluation. The TE team will review the baseline and midterm GEF focal area Core Indicators/Tracking Tools submitted to the GEF at the CEO endorsement and midterm stages and the terminal Core Indicators/Tracking Tools that must be completed before the TE field mission begins.

The TE team is expected to follow a participatory and consultative approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), Implementing Partners, the UNDP Country Office(s), the Regional Technical Advisor, direct male and female beneficiaries and other stakeholders.

Engagement of stakeholders is vital to a successful TE. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders.; executing agencies, senior officials and task team/component leaders, key experts and consultants in the subject area, Project Board, project beneficiaries, academia, local government and CSOs, etc. Due to COVID -19 and its resultant border closure and safety protocols, the TE will explore the use of virtual platforms for stakeholder meetings and interviews. Additionally, the TE team is expected to conduct field missions to Northern Savannah regions of Ghana including the following project sites: Savelugu, Bole, Zabzagu, Bawku, Builsa, Bawku West, Nandom, Sissala *East, Nadowli and Bongo districts.*

The specific design and methodology for the TE should emerge from consultations between the TE team and the above-mentioned parties regarding what is appropriate and feasible for meeting the TE purpose and objectives and answering the evaluation questions, given limitations of budget, time and data. The TE team must use Human rights and gender-responsive methodologies and tools to ensure that gender equality and women's empowerment, as well as other cross-cutting issues and SDGs are incorporated into the TE report.
The final methodological approach including interview schedule, field visits and data to be used in the evaluation must be clearly outlined in the TE Inception Report and be fully discussed and agreed between UNDP, stakeholders and the TE team.

The final report must describe the full TE approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the evaluation.

5. DETAILED SCOPE OF THE TE
The TE will assess project performance against expectations set out in the project's Logical Framework/Results Framework (see ToR Annex A). The TE will assess results according to the criteria outlined in the Guidance for TEs of UNDP-supported GEF-financed Projects (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEFfinancedProjects.pdf). The TE is expected to be undertaken in 30 days within the period September to October 2020. It shall cover issues related to the various components of the project mentioned in paragraph 2 above.

The Findings section of the TE report will cover the topics listed below. A full outline of the TE report's content is provided in ToR Annex C.

The asterisk "(*)" indicates criteria for which a rating is required.

Findings

i. Project Design/Formulation

- National priorities and country driven-ness
- Theory of Change
- Gender equality and women's empowerment
- Social and Environmental Standards (Safeguards)
- Analysis of Results Framework: project logic and strategy, indicators
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design

- Planned stakeholder participation
- Linkages between project and other interventions within the sector
- Management arrangements

ii. Project Implementation

- Adaptive management (changes to the project design and project outputs during implementation)
- Actual stakeholder participation and partnership arrangements
- Project Finance and Co-finance
- Monitoring & Evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)
- Implementing Agency (UNDP) (*) and Executing Agency (*), overall project oversight/implementation and execution (*)
- Risk Management, including Social and Environmental Standards (Safeguards) Any impact from COVID-19

iii. Project Results

- Assess the achievement of outcomes against indicators by reporting on the level of progress for each objective and outcome indicator at the time of the TE and noting final achievements
- Relevance (*), Effectiveness (*), Efficiency (*) and overall project outcome (*)
- Sustainability: financial (*) , socio-political (*), institutional framework and governance (*), environmental (*), overall likelihood of sustainability (*)
- Country ownership
- Gender equality and women's empowerment
- Cross-cutting issues (poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant)
- GEF Additionality
- Catalytic Role / Replication Effect
- Progress to impact
- Any impact from COVID-19

iv. Main Findings, Conclusions, Recommendations and Lessons Learned

- The TE team will include a summary of the main findings of the TE report. Findings should be presented as statements of fact that are based on analysis of the data.
- The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. They should highlight the strengths, weaknesses and results of the project, respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women's empowerment.
- Recommendations should provide concrete, practical, feasible and targeted recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.
- The TE report should also include lessons that can be taken from the evaluation, including best practices in addressing issues relating to relevance, performance and success that can provide knowledge gained from the particular circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are applicable to other GEF and UNDP interventions. When possible, the TE team should include examples of good practices in project design and implementation.
- It is important for the conclusions, recommendations and lessons learned of the TE report to incorporate gender equality and empowerment of women.

The TE report will include an Evaluation Ratings Table, as shown below:

ToR Table 2: Evaluation Ratings Table for *(Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods)*

Monitoring & Evaluation (M&E)	Rating[1]
M&E design at entry	
M&E Plan Implementation	
Overall Quality of M&E	
Implementation & Execution	**Rating**
Quality of UNDP Implementation/Oversight	
Quality of Implementing Partner Execution	
Overall quality of Implementation/Execution	
Assessment of Outcomes	**Rating**
Relevance	
Effectiveness	
Efficiency	
Overall Project Outcome Rating	
Sustainability	**Rating**
Financial resources	
Socio-political/economic	
Institutional framework and governance	
Environmental	
Overall Likelihood of Sustainability	

7. TE DELIVERABLES

#	Deliverable	Description	Timing	Responsibilities
1	TE Inception Report	TE team clarifies objectives, methodology and timing of the TE	No later than 2 weeks before the TE mission: *(By 1st October*	TE team submits Inception Report to Commissioning Unit and project management
2	Presentation	Initial Findings	End of TE mission: by 15th October*)*	TE team presents to Commissioning Unit and project management
3	Draft TE Report	Full draft report *(using guidelines on report content in ToR Annex C)* with annexes	Within 3 weeks of end of TE mission: *30th October)*	TE team submits to Commissioning Unit; reviewed by RTA, Project Coordinating Unit, GEF OFP
5	Final TE Report* + Audit Trail	Revised final report and TE Audit trail in which the TE details how all received comments have (and have not) been addressed in the final TE report *(See template in ToR Annex H)*	Within 1 week of receiving comments on draft report: *(by 2nd November)*	TE team submits both documents to the Commissioning Unit

*All final TE reports will be quality assessed by the UNDP Independent Evaluation Office (IEO). Details of the IEO's quality assessment of decentralized evaluations can be found in Section 6 of the UNDP Evaluation Guidelines.[51]

8. TE ARRANGEMENTS

The principal responsibility for managing the TE resides with the UNDP Ghana Office. The UNDP Ghana Office will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the TE team. The Project Team will be responsible for liaising with the TE team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

9. TE TEAM COMPOSITION

The evaluation shall be carried out by a team of external (1) and local (1) consultants. The International Consultant, the team leader, will work closely with the National Consultant. The consultants shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The National Consultant will support the International Consultant who will have the overall responsibility for the conduct of the evaluation exercise as well as quality and timely submission of reports (inception, draft, final etc.). The International Consultant will be accountable to UNDP for the delivery results on this assignment. The evaluator(s) cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have conducted this project's Mid-Term Review and should not have a conflict of interest with the project's related activities.

10. EVALUATOR ETHICS

The TE team will be held to the highest ethical standards and is required to sign a code of conduct upon acceptance of the assignment. This evaluation will be conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluation'. The evaluator must safeguard the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The evaluator must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

[51] Access at: http://web.undp.org/evaluation/guideline/section-6.shtml

Annex 6.2: TE mission itinerary and summary of field visits

Team Upper East and Northern

Date	District	Communities Visited
Team travelled on Nov 4 from Accra to Tamale by air		
Team worked on Nov 5 and Nov 6 in Savelugu-Nanton, Northern Region		
Thursday 5 Nov, 2020 Friday, Nov 6, 2020	Savelugu-Nanton Savelugu-Nanton	▪ Libga community ▪ Zaazi community
Team travelled on Nov 6 from Savelugu-Nanton (Tamale) to Zabzugu		
Saturday, November 7, 2020	Zabzugu	▪ Sabare I ▪ Sabare II ▪ Mognegu I ▪ Mognegu II
Team travelled on Sunday, Nov 8 from Zabzugu to Bawku Municipal		
Monday, November 9, 2020	Bawku Municipal	▪ Tambalugu community ▪ Kuka-Natinga community ▪ Kpaliwega community
Team stayed in Bawku Municipal; travelled and worked in Bawku West on 10 and 11 November		
Tuesday 10 Nov 2020 Wednesday, November 11, 2020	Bawku West Bawku West	▪ Tilli ▪ Lamboya ▪ Timonde
Team travelled on Thursday, Nov 12 from Bawku Municipal to Bolga (to work in Bongo)		
Friday, November 13, 2020	Bongo	▪ Adaboya ▪ Yidongo ▪ Gorigo-Aliba
Team travelled on Monday, Nov 16 from Bolga to Builsa South		
Monday, November 16, 2020	Builsa South	▪ Gbedembilisi ▪ Kanjarga- Nyandema ▪ Wiesi

Team travelled on Tuesday, Nov 17 from Bolga (Builsa South) to Tamale
Team Returned to Accra on Wednesday, Nov 18 by air

Team Upper West and Savana

Date	District	Communities Visited
Team travelled on Nov 4 from Accra to Tamale by air		
Team worked on Nov 5 and Nov 6 in Savelugu-Nanton, Northern Region		
Thursday 5 Nov, 2020 Friday, Nov 6, 2020	Savelugu-Nanton Savelugu-Nanton	▪ Libga community ▪ Tampion community
Team travelled on Nov 6 to Bole		
Saturday, November 7, 2020	Bole	▪ Sornyoh ▪ Kiape ▪ Chache
Team travelled on Sunday, Nov 8 from Bole to Nandom		
Monday, November 9, 2020	Nadowli	▪ Jang ▪ Goli ▪ Takpo
Team stayed in Nandom (to work in Nandom)		
Tuesday, November 10, 2020	Nandom	▪ Gengenkpe ▪ Ko-Bukuom ▪ Nabughan
Team travelled on Tuesday, Nov 10 from Nandom to Sisala East		
Wednesday, November 11, 2020	Sisala East	▪ Tumu ▪ Tarsaw ▪ Walembele
(a) Team travelled on Wednesday, Nov 11 from Sisala East to Wa (evaluation progress monitoring; team meeting and data consolidation). (b) Team travelled to Tamale on Friday		
Monday, November 16, 2020	Bolgatanga	▪ GIDA
Tuesday, November 17, 2020	Tamale	▪ CWSA
Team travelled on Wednesday, Nov 18 to Accra by Air		

Annex 6.3: List of persons interviewed

No.	Date of Interview	NAME	Institution	Position/Role	Phone number
1	November 5, 2020	Mr. Baako Mumuni Abdulai	Department of Agriculture, Savelugu & Nanton Districts	District Director of Agriculture	024 314 4234
2	November 6, 2020	Mr. Eden Nassan	Adaptation Committee	Adaptation Committee Secretary,	024 622 3712
3	November, 6, 2020	Hon. Inusah	Adaptation Committee	Assembly man	0244466999
4	November 7, 2020	Mr. Seidu	Arocha (NGO)	Representative	0202774869
5	November 7, 2020	Mr. Enouch Ngeeri	Grameen Ghana (NGO)	Programs Officer	024 112 9599
6	November 7, 2020	Mr. Joseph Doodoi	Sabare Electoral Area	Assembly man	024 837 9301
7	November 7, 2020	Madam Gloria Quarshie	Sabare II community member	Non-beneficiary	054 332 3738
8	November 7, 2020	Mr. Mohammed Hamidu Alhassan	Songtaba (NGO)	Senior Programs Director	024 420 3791
9	November 7, 2020	Madam Grace Ayijunu	Dev't Frontiers (NGO)	Acting Director	024 459 8828/ 020 646 3114
10	November 7, 2020	Mr. Gyimah	EPA, Bole	M&E officer / representative	0501301600
11	November 7, 2020	Mr. Abdulah	Pure Trust	Representative	N/A
12	November 9, 2020	Mr. Akubela Haruna Suleimana	Department of Agriculture, Bawku Municipal	AEA	024 604 2080
13	November 9, 2020	Mr. Isaac Tiiga	Presby Community Based Rehabilitation programme	CBR Coordinator, Garu Community	0249743792
14	November 9, 2020	Miss Akubiri Naomi	Department of Agriculture, Bawku Municipal	AEA	024 148 2506
15	November 9, 2020	Mr. Fabian	EPA	M&E officer / representative	0246484579
16	November 9, 2020	Hon. Esther	Community Adaptation Committee	Assembly woman	0554053349
17	November 10, 2020	Mr. Francis Andoh	District Assembly	District Planning Officer	0242876469
18	November 10, 2020	Hon. John Akukugiri	Tilli Electoral Area, Bawku West District	Assembly man	024 615 1054

19	November 10, 2020	Mr. Charles Akotia	Department of Agriculture, Bawku Municipal	Municipal Director of Agriculture	054 220 6413
20	November 10, 2020	Mr. Akumbuli Emmanuel Awumbi	Department of Agriculture, Bawku West District	AEA	054 167 5998
21	November 11, 2020	Hon. Asaba Williams	Lamboya Electoral Area, Bawku West District	Assembly man	024 364 7549
22	November 11, 2020	Mr. Salifu Wahabu	EPA	M&E officer / representative	0243565394
33	November 11, 2020	Mr. Rasheed Zakaria Abdul	EPA	M&E officer / representative	N/A
24	November 13, 2020	Hon. Atabba Philemon Atia	Sontamoliga Electoral Area, Bongo District	Assembly man	024 992 5402
25	November 13, 2020	Mr. Karayeri Anane	Department of Agriculture, Bongo District	AEA	024 901 3911
26	November 13, 2020	Mr. Samson Asusiyine Abeere	Department of Agriculture, Bongo District	District Agricultural Development Officer, Agricultural Engineering	024 977 9359
27	November 16, 2019	Mr. Asher Nkegbe	EPA, Bolga	Regional Director	0501301389
28	November 16, 2020	Mr. Abdulai Amadu	Department of Agriculture, Builsa South District	AEA	020 199 6622
29	November 16, 2020	Mr. Gaspard Doodaa	Ghana Irrugation Development Authority (GIDA), Bolga		0243336716
30	November 17, 2020	Mr. Gilbert Amoah Ayamgah	CWSA, Tamale	Regional Director,	0204299892
31	December 3, 2019	Mr. Isaac Jones Fiagbe	Ministry of Environment, Science, Technology and Innovation (MESTI)	M&E and Project Finance & Procurement Officer	0244411856
32	December 5, 2020	Mr. Peter Justice Dery	Ministry of Environment, Science, Technology and Innov ation (MESTI)	Project Director, Project Management Unit	0243646749
33	December 30, 2020	Stephen Kansuk	Programme Analyst, UNDP Country Office (CO)	UNDP Rep, Project Management Unit (PMU)	0204751972

Annex 6.4: List of documents provided and reviewed

- Board Minutes
  - 2016.pdf
  - 2017.pdf
  - 2018.pdf
  - 2019.pdf
  - Report on inaugural meeting of AF PSC.pdf
  - Steering Committee meeting_Publication.pdf
- Contracts
  - Contracts
    - Climate SMART Management and Investment plans engagement of Consultant_Evaluation.docx
    - Climate Variability engagement of Consultant_Evaluation.docx
    - Contract 02_Water Research Institute _Generate a...ture Climate Change Projections for the basin.docx
    - Contract 03_Paul Kwame.docx
    - Contract 04_Water Research Institute _Conduct Tr...e impact of Climate Variability of the Basin (1).docx
    - Contract 04_Water Research Institute _Conduct Tr...f the impact of Climate Variability of the Basin.docx
    - Contract 05_Sal Consult_Develop DistrictSub_catchment Basin Climate Resilient Plans.docx
    - Contract 06_Geohydronomics Ltd_Develop water...t and investment plans 4 Black Volta _ Oti Rev1.docx
    - CONTRACT FOR ABOWTA AND SONS COMPANY LIMITED.pdf
    - CONTRACT FOR JOISSAM GHANA LIMITED.pdf
    - District sub catchment basin management plans engagement of Consultant_Evaluation.docx
    - Entity Tender Committee Report.PDF
    - Existing Water Management Activities and Conduct Vulnerability Analyses.doc
    - Group6 Company Limited.pdf
    - Historic Trends _ Future Projection Consultant_Evaluation.docx
    - Implementation manuel engagement of Consultant_Evaluation.docx
    - Report on Inception workshop with consultants.docx
    - Service contract PROF CHARLES QUANSAH.pdf
    - Service contract WATER RESEARCH INSTITUTE.pdf
    - TOTAL CONTRACT SUM.docx
    - WATERSITE CONTTRACT.pdf
- CPD
  - CPD 2012-2016.pdf
  - CPD Ghana 2018-2022 - final version.docx
- Endorsement Letters
  - Change of DNA_Jan 2015.pdf
  - CO endorsement letter.pdf
  - Ghana AF Proposal_LoE and Notification of DNA Change_12 March 2013.pdf
  - Ghana notification about AFB24-25.11 decision.pdf
  - GIDA dams procurement approval_MESTI letter.pdf
  - Letter for ProJdoc signature.pdf
  - Letter of confirmation.pdf
  - MESTI Letter_Aug2015.pdf
  - MESTI LETTER_JAN 2016_RECRUITMENT.pdf
  - MESTI Letter_Sept 9 2015.pdf
  - MESTI Letter_Sept2015.pdf
  - New Endorsement Letter_Jan 2015.pdf
  - PIMS 4952 Ghana DOA March 8 16.pdf
  - Scan_GIDA letter.pdf
  - Signed AF_UNDP Agreement for Ghana_PIMS 4952 (1).zip
- Field and Workshop reports
  - BLACK VOLTA _setting up of basin Board.pdf
  - BOLGA-ENVIRONMENTAL PROTECTION AGENCY.docx
  - Brief Report on Adaptation Fund project Mission to Northern Ghana_Dr Obeng.docx
  - BTOR_6-11 March 2020.docx
  - BTOR_2016_Inception Meeting.doc
  - BTOR_201506 North AF.doc
  - BTOR_METAL SIGN POST INSPECTION_BOLGA_IF.doc
  - BTOR_Review Meeting_19-27 January 2019.docx

- BTOR_SEA Workshop at Wa.pdf
- BTOR_Tamale_Bolgatanga 11-14.10.16.docx
- Complimentary Activities_Adaptation Fund_kansuk.docx
- Ecological Monitoring _Oti Basin.pdf
- Ecological Monitorinh_Black Volta.pdf
- Establishment of Oti Basin Board.pdf
- GIDA Report - INVENTORY OF DAMS _DUGOUTS_Feb 2018.docx
- Inception Report_Upper East.docx
- Mapping of Livelihood NGOs for EPA Reg Dir_22062018.docx
- Minutes of LPAC Meeting_no.docx
- Monitoring Report by EPA Bolga in AF Communities_REV.docx
- REPORT ON 2nd QTR REPORTS REVIEW OF NGOs.docx
- Report on Community entry and media outreach_120717.docx
- Report on Monitoring of Boreholes in the Bawku Municipal_23Jan2017.docx
- REPORT ON NORTHERN REGIONAL DISTRICT STAKEHOLDER INCEPTION MEETINGS.docx
- REPORT ON NORTHERN, UPPER EAST AND WEST...EGIONAL STAKEHOLDER INCEPTION MEETINGS.docx
- Report on Regional and District Adaptation Committee Training_26October2016_sk.docx
- REPORT ON UPPER EAST REGIONAL DISTRICT STAKEHOLDER INCEPTION MEETING.docx
- REPORT ON UPPER WEST REGIONAL DISTRICT STAKEHOLDER INCEPTION MEETINGS.docx
- SEA report _Black Volta Basin IWRM Development.pdf
- SEA Report_Oti Workshop.pdf
- Stakeholder Workshop Report.doc
- YEAR ONE REPORT.docx
- Inception and LPAC
  - BTOR_2016_Inception Meeting.doc
  - Inception Report_Adaptation Fund project.pdf
  - LPAC Invitation Letter.pdf
  - Minutes of LPAC Meeting.docx
  - Participants signup list.pdf
- Key deliverables
  - BLACK VOLTA _setting up of basin Board.pdf
  - BlackVoltaBasin_Management Plan_Final.pdf
  - CSIR-WRI_Consultancy_Report-Generate and Analy...d future climate change projections_DRAFT (4).docx
  - Draft_Management_Plan_BlackVolta_Basin (1).docx
  - Ecological Monitoring _Oti Basin.pdf
  - Ecological Monitorinh_Black Volta.pdf
  - Final_Draft_Management_Plan_Oti.pdf
  - Final_Management_Plan_Oti.pdf
  - Revised Baseline_Vulnerability analysis report.docx
  - Revised report_AF Baseline Water Mgt.docx
  - SEA report _Black Volta Basin IWRM Development.pdf
  - SEA Report_Oti Workshop.pdf
  - Social and Environmental Screening Report.pdf
- M_E
  - AF Project_M_E Plan for Livelihood NGOs_10062018.docx
  - Baseline Survey Template for NGOs_18062018 updated.docx
  - Composite Baseline Values of Indicators for Performance Tracking.docx
  - M_E
    - Adaptation Fund Project ME Strategy_Plan_draft (003).docx
    - logFRAME.xlsx
  - Mapping of Livelihood Activities + Interventions _23082018.docx
- Midterm Evaluation reports
  - AF Project MTE Report_2019.04.01 _UNDP (003) CLEAN.docx
  - Evaluation report.pdf
  - MANAGEMENT RESPONSE_Midterm AF.docx
- Minutes
  - Case ASTEE.pdf
  - Case GROUP 6 LIMITED.pdf
  - Entity Tender Committee Report.PDF

- M-001 Minutes of Meeting with Stakeholders at Lamboya.doc
- M-005 Minutes of Meeting with UNDP, GIDA, Contractors.doc
- MEETING WITH ADAPTATION FUND PMU.pdf
- Meeting with WRC _ UNDP_ 6.4.2017.docx
- MINUTES 18 2 19.docx
- Minutes Case Epsilon TC Ltd.pdf
- Minutes Case Memphis.pdf
- Minutes Case OMEGA CONST. LIMITED.pdf
- Programme Visit _28 May 2019_GIDA.pdf
- Report on Review of NGOs for AFP Livelihood Activities_23052018.docx
- PPR
  - Inputs to ROAR
    - AF - 2018 Annual Report.docx
    - AF project 2019 Annual-SDC.docx
    - SDC 2017 Annual Report_AF.docx
    - SDC Annual Review_Adaptation Fund Project_25Nov2016.docx
    - YEAR ONE REPORT.docx
  - Multi-Year Workplan for AF_signed.pdf
  - PPR 1.xls
  - PPR 2.xls
  - PPR 3.xls
- Project document
  - Multi-Year Workplan for AF_signed.pdf
  - Project Document.pdf
  - Signature page of AF Project_Doc.pdf
- Project Expenditures
  - 2016 -CDR.PDF
  - 2017 -CDR.PDF
  - 2018 -CDR.PDF
  - 2019 -CDR.PDF
  - 2020 cdr- uncerfified.PDF
  - AF project expenditures- 2016-2020.xlsx
- Reports from NGOs
  - All Reviewed Documents
    - G1 A
      - Group 1 A Review Reports_Mawuli
        - Akandem Farms_review.docx
        - Auxano_review.docx
        - Basic Needs_review.docx
        - NORTHCODE_review.docx
        - OPEN GHANA_review.docx
        - READI_review.docx
        - Review ratings.xlsx
        - urbanet_review_LM.docx
        - WaCEP_review.docx
      - Group 1_Review Comment_Observation.xlsx
      - JAFARU EPA
        - 0PEN GHANA REVIEWD.docx
        - AKANDEM REVIEWED.docx
        - AUXANO FOREVER.docx
        - BASIC NEED REVIEWED.docx
        - NGO Report Review Tool for 3rd Quarter_ to be discussed (2).docx
        - NGO Report Review Tool for 3rd Quarter_ to be discussed.docx
        - NORTH CODE REVIEWED.docx
        - READ.docx
        - URBANET GHANA REVIEWED.docx
        - WOMEN AND CHILDREN.docx


G1 B
Freda
Arocha NGO Report Review Tool for 3rd Quarter.docx
Bilfacu NGO Report Review Tool for 3rd Quarter.docx
Binaba Women Farmers NGO Report Review Tool for 3rd Quarter.docx
CIBRI NGO Report Review Tool for 3rd Quarter.docx
LINK Ghana, NGO Report Review Tool for 3rd Quarter.docx
NGO Report Review Tool for 3rd Quarter_ to be discussed.docx
Nothfin Foundation NGO Report Review Tool for 3rd Quarter.docx
SUMMARY OF NGO REPORT REVIEW.docx
Wilphin Foundation NGO review Tool for 3rd quarter.docx
SUMMARY OF NGO REPORT REVIEW.docx
Wahab
Arocha NGO Report Review Tool for 3rd Quarter.docx
Bilfacu NGO Report Review Tool for 3rd Quarter.docx
Binaba Women Farmers NGO Report Review Tool for 3rd Quarter.docx
CIBRI NGO Report Review Tool for 3rd Quarter.docx
LINK Ghana, NGO Report Review Tool for 3rd Quarter.docx
NGO Report Review Tool for 3rd Quarter_ to be discussed.docx
Nothfin Foundation NGO Report Review Tool for 3rd Quarter.docx
SUMMARY OF NGO REPORT REVIEW.docx
Wilphin Foundation NGO review Tool for 3rd quarter.docx
G2 A
Group 2 A
Coalition for change-Emmanuel Lignule
NGO Report Review Tool updated for 3rd Quarter.docx
PROPOSAL
Coalition for Change MoA.pdf
Revised Proposal - AFP - Coalition for Change.doc
Quarterly Report Template_3rd Qtr_C4Cfinal.docx
Friends of Rural Growth Ghana-Emmanuel Lignule
Copy of FORG Ghana Quarter3-FinanceReport.xlsx
Copy of FORG_CONSOLIDATED FINANCIAL REPORT-AF PROJECT_Q1-Q3 (002).xlsx
FORG Ghana Quarter 3-Activity Report.doc
NGO Report Review Tool updated for 3rd Quarter.docx
PROPOSAL
Concept Note_FORG UWR-FORG.docx
Friends of Rural Growth (FORG) MoA.pdf
Reviewed Proposal_Friends of Rural Growth.docx
Grameen-Emmanuel Lignule
Copy of ADAPTATION PROJECT FIN REPORT Q3.xlsx
Copy of CONSOLIDATED FINANCIAL REPORT -AF Q1-Q3.xlsx
GG ADF Quarter 3 Report- June 2019.pdf
Grameen Ghana NGOs Report Summary of Key achivements_2 pages.pdf
NGO Report Review Tool updated for 3rd Quarter.docx
PROPOSAL
Concept Notes - Grameen Ghana.docx
GRAMEEN Ghana.pdf
Revised Proposal - Grameen Ghana.pdf
Group 2 A.docx
Jimah_REVIEWED
Grameen
NGO Report Review Tool updated for 3rd Quarter.docx
Meta Foundation
NGO Report Review Tool updated for 3rd Quarter.docx
NGO Report Review Tool for C4C.docx
NGO Report Review Tool _ TRUWAYLIF.docx
NGO Report Review Tool updated for 3rd Quarter.docx


Zasilari
~WRL0005.tmp
ZASILARI.docx
ZUURI.docx
Meta Foundation-Emmanuel Lignule
Copy of META 3RD QUARTER AFP FIN REPORT.xlsx
Copy of META CONSOLIDATED FINANCIAL REPORT.xlsx
META AFP Third Quarter Report.docx
META Report on Summary of Key Achivements Final.docx
NGO Report Review Tool updated for 3rd Quarter.docx
PROPOSAL
Concept Notes - Meta Foundation.docx
META Foundation MoA.pdf
Reviewed PROPOSAL AND BUDGET - META.pdf
TRUWAYLIF-Emmanuel Lignule
Copy of TRUWAYLIF CONSOLIDATED FINANCIAL REPORT -AF PROJECT FROM_Q1-Q3.xlsx
Copy of TRUWAYLIF THIRD QUARTER FINANCIAL REPORT 2019.xlsx
NGO Report Review Tool updated for 3rd Quarter.docx
PROPOSAL
Concept Note - TRUWAYLIF.docx
REVISED PROPOSAL - TRUWAYLIF.docx
Transform Women _ Youth Life Foundation (TRUWAYLIF)_MoA.pdf
TRUWAYLIF Report Summary of Key achivements 2019.docx
TRUWAYLIF THIRD QUARTER REPORT 2019.docx
Zasilari-Emmauel Lignule
Copy of CONSOLIDATED FINANCIAL REPORT -AF PROJECT TEMPLATE _Q1-Q3.xlsx
Copy of ZEFP-FIN REPORT-3rd quater.xlsx
NGO Report Review Tool updated for 3rd Quarter.docx
NGOs Report Summary of Key achivements_2 pages.docx
PROPOSAL
AFP Revised Proposal _ZEFP .doc
Concept Notes - Zasilari Eco Farms Proj (ZEFP).docx
Zasilari Eco farms MoA.pdf
ZEFP-3rd Qtr_10012019.docx
Zuuri Organic Farms-Emmanuel Lignule
NGO Report Review Tool updated for 3rd Quarter.docx
ZOVFA_s Summary Report on Our Key Achivements for Year 1.docx
ZOVFA-AF 3rd Quarter (Jan-May 2019) Narrative Report.docx
G2 B
Edgar
NGO 3RD QUARTER REVIEW EDGAR DRAH.docx
General Observations.docx
Reviewed Reports- Dotse
~WRL2324.tmp
community self-reliance report review.docx
devt frontiers.docx
LAHORIMA Report Reviewed -Dotse.docx
NGO Report Review -3rdQ_LINKED Ghana.docx
NGO Report Review 3rd Quarter_ BIDO.docx
NGO Report Review Tool for 3rd Quarter_ Agro Intro..docx
G3 A
General Comment_G3 A.docx
Kingsley
ASUDEV Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
ASUDEV Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(1).docx
ASUDEV Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(2).docx
CLIP_Kingsley Agyemang.docx
CLIP_Kingsley Agyemang(1).docx
LIST OF COMPLETED REVIEWED DOCS_NGO Q3.xlsx
LIST OF COMPLETED REVIEWED DOCS_NGO Q3(1).xlsx

- Presby Comm Based Rehab Prog_Kingsley Agyemang.docx
- PRONET NORTH Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
- PRUDA_Kingsley Agyemang.docx
- SIMILI AID Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
- SONGTABA Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
- Zinabu
  - ASUDEV Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
  - ASUDEV Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(1).docx
  - CLIP.docx
  - CLIP(1).docx
  - Presby Comm Based Rehab Prog.docx
  - Presby Comm Based Rehab Prog(1).docx
  - PRONET NORTH Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
  - PRONET NORTH Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(1).docx
  - PRUDA_E.docx
  - PRUDA_E(1).docx
  - PRUDA_E(2).docx
  - SIMILI AID Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
  - SIMILI AID Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(1).docx
  - SONGTABA Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1.docx
  - SONGTABA Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(1).docx
  - SONGTABA Report Review Tool for 3rd Quarter_ Kingsley Agyemang 1(2).docx
- G3 B
  - Fabian_REVIEWED WORK
    - FABIAN_BELIWDA.docx
    - FABIAN_CENTRE FOR RURAL WATER DEVELOPMENT AND SANITATION.docx
    - FABIAN_PURE TRUST.docx
    - FABIAN_SavaNet.docx
    - FABIAN_SUNGMAH ORGANIZATION.docx
    - FABIAN_TICOFAMU.docx
    - FABIAN_TIKARINONGU.docx
    - FABIAN_WORLD VISION INTERNATIONAL IN GHANA.docx
    - FABIAN_WORLD VISION INTERNATIONAL IN GHANA(1).docx
    - NGO Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - NGO Report Review Tool for 3rd Quarter_ to be discussed44(1).docx
  - General Observations G32.docx
  - Gyimah Review
    - Belim Wusah DevA_Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - Centre for Rural Dev_NGO Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - PURETRUST_Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - SAVANET_Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - Sungmah_Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - TICOFAMU_Report Review Tool for 3rd Quarter_ to be discussed44.docx
    - World Vision_Report Review Tool for 3rd Quarter_ to be discussed44.docx
  - General Discussions_NGO Review.docx
- REPORT ON 2nd QTR REPORTS REVIEW OF NGOs.docx
- Work plans
  - 2018 Work Plan_.pdf
  - 2019 Work Plan_signed.pdf
  - MAY TO DEC 2020 Work Plan adn Budget.doc
  - Year 1.xlsx
  - Year 2.xlsx

Annex 6.5: Evaluation Question matrix

Evaluation Questions	Indicators	Sources	Data Collection Method
Evaluation Criteria: Relevance			
Does the project's objective align with the priorities of the local government and local communities?	Level of coherence between project objective and stated priorities of local stakeholders	Local stakeholders Document review of local development strategies, environmental policies, etc.	Local level field visit interviews Desk review
Does the project's objective fit within the national water management and development priorities?	Level of coherence between project objective and national policy priorities and strategies, as stated in official documents	National policy documents, such as water related national Strategies and Plans, National Capacity Self-Assessment, etc.	Desk review National level interviews
Did the project concept originate from local or national stakeholders, and/or were relevant stakeholders sufficiently involved in project development?	Level of involvement of local and national stakeholders in project origination and development (number of meetings held, project development processes incorporating stakeholder input, etc.)	Project staff Local and national stakeholders Project documents	Field visit interviews Desk review
Does the project objective fit AF strategic priorities?	Level of coherence between project objective and AF strategic priorities (including alignment of relevant focal area indicators)	AF strategic priority documents for period when project was approved Current AF strategic priority documents	Desk review
Was the project linked with and in line with UNDP priorities and strategies for the country?	Level of coherence between project objective and design with UNDAF, CPD	UNDP strategic priority documents	Desk review
Does the project's objective support implementation of the water management? Other relevant water related policies?	Linkages between project objective and elements of the CBD, such as key articles and programs of work	CBD website National water management Strategy and Action Plan	Desk review
Evaluation Criteria: Efficiency			
Is the project cost-effective?	Quality and adequacy of financial management procedures (in line with UNDP, UNOPS, and national policies, legislation, and procedures) Financial delivery rate vs. expected rate Management costs as a percentage of total costs	Project documents Project staff	Desk review Interviews with project staff
Are expenditures in line with international standards and norms?	Cost of project inputs and outputs relative to norms and standards for donor projects in the country or region	Project documents Project staff	Desk review Interviews with project staff

Evaluation Questions	Indicators	Sources	Data Collection Method
Is the project implementation approach efficient for delivering the planned project results?	Adequacy of implementation structure and mechanisms for coordination and communication Planned and actual level of human resources available Extent and quality of engagement with relevant partners / partnerships Quality and adequacy of project monitoring mechanisms (oversight bodies' input, quality and timeliness of reporting, etc.)	Project documents National and local stakeholders Project staff	Desk review Interviews with project staff Interviews with national and local stakeholders
Is the project implementation delayed? If so, has that affected cost-effectiveness?	Project milestones in time Planned results affected by delays Required project adaptive management measures related to delays	Project documents Project staff	Desk review Interviews with project staff
What is the contribution of cash and in-kind co-financing to project implementation?	Level of cash and in-kind co-financing relative to expected level	Project documents Project staff	Desk review Interviews with project staff
To what extent is the project leveraging additional resources?	Amount of resources leveraged relative to project budget	Project documents Project staff	Desk review Interviews with project staff
Evaluation Criteria: Effectiveness			
Are the project objectives? To what extent were they met?	Level of progress toward project indicator targets relative to expected level at current point of implementation	Project documents Project staff Project stakeholders	Field visit interviews Desk review
What are the key factors contributing to project success or underachievement?	Level of documentation of and preparation for project risks, assumptions and impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
What are the key risks and barriers that remain to achieve the project objective and generate Global Environmental Benefit?	Presence, assessment of, and preparation for expected risks, assumptions and impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are the key assumptions and impact drivers relevant to the achievement of Global Environmental Benefits likely to be met?	Actions undertaken to address key assumptions and target impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Evaluation Criteria: Results			
Have the planned outputs been produced? Have they contributed to the project outcomes and objectives?	Level of project implementation progress relative to expected level at current stage of implementation Existence of logical linkages between project outputs and outcomes/impacts	Project documents Project staff Project stakeholders	Field visit interviews Desk review

Evaluation Questions	Indicators	Sources	Data Collection Method
Are the anticipated outcomes likely to be achieved? Are the outcomes likely to contribute to the achievement of the project objective?	Existence of logical linkages between project outcomes and impacts	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are impact level results likely to be achieved? Are the likely to be at the scale enough to be considered Global Environmental Benefits?	Environmental and water management indicators Level of progress through the project's Theory of Change	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Evaluation Criteria: Sustainability			
To what extent are project results likely to be dependent on continued financial support? What is the likelihood that any required financial resources will be available to sustain the project results once the AF assistance ends?	Financial requirements for maintenance of project benefits Level of expected financial resources available to support maintenance of project benefits Potential for additional financial resources to support maintenance of project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Do relevant stakeholders have or are likely to achieve an adequate level of "ownership" of results, to have the interest in ensuring that project benefits are maintained?	Level of initiative and engagement of relevant stakeholders in project activities and results	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Do relevant stakeholders have the necessary technical capacity to ensure that project benefits are maintained?	Level of technical capacity of relevant stakeholders relative to level required to sustain project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
To what extent are the project results dependent on socio-political factors?	Existence of socio-political risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
To what extent are the project results dependent on issues relating to institutional frameworks and governance?	Existence of institutional and governance risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are there any environmental risks that can undermine the future flow of project impacts and Global Environmental Benefits?	Existence of environmental risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Gender equality and women's empowerment			
How did the project contribute to gender equality and women's empowerment?	Level of progress of gender action plan and gender indicators in results framework	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
In what ways did the project's gender results advance or contribute to the project's water management outcomes?	Existence of logical linkages between gender results and project outcomes and impacts	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
Cross-cutting and UNDP Mainstreaming Issues			

Evaluation Questions	Indicators	Sources	Data Collection Method
How were effects on local populations considered in project design and implementation?	Positive or negative effects of the project on local populations.	Project document, progress reports, monitoring reports	Desk review, interviews, field visits

Annex 6.6: Field Mission Evaluation Outcomes

Annex 6.6.A Focus Group Interview Results

https://drive.google.com/drive/folders/1A1cx3_YP-4StKwhhiaXiNjqLOxn4X6-Y?usp=sharing

Annex 6.6.B Field Mission Evaluation photos

- **NORTHERN AND UPPER EAST**

https://drive.google.com/drive/folders/1SuFbEEShpjcxzI2ATqB59TyARPPsP25Q?usp=sharing

- **NORTHERN AND UPPER WEST**

https://drive.google.com/drive/folders/1oc-btNBuXNn2bR5J7A9vsD1njaNVT11g?usp=sharing

Annex 6.7: TE Rating scales

TE Rating Scales & Evaluation Ratings Table	
Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings:
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	

Evaluation Ratings Table	
Monitoring & Evaluation (M&E)	Rating[52]
M&E design at entry	
M&E Plan Implementation	
Overall Quality of M&E	
Implementation & Execution	Rating
Quality of UNDP Implementation/Oversight	
Quality of Implementing Partner Execution	
Overall quality of Implementation/Execution	
Assessment of Outcomes	Rating
Relevance	
Effectiveness	
Efficiency	
Overall Project Outcome Rating	
Sustainability	Rating
Financial resources	
Socio-political/economic	
Institutional framework and governance	
Environmental	
Overall Likelihood of Sustainability	

[52] Outcomes, Effectiveness, Efficiency, M&E, I&E Execution, Relevance are rated on a 6-point rating scale: 6 = Highly Satisfactory (HS), 5 = Satisfactory (S), 4 = Moderately Satisfactory (MS), 3 = Moderately Unsatisfactory (MU), 2 = Unsatisfactory (U), 1 = Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4 = Likely (L), 3 = Moderately Likely (ML), 2 = Moderately Unlikely (MU), 1 = Unlikely (U)

Annex 6.8: Signed Evaluation Consultant Agreement form

International Evaluator / International Consultant:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.
8. Must ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
9. Must confirm that they have not been involved in designing, executing or advising on the project being evaluated and did not carry out the project's Mid-Term Review.

Evaluation Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Evaluator: Antonio C.J. Arenas Romero

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Barcelona, Spain (Place) on December 2020 (Date)

Signature: _____

National Evaluator / National Consultant:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.
8. Must ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
9. Must confirm that they have not been involved in designing, executing or advising on the project being evaluated and did not carry out the project's Mid-Term Review.

Evaluation Consultant Agreement Form

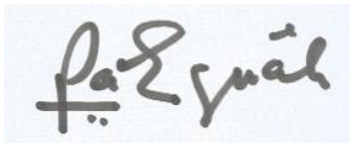
Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Evaluator: _PHILIP ACQUAH_____

Name of Consultancy Organization (where relevant): _Independent Consultant_____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at _4500 Nsawam Road, Ga West. Greater Accra on 14 December 2020

Signature: _____ 

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Annex 6.9: Physical Progress Report Summary

	PHYSICAL PROGRESS REPORT OF IMPLEMENTATION									
COMPONENT/OUTCOME/ OUTPUT	**INDICATORS**	**UNIT**	**BASELINE**	**CUMULATIVE PERFORMANCE**				**COMMENTS**	**INFORMATION SOURCE(S)**	**DESIGN CHANGES**
				PROJECT PERIOD:	**TERMINAL (END)**					
			2011	**PROJECT TARGET**	**ACTUAL**	**ACTUAL %**	**Status of Achievement**			
	Outcome 1: Improved basin level management and planning of water resources, taking into account climate change impacts on surface and groundwater sources									
Output 1.1: Climate change historical data and future projections generated for the White Volta, Black Volta and Oti basins	Existence of historical and downscaled climate projections	Study	No downscaled climate projections are in place	Downscaled and historical climate projections available for the White Volta, Black Volta and Oti Basins	Historical and downscaled climate projections established	100%	**Achieved**	**All studies** in this category **have been carried** and the **climate projections are available**.	MTE Report / Project Performance Report 3, 2019	
Output 1.2: White Volta management and investment plans comprehensively reviewed to take into account climate change impacts	Revised White Volta management plan	Plan Document	Current plan does not address climate change impacts nor link clearly to community level	Revised White Volta Plan completed and adopted at inter-ministerial level	The White Volta Management and Investment Plans have been developed under Water Climate Programme and Development Programme (WACDEP) project which was implemented by the Water Resource Commission and funded by DANIDA. The project obtained a copy of the report which was used to inform other interventions.	100%	Achieved	The project has **obtained a copy** of the report which will be used to inform other interventions	MTE Report / Project Performance Report 3, 2019	1.2, they have already been carried out under the project Water, Climate and Development Program (WACDEP).

Output 1.3: Climate smart water management plans designed for the Black Volta and the Oti River basins	Management plans in the Black Volta and five sub-basins in the White Volta and the Oti basins at ministerial level	Plan Document	No plans are in place	Black Volta and Oti basin plans adopted at inter-ministerial level	The water management and investment plans for the Black Volta and Oti river basins have been finalized and validated. The implementation of these plans is expected to result in improved water resource management and long-term planning to effectively address the underlying drivers of water resource	100%	Achieved	The water management and investment plans for the Black Volta and Oti river basins have **been finalized and validated**.	MTE Report / Project Performance Report 3, 2019	
Output 1.4: National, Regional, District and Community based Climate Change Adaptation Monitoring Committee established/adopted and strengthened (as envisioned by the National Climate Change Adaptation Strategy) in the three target regions	Three regional Climate Change Adaptation Monitoring Committees	No.	There is no committee in place	Regional Climate Change Adaptation Monitoring Committees established in the three target regions	The Regional, District and Community based Climate Change Adaptation Monitoring Committees have been established. Three regional training meetings, 10 districts level meetings and 50 community level engagement were completed. These trainings are expected to be done yearly.	100%	Achieved	The 10 Regional, 3 District and 50 Community based Climate Change Adaptation Monitoring Committees **have been established**. Three regional training meetings, 10 districts level meetings and 50 community level engagement were completed.	MTE Report / Project Performance Report 3, 2019	

								These trainings are expected to be done yearly.		

COMPONENT/OUTCOME /OUTPUT	INDICATORS	UNIT	BASELINE	END OF PROJECT TARGET	CUMULATIVE PERFORMANCE (MAY 2016-December 2020)				
			2011		ACTUAL	ACTUAL %	Status of Achievement	COMMENTS	INFORMATION SOURCE(S)
Outcome 2: **Climate resilient management of water resources by 50 communities in northern Ghana**									
Output 2.1: Climate responsive community water supply and management plans designed for 10 districts in northern Ghana	Number of communities in which management plans have been developed and are being implemented	Plan Document	Management plans are not in place. Lack of coherent and planned water management activities in communities.	50 community water management plans implemented by community institutions with at least 50% representation by women in place by end of programme year 2.	Draft community-catchment management plans developed for finalization in the next reporting	100%	Achieved	This indicator was not achieved in time. But at the end of 2019, 4 sub-basin plans contained over 50 communities. No data available about the representation by women	MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Field Mission Report/ Project Documentation; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities

Output 2.2: Climate smart community-based water supply systems provided for multiple uses and users in 30 communities in northern Ghana									
Output 2.2.1: Climate smart community-based water supply systems provided for multiple uses and users in 30 communities in northern Ghana	Number of operational boreholes (as sources of good portable/drinking water compared to normally polluted surface water)	No.	Communities have limited infrastructure in place for supply and storage of water (for use ALL-YEAR particularly during the dry season)	100 operational boreholes, benefitting at least 30,000 people (50% of whom should be women). Rainwater harvesting systems in place, providing water supplies to 50 community facilities	A total of 145 boreholes drilled.	145%	Over Achieved due to prudent management of resources.	In year 1, Ten (10) boreholes have been successfully drilled in five communities in Bawku Central. 40 operational boreholes have been drilled in the 2nd year bringing to a total of 50 boreholes drilled. These 50 boreholes are currently serving 15, 000 people mainly women and children in 30 communities in 5 districts. Recruitment for contractors for dams/dugouts underway. 50 operational boreholes have been drilled in addition bringing to total 100 boreholes drilled. These 50 boreholes are currently serving over 30, 000 people mainly women and children in 50 communities in 10 districts.	MTE Report / MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities
Output 2.2.2: Climate smart community-based water supply systems provided for multiple uses and users in 30 communities in northern Ghana	Number of operational dugouts/dams as rainwater harvesting systems	No	Communities have limited infrastructure in place for supply and storage of water (for use	50 dams/dugouts serving as rainwater harvesting and water storage systems in place,	10 dams were successfully rehabilitated under phase 1; and 5 additional will be	30% of ProDoc target but 100% of revised implementation target	Not Achieved based on ambitious. ProDoc target;	ProDoc target was revised from 50 to 30 and ultimately to /15 during project implementation to as a result of changes in the structure of existing dams, which required more works than originally anticipated. Existing dugouts/dams heavily silted with reduced storage	MTE Report / PPR- 3 (2019); Project Annual Reports including 2020 Annual Report Draft), /Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/

			ALL-YEAR particularly during the dry season)	providing water supplies to 50 community facilities	completed by march 2021. This brings to a total of 15 dams that would be rehabilitated under the project.			volumes. These additional works resulted in additional cost which does not permit the project to rehabilitate the 30 dams	(https://mesti.gov.gh/adaptationfund/documents/communities
Output 2.3: Small scale irrigation systems installed in 30 communities and water users' associations to manage irrigation systems established and/or strengthened to improve efficiency and effectiveness of water usage under conditions of climate-induced water pressures	Number of operational community scale irrigation systems installed	No.	Very few communities have effective irrigation systems in place	50 operational irrigation systems, benefitting at least 2,500 farmers	40 small irrigation systems, one each in 40 communities with a total direct beneficiary of 1590 have been established (60% women).	80%	Not Achieved	The project provided small-scale infrastructure support, such as watering cans, pumps and pipes, to facilitate dry seasoning gardening by women. This activity is linked to increased water supply and storage, particularly from dugouts and small-scale dams	Project Performance Report 3, 2019; Project Annual Reports including 2020 Annual Report_Draft), /Physical Progress Report (Annex 9)/Field Evaluation/ Project ProDoc; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities
Output 2.4: Measures for water conservation under climate impacts implemented in 25 communities	Deforestation and illegal mining and tree cutting activities within river banks exacerbates evaporation and drought frequency	No	No climate-resilient water conservation measures in place	30 buffer zones with fence created with effective water	30 Buffer zones have been created. Over all 44, 000 tree	100%	Achieved	Consistent with the water conservation measures outlined in the project document (ref, page 25), tree nurseries have been established as effective water catchment/river bank re-afforestation schemes	Project Annual Reports including 2020 Annual Report_Draft), Physical Progress Report (Annex 9); Field Evaluation and Project ProDoc; Project documentation and

	(N/A in the Prodoc)			catchment/river bank re-afforestation schemes to reduce siltation and evaporation water-losses as water conservation measures	seedlings have been planted in 30 communities which were designated for woodlots/ plantations. These tree planting will among others are secured from bush fires, encroachment and deforestation by farmers and livestock to reduce siltation in the watershed and sustainability of the afforestation scheme			with buffer zones. The afforestation reduces evaporation and provide water loss-control system to extend the holding capacity of the dugouts and dams. The project planted trees around the existing dams. Even where dams existed, the TE observed the project planted trees around the water bodies (e.g., Tumu and Tampion). Other buffer zones have also been created. Fire belts are established to protect the trees to sustain the water conservation measures. Water Resources Commission carried out training workshops within river basin catchment areas to educate the communities on water resources management issues relating to avoiding deforestation activities and illegal mining that exacerbate climate impacts and vulnerabilities. The water management boards established and institutionalized form part of the strategies to sustain the water catchment conservation measures.	publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities

Output 2.5: Learning platforms on systems for integrating climate change-related risks into community management of water resources and livelihood activities in northern Ghana institutionalized in 10 districts	N/A in the ProDOc		Lessons learnt documentation produced.		A 20-minutes video documentary, a photobook and a newsletter highlighting the progress the project from inception into mid-term of implementation have been developed	N/A	Achieved based on the implementation phase target set	Dissemination of information was done during planning and implementation of the project. The project information and publications are hosted on the MESTI website: (https://mesti.gov.gh/adaptationfund/), They include knowledge transfer materials, lessons, results, training workshops and information exchange (https://mesti.gov.gh/adaptationfund/documents/ communities; The project held peer-to-peer knowledge sharing, learning and capacity building platform for the 46 NGOs to share lessons on their respective livelihood interventions, conduct two learning events for integrating climate change-related risks and project results into community management of water resources and livelihood activities in Northern Ghana	PPR 3 (2019), Project Annual Reports including 2020 Annual Report_Draft), Consultants' Physical Progress Report (Annex 9); Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities

COMPONENT/OUTCOME/OUTPUT	INDICATORS	UNIT	BASELINE	END OF PROJECT TARGET	CUMULATIVE PERFORMANCE (MAY 2016-December 2020)				
			2011		ACTUAL	ACTUAL %	Achievement status	COMMENTS	INFORMATION SOURCE(S)
Outcome 3: Enhanced diversification of livelihoods by 50 communities in northern Ghana									
Output 3.1: Improved infrastructure for water distribution for CCA and agricultural use installed in 10 districts									

Output 3.2: Livelihoods diversification for improved adaptation to climate change in 50 communities									
3.2.1 dry season gardening schemes established	Number of dry season gardening schemes for women established	No.	Few communities benefit from effective dry season gardening	50 dry season gardening schemes for women established, directly benefitting at least 1,000 women	50 dry season gardening schemes for women have been established. These schemes are supporting over 1, 590 direct beneficiaries in 40 communities to undertake the planting of pepper, okro, tomatoes among others during the dry season.	100%	Achieved.	Fencing for security from livestock, and water supply schemes supported the dry season small holder farms adequately. The support has demonstrated the effectiveness of dry season relative to rain-fed gardening. Farmers have developed preference of dry season farming compared to rain-fed. This is driven by higher yields, productivity, increased income and profitability, and more importantly increased cycles of farming when water remained viable water These schemes are supporting over 1,590 direct beneficiaries in 40 communities to undertake the planting of pepper, okro, tomatoes among others during the dry season. Considered the most successful livelihood intervention limiting migration especially for rice farmers. To the extent that in one community, the farm, the hoses were all burnt by unidentified person because they were not benefitting from the project, and have been requesting for the expansion to include	Project Performance Report 3 (2019) Project Annual Reports including 2020 Annual Report_Draft), Physical Progress Report (Annex 9)/Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities

								them; which was not provided because the project is a demonstration. Assemblies ate to replicate the project success under the government program of planting for food and jobs (PFJs).	
3.2.2 Bee Keeping schemes established	3.2.2 Number of Bee Keeping schemes established	No.	Few communities benefit from bee keeping activities	40 community tree nurseries and wood lots, incorporating bee keeping, established	42 bee keeping schemes established in Phase I and 8 additional in Phase II, bringing the total to 50 communities benefiting 1348 direct beneficiaries	125%	Achieved.	Additional 25% communities benefitted from the bee keeping schemes along the honey production value-chain established (1,348 direct beneficiaries). Key issues identified: 1. Women want increased quota in beekeeping. 2. PPEs are not sufficient (One per group). 3. Lack of clear accounting and profit-sharing regimes by members of the different groups in relation to their harvest. 4. Colonization of bee hives low in concrete hives compared to wooden. Requesting replacement of concrete hives. 6. Harvesting being done by other trainers, not beneficiaries, raising the question of insufficient training on harvesting techniques.	AF Project Implementation Beneficiary Analysis 2019, PPR-3; Project Annual Reports including 2020 Annual Report_Draft), Supporting document on the number of beekeeping communities as at 30 December 2020, Physical Progress Report (Annex 9)/Field Mission Report; Beneficiaries Interview Outcome; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/

								7. COVID prevented external support for harvesting at the right time, leading to loss of the harvest. 8. in some communities, they would have preferred livestock to beekeeping because the men dominate the bee keeping. (low involvement not desirable)	(https://mesti.gov.gh/adaptationfund/documents/communities
3.2.3 agricultural product processing schemes established	Number of women led agricultural product processing schemes established	No.	Few communities benefit from agricultural product processing	40 community level women led agricultural product (shea butter or honey) processing schemes established, directly benefitting at least 1,200 women	24 community level women-led agricultural product (shea butter, groundnut and baobab) processing schemes established. Over 60% of these direct beneficiaries are women (Approx. 1260.	55% based on Original ProDoc; BUT 100% based on revised target in the implementation phase	Not Achieved based on original ProDoc	Original ProDoc target of 40 communities was revised during the implementation phase to 24. This 24 Agro processing centers was established in 24 communities; achieved 60% women participation as the target women-led agricultural product processing schemes; benefiting over 1,260 direct beneficiaries in the processing of shea, groundnut and baobab in 24 communities.	PPR- 3, (2019); Project Annual Reports including 2020 Annual Report_Draft), Physical Progress Report (Annex 9)/ Field Mission Report (interview outcome-) Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities
3.2.4 Household Income	3.2.4 Increased Household Income		More than 50% of the households in the target communities have income levels below the poverty line	At least 50% of the households in the target communities increase their income by 30% by the end of the project	Independent studies using economic models to be conducted in the final year of the project to determine this indicator		Not Achieved	Independent studies information yet to be accessed.	Project Performance Report 3, 2019

Output 3.3: Community tree nurseries and wood lots established for climate risk management in 40 communities	Number of tree nurseries/wood lots established	No.	Few communities benefit from community managed tree nurseries and wood lots	40 community tree nurseries and wood lots, incorporating bee keeping, established	25 tree nurseries established benefiting over 400 direct beneficiaries in tree seedling establishment and marketing	62.5%	Not Achieved	The overall performance of the community tree nurseries sector did not meet expectation due to poor market. As a result, the majority of the seedlings were not sold to off takers as expected. Hence, the sector was not considered under the Phase 2 implementation. The resources were used to support the establishment of 9 community fish farms in 2019. 62.5% of tree nurseries established benefiting beneficiaries in tree seedling establishment and marketing Tree nurseries in Tampion have been destroyed due to dam overflow. Nursery inundated. Considered as the result of extreme event of flooding from spill of Bagre dam.	PPR-3 (2019); Project Annual Reports including 2020 Annual Report_Draft); Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities
Output 3.4: Fish farms are established and supported in 20 communities	Number of operational community fish farms established	No.	Few communities benefit from community fish farms	20 community fish farms established, benefitting at least 10,000 people (50% of whom should be women)	A total of 39 fish farms in rehabilitated dams/dugouts have been established in 23 Communities benefiting over 790 direct beneficiaries.	115%	Achieved	39 fish farms were successfully established under phase 1 and 9 under phase 2 making a total of 39 fish farms. Of the fish farming visited during the filed mission, one fish pond in Goli had very good harvest. In Tampion, the fish cages were washed	PPR-3 (2019); Project Annual Reports including 2020 Annual Report_Draft); Field Mission Report; Project documentation and publications at MESTI-AF website https://mesti.gov.gh/adaptationfund/ (https://mesti.gov.gh/adaptationfund/documents/communities

								away by flood, considered extreme event when the Bagre Dam was spilled in August 2020; raising the question loss and damage. One breached dam resulted in the loss of the cages. Other communities had theft cases, raising security issues. Others not completed. While fish farming could be very profitable livelihood,	
Output 3.5: Best practices for adaptation and lessons learned from the implemented actions. Related policy processes are recorded and disseminated to all 38 districts in northern Ghana through appropriate mechanisms				Produce and disseminate brochures, maps, video documentaries/Learning visits, Sign Posts etc.	baseline video documentary, baseline photobook and project newsletters produced; radio discussion at the regional capitals between 5th February and 15th March 2017 in the Northern, Upper East and West regions	N/A	Achieved	. A local Ghanaian media firm has created a baseline video documentary, baseline photobook and project newsletters for the 3rd and 4th quarters of the project's implementation. The PMU led by the Project Coordinator worked with the regional EPA Directors to host a radio discussion at the regional capitals between 5th February and 15th March 2017 in the Northern, Upper East and West regions. The radio interaction was centered on raising awareness on the project, target districts and communities as well as the relevance of the project to Government and its benefits to the target Sign Posts have been	

								planted. project information and publications are hosted on the MESTI website: (https://mesti.gov.gh/adaptationfund/), They include knowledge transfer materials, lessons, results, training workshops and information exchange (https://mesti.gov.gh/adaptationfund/documents/ communities;	

ToR ANNEX F: TE Report Clearance Form

PIMS – 4592 RESILIENCE TO CLIMATE CHANGE IN GHANA

Terminal Review Report Reviewed and Cleared By:

Commissioning Unit

Name: __Silke Hollander (Deputy Resident Representative) _____

Signature: Silke Hollander Date: 25-Jun-2021

UNDP-GEF Regional Technical Advisor

Name: Muyeye Chambwera

Signature: _____ Date: 27-Jun-2021

Sk

Annex 6.11: TE Audit Trail.

(to be used after receiving comments on this draft of final report)

To the comments received on *(date)* from the Terminal Evaluation of *Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods (PIMS 4952)*

The following comments were provided to the draft TE report; they are referenced by institution/organization (do not include the commentator's name) and track change comment number ("#" column):

Institution/ Organization	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken

Annex 6.12: NGOs and CBOs -Partners of Livelihood Intervention Projects

https://drive.google.com/file/d/1ia1BKZDFrUzRTA2cROJKiXUkOmZ0I_8S/view?usp=sharing

Annex 6.13: Updated Beneficiaries of Livelihood Interventions Projects

https://drive.google.com/file/d/1JfsbRQAOuNf0CVP3Cvrbb8yCnJEHF2Qv/view?usp=sharing

Annex 6.14: UNDP-CO disbursement to IP for 2021 Q1 outstanding 5-dams-dugouts construction

https://drive.google.com/file/d/1XSM8JXGLdWCdxX-H9xVUtqxN1G87EeJo/view?usp=sharing