Report:

Terminal Evaluation of the project:

"Strengthening Climate Information and Early Warning Systems in Tanzania for Climate Resilient Development and Adaptation to Climate Change"

GEF Project ID: 4991

UNDP Project ID: PIMS 5096

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Disclaimer

Please note that the analysis and recommendations of this report do not necessarily reflect the views of the United Nations Development Programme, its Executive Board or the United Nations Member States. This publication reflects the views of its authors.

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LIST OF ACRONYMS

AAP	Africa Adaption Program
APR	Annual Performance Report (of UNDP)
CSO	Civil Society Organization
DCS	Disaster Communication Strategy
DFID	Department for International Development
DM	Disaster Management
DRR	Disaster Risk Reduction
EMA	Environment Management Act
EOU	Emergency operations unit
EWS	Early Warning Systems
GDP	Gross domestic product
GEF	Global Environment Facility
ICT	Information and Communications Technology
LDCF	Least Developed Countries Fund
MAFS	Ministry of Agriculture and Food Security
MoF	Ministry of Finance
MoW	Ministry of Water and Irrigation
NAPA	National Adaptation Programmes of Action
NEMC	National Environmental Management Council
NGO	Non-governmental Organization
NSGRP	National Strategy for Growth and Reduction of Poverty
NIM	National Implementation Modality
PIF	Project Identification Form
PMO	Prime Minister's Office
PMO-DMD	Prime Ministers' Office –Disaster Management Department
PPG	Project Preparation Grant
REDD	Reducing Emissions from Deforestation and Forest Degradation
SMART	Specific Measurable Achievable Relevant Time-bound (Indicators)
SMS	Small Massage System
SOP	Standard Operation Procedures
SWAP	Sector-Wide Approach
TAFSIP	Tanzania Agriculture and Food Security Investment Plan
TCRA	Tanzania Communications Regulatory Authority
TE	Terminal Evaluation
TRCS	Tanzania Red Cross Society
TEPRP	Tanzania Emergency Preparedness and Response Plan
TMA	Tanzania Meteorological Agency
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNDP CO	United Nations Development Program Country Office (Tanzania)
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	The United Nations Children's Fund
VPO-DOE	Vice President's Office – Division of Environment
WB	World Bank
WBAs	Water Basin Authorities
WFP	World Food Programme

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EXECUTIVE SUMMARY

Project summary table

Table 1: Project Summary

Project Title:	***Strengthening climate information and early warning systems in Tanzania for climate resilient development and adaptation to climate change***			
GEF Project ID:	4991		*at endorsement (Million US$)*	*at completion (Million US$)*
UNDP Project ID:	PIMS: 5096	GEF financing:	3.60	3.42
Country:	Tanzania	IA/EA own:	0.60	0.79
Region:	East Africa	Government:	22.57	19.74
Focal Area:	Climate Change Adaptation	Other:		
FA Objectives, (OP/SP):	• Transfer of technologies for climate and environmental monitoring infrastructure • Climate information integrated into development plans and early warning systems ****	Total co-financing:	23.17	20.53
Executing Agency:	PMO-DMD (co-chair) VPO-DOE (co-chair)	Total Project Cost:	26.77	23.95
Other Partners involved:	• TMA ** • MoW ** • MAFS Crop/Irrigation Department ** • Ruvuma Water Basin ** • Pangani Water Basin ** • Ministry of Livestock and Fisheries (Participating member) • TCRA (Participating member) ** Responsible Partners	ProDoc Signature (date project began):		16/12/2013
		(Operational) Closing Date:	Proposed: 30/6/2018	Actual: 30/6/2018
Geographical areas covered	Apart from pan country provision of weather stations, on the ground interventions were carried out out in two pilot districts, namely Liwale district located in Lindi region and Arumeru district in Manyara region			

Introduction and brief description of the project

The UNDP-GEF project, "**Strengthening Climate Information and Early Warning Systems in Tanzania for Climate Resilient Development and Adaptation to Climate Change**" aimed to improve the resilience to climate change by strengthening the capacity of the Government of Tanzania to observe, analyse and forecast climate information to enhance the capacity of their early warning systems for climate resilient development and adaptation to climate change. The two components of the projects and the corresponding Outcomes are as given in Table 2.

Table 2: Components and Outcomes of the Project

Project components	Outcomes
Component 1: Transfer of technologies for climate and environmental monitoring infrastructure	Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods
Component 2: Climate information integrated into development plans and early warning systems	Outcome 2: Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long- term development plans

Tanzania is a signatory to UNFCCC and has developed a National Adaptation Programme of Action (NAPA) (2006), as well as a National Climate Change Strategy. This project makes a direct contribution to addressing the 2007 NAPA Priorities in the water and health sectors. The project also falls within the framework of the Expanded NAPA of 2009, where early warning systems for droughts and floods are also mentioned as priorities in the short, medium and long-term for the agriculture sector, and as a cross-cutting priority. The project is relevant to the country's legal and development policy framework as it addresses a core issue that affects all sectors.

The project was to contribute to achieve the following Outcomes of the 'United Nations Development Assistance Plan (UNDAP 2011-2015)';

- Communities have access to improved credible emergency information to enable early action (Outcome 2, Emergency Preparedness and Response
- Prime Minister's Office (PMO) and Chief Minister's Office –Disaster Management Departments (DMDs) effectively lead Emergency Preparedness and Response (ERP) with focus areas most susceptible to disasters

UNDAP II for Tanzania has also identified the need for enhancing resilience at all levels of disaster management by strengthening early warning systems at national to community levels.

Despite some inevitable implementation challenges, the project progressed fairly well with less external interference as no major changes (socio-economic, environmental, political) took place since the beginning of the project.

The project has been implemented according to the National Implementation Modality (NIM), with UNDP as the GEF Implementing Agency. The Prime Minister's Office – 'Disaster Management Department' had the role of Implementing Partner for this project, with the VPO acting as executing partner. The project implementation also involved other responsible parties such as Tanzania Meteorological Agency, Ministry of Water and Irrigation and Ministry of Agriculture, Livestock and Fisheries.

Project implementation started on 16 December 2013 (Project Document signature date) with initial duration of four years up to December 31st, 2017. However, due to programmatic challenges, the project was granted a no cost extension of six months to 30th June 2018. As the project approaches its end, a 'Terminal Evaluation' of the project has been carried out. The Terminal Evaluation has been carried out by a team comprising of an independent international consultant (Dinesh Aggarwal, India) and an independent national consultant (Erneus Kaijage, Tanzania). This report provides the findings of the 'Terminal Evaluation', summary of which is provided in the following paragraphs.

Project Objectives and Logical Frame Work

Table 3, below provides the Project Objectives along with the summary of the two planned outcomes. It also shows the corresponding set of indicators for monitoring and verification of the achievements

against the Objectives and the Outcomes. It further provides the sources of verification of the achievements of the target values of the indictors.

Table 3: Project Log-Frame (as per project document)

Objectives / Outcome	Indicator[1]	Baseline	Targets	Source of verification
Project Objectives: To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania.	**Indicator A:** Level of capacity of agencies to monitor, assess and disseminate hydro-climate information for early warnings and long-term planning	The aggregate average level of capacity as per the 'Capacity Assessment Score' is measured at 2.24 at the start of project.	The aggregate average 'Capacity Assessment Score' at end of project is 3.5	'Capacity Assessment Scorecard'
Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods	**Indictor 1:** % of national coverage by climate monitoring system	50% of the territory is covered by some form of monitoring, but only 30% by AWS.	75% of national territory is covered by an automated network	TMA database of network stations, MoW
	Indicator 2: Frequency of data transmission and reception of current weather and river levels in TMA and the WBAs	River stations are read manually every 2 hours during rainfall but transmitted at various frequencies depending on the observer's capacity, automatic river gauges transmit every 30 minutes. TMA network operates at various frequencies, with most rapid transmission being hourly from AWS and slowest being daily manual readings transmitted on a weekly basis.	Data from river stations transmitted every three hours to TMA, every 30 minutes to the WBAs; Data from automatic weather stations received by TMA every three hours' basis and from manual stations on a daily basis	TMA, MoW, WBAs
Outcome 2: Efficient and effective use of hydro-meteorological and	**Indicator 3:** Percent of population with access to improved climate	30% of people in the project sites have access to some climate	At least 70% of residents in the targeted areas benefit from	Site surveys, reports on the implementation of the EWS

[1] The log frame given in the Project document has not numbered the indicators. Numbering has been done at the time of Terminal Evaluation to facilitate a cross reference and a discussion

Objectives / Outcome	Indicator[1]	Baseline	Targets	Source of verification
environmental information for making early warnings and long-term development plans	information and improved flood and drought warnings, % of which are women	information, but no people in the project sites have access to improved climate information, drought or early warnings.	improved climate information, drought or early warnings	simulation, crowd sourced information
	Indicator 4: Type of development planning framework informed by climate information in Meru and Liwale Districts	TAFSIP, NSGRP II, and other high--level frameworks include climate change and mitigating measures but no plans at local level	Local land use plans and development plans in Meru and Liwale include climate change risk information	Local land use plans, local development plans, district council documents

Attainment of results / Evaluation Ratings

Summary of the assessment regarding the attainment of results and objectives of different outcomes of the project is given in **Table 4**. Also given in the Table are the ratings for relevance, effectiveness, efficiency, sustainability, and impacts of the project. The Table also provides the ratings for Monitoring and Evaluation (M&E), Implementing Agency (IA) and Executing Agency (EA) Execution, and Assessment of Outcomes. Ratings have been provided using the GEF rating scale. This is as per the requirements of the TOR for Terminal Evaluations.

Table 4: Terminal Evaluation Ratings

	Rating	Brief Description
1. Project Objective / Outcome[2]		
• Project Objectives: To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania	**S**	As the 'Capacity Score Card' assessment at the end of the project has not been done it is not possible to assess the achievement of the project objectives, in terms of the indicator specified in the results frame-work. Due to this reason the assessment regarding attainment of the project goals and the project objectives have been done based on the assessment of the attainment of goals and objectives of the individual Outcomes of the project The achievement of results for the Outcome 1 and Outcome 2 of the project has been 'Moderately Satisfactory' and 'Satisfactory' respectively. Thus, at an aggregate level the achievement of results for project objectives is somewhere between 'Satisfactory' and 'Moderately Satisfactory'. In view of this and considering the attainment of results for different Outcomes, the achievement of project objectives and results has been rated as Satisfactory.
• Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods	**MS**	The project has successfully installed 36 new automated weather stations as was envisaged in the 'Project Document'. Actual achievement against the envisaged level of receipt of automated data from the hydrological stations and river gauges has fallen short of what was specified in the Project Document. Due to reduction in the number of actual spots /data points, the accuracy and the timeliness of the flood forecasts made using the flood forecasting model will be impacted. Further, there is no achievement towards deployment of flood forecasting model, due to which the objective of enhancing the capacity of the authorities to forecast and monitor the floods is only partially achieved.
• Outcome 2: Efficient and	**S**	The project carried out pilot activities in two divisions (Makata and Kibutuka) of Liwale district and 6 wards (out of 26 wards) of Arumeru District. The

[2] Ratings for: Attainment of Results; Highly Satisfactory (HS): no shortcomings; Satisfactory (S): minor shortcomings; Moderately Satisfactory (MS): moderate shortcomings; Moderately Unsatisfactory (MU): significant shortcomings; Unsatisfactory (U): major problems; Highly Unsatisfactory (HU): severe problems

	Rating	Brief Description
effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans		inhabitants of the project sites have benefited from the project services and received agro-meteorological information for social and economic activities. The project has distributed 200 smart phones to small holder farmers in the pilot areas in Liwale and Arumeru districts. In addition, 810 small holder farmers were connected to a farmer SMS system. These activities have increased the reach of the early warning system in the targeted (pilot) areas to the level of 70%. However, the issue in this case is that increased reach of the early warning system is not leading to increased benefit from improved climate information, drought or early warnings. This is because there is no effective use of the newly created early warning information dissemination network. For example, since the time (March 2017) the network has been established, only 3-4 massages have been sent to the target beneficiaries. The project has produced the policy briefs for Liwale and Arumeru on the impacts of climate change on local development, the report summarizes climate scenarios and flood forecast covering Ruvuma and southern Coast River Basin and Pangani River Basin. This is to support the resilience and long-term planning through working with the local authorities, Basin authorities, ward and district councils. The project has also updated the local land use plans, district strategic development plans and district budget plans in light of emerging climate information, flood forecasts and economic scenarios.
2. Monitoring and Evaluation[3]		
• M&E design at entry	S	M&E plan at the design stage was well conceived. The plan was well articulated and was sufficient to monitor results and track the progress toward achieving the objectives, except for some issues with the indicators used. Adequate provisions were made in the budget for monitoring and evaluation activities
• M&E Plan Implementation	MS	Monitoring and Evaluation activities have not been that strong. At the time of TE mission only three quarterly reports for the entire implementation period of the project could be shared. PIR was provided only for the year 2017. The possible opportunity for adaptive action due to M&E was largely lost
• Overall quality of M&E	MS	As M&E plan implementation has not been that good the overall quality of M&E has suffered
3 Assessment of Outcomes[4]		
• Relevance	**R**	The activities carried out under the project are in line with the national development priorities of Tanzania. Also, the project is in line with UNDP Operational Programs and priorities for Tanzania.
• Effectiveness	MS	There are issues with the achievements of the results. When it comes to 'early warning' the project has missed on one of the very important Output (flood modelling).
• Efficiency	MS	The performance on the front of 'strengthen availability of information for responding to climate change' has not been that good (in-spite of the system being in place).
4. Implementing Agency (IA) & Executing Agency (EA) Execution		
• Quality of UNDP Implementation	S	UNDP country office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system.
• Quality of Execution - Executing Agency	S	TMA and the water basin authorities were the appropriate institution within the government institutions to act as the implementing partners. The project executing agencies collaborated effectively with its partners in the project.
• Overall quality of Implementation / Execution	S	Given the quality of UNDP Implementation and quality of execution by the executing agency the overall quality of implementation / execution is satisfactory
5. Sustainability[5]		

[3] Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution: 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4. Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

[4] Ratings for Relevance: 2. R= Relevant (R); 1. NR=Not relevant

[5] Ratings for Sustainability: 4. Likely (L): negligible risks to sustainability; 3. Moderately Likely (ML): moderate risks; 2. Moderately Unlikely (MU); significant risks; 1. Unlikely (U): severe risks

	Rating	Brief Description
• Financial resources	MU	There are issues regarding how the increase (due to the project) in the cost of operations (e.g. consumables / batteries, charges to be paid to telecom companies etc.) are going to be meet.
• Socio-political	L	Wherever actions have been implemented on the ground, they have created a positive impact in the communities. There are no socio-political issues with the project or its results.
• Institutional framework and governance	L	As such there is no institutional and governance risk to sustainability of the project results except for the fact that the institutional framework for 'Early Warning' delivery and the matching actions on the ground involves multiple agencies.
• Environmental	L	There are no negative environmental impacts of the project, other than some minor impacts due to change in the land-use pattern
• Overall likelihood of sustainability	ML	Due to issues regarding financial sustainability the overall results of the project may suffer over a period of time.

Summary of conclusions

The project aimed to improve the resilience to climate change by strengthening the capacity of the Government of Tanzania to observe, analyse and forecast climate information to enhance the capacity of their early warning systems for climate resilient development and adaptation to climate change. The project targeted removal of the following barriers towards, use of 'Early Warning Systems' and 'Hydro-Met Capacity' in Tanzania;

- Inadequate number of meteorological and hydrological observation stations
- Lengthy and ineffective means of communicating weather, climate and early warning information
- Un-coordinated operation, maintenance and use of the hydro-climate monitoring system and information
- Policy and institutional weaknesses in the mechanisms governing disaster management.

The project has successfully installed new automated weather stations, rain gauges, river gauges and hydro-met stations. The project carried out ground interventions at two pilot locations (Liwale district located in Lindi region and Arumeru district in Manyara region). The inhabitants of the pilot project sites have benefited from the project services and now receive agro-meteorological information for social economic activities such as crop farming and livestock keeping. The project has distributed 200 smart phones to smallholder farmers in the pilot areas in Liwale and Arumeru districts. In addition, 810 smallholder farmers were connected with farmer SMS system. These activities have increased the reach of the early warning system in the targeted (pilot) areas. However, the issue in this case is that increased reach of the early warning system is not leading to increased benefit from improved climate information, drought or early warnings. This is because there is no effective use of the newly created early warning information dissemination network. For example, since the time (March 2017) the network has been established, only 3-4 messages have been sent to the target beneficiaries

Although there are some issues (as mentioned in the above paragraph) with the achievements of the results, the project has been able to achieve most of its objectives, 'to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania'. From the statement of the project objective, the four components in the overall objective of the project were;

- to strengthen the climate monitoring capabilities;
- to strengthen early warning systems;
- to strengthen availability of information for responding to climate shocks;
- planning adaptation to climate change.

The project has strengthened the climate monitoring capabilities of the country. However, when it comes to 'early warning' the project has missed on one very important Output related to flood

modelling. This is because the project could not complete implementation of the component pertaining to flood modelling and forecasting. Also, the performance on the front of 'strengthen availability of information for responding to climate change' has not been that good despite the system being in place. This is evident from the fact that only three-four massages were made available to the beneficiaries of the communities, where the pilots were carried out. When it comes to the objective of 'planning adaptation to climate change' the project has been able to successfully introduce climate change aspects in the land use planning in the two pilot areas.

The project provided the solutions to address the barriers towards the use of 'Early Warning Systems' and 'Hydro-Met Capacity'. However, as explained in the above paragraph, due to some minor shortfalls (e.g. non-achievement of flood modelling and forecasting, lack of performance towards delivery of advanced warnings) in the achievement of the results, there is a bit of lacking in terms of effectiveness and efficiency of delivery.

Recommendations

Recommendation 1: Generally speaking, in case of use of a Score Card as an indicator and a means for verification, the project document should include an elaboration on, how the Scores would be determined. Also, a write up should be included in the monitoring plan regarding the determination of 'Score' as an activity, so that it does not get missed out.

Recommendation 2: The project design has considered that demonstrations of benefits at local level from an effective EWS, increased information and prediction ability on floods and droughts and increased agro-meteorological information, will help replicate and upscale project outcomes to other regions. As such there is nothing wrong with this consideration. However, it needs to be appreciated that preparation of reports and knowledge products alone is not sufficient for replication. Such lessons learnt, good practices and field demonstration need to be disseminated and communicated to the target audiences to achieve the objective of replication. It is recommended that thethe project design should include the activities targeted as dissemination of the knowledge, case studies and lessons learnt to support replication and scaling up of project outcomes.

Recommendation 3: The measuring instruments (like gauges, sensors in the automatic weather stations etc.) supplied under the project will require periodic calibration. The infrastructure (laboratory etc.) required for this is presently not available in Tanzania, therefore. Thereforefuture projects involving supply of measuring instruments / equipment should have a strategy for periodic calibration of the instruments / equipment. It can as well be a part of the procurement process, wherein the calibration services are provided by the supplier of the equipment/instruments.

Recommendation 4: The project design has provided mobile phone network as a means of communicating early, the likelihood of a hazardous event and the measures required to be taken by the community to address the event. However, in the developing world, some geographical areas (including some of the locations where pilots under the projects we carried out) are still not at the level where availability of mobile telephony is still not there. For the cases where, mobile communication network is not available, the projects in the area of early warning / disaster management, in their design, need to provide for an alternative way to transmit data and to communicate 'Early Warning' of a likely event to the locations where mobile communication is still not available. Such alternatives, may include public broadcasting, community-based radio stations etc. (please see recommendation 9 as well)

Recommendation 5: The project could not complete the task of development and deployment of the flood forecasting models. A consultant for this activity has already been appointed. The deliverables for this will be provided by the consultant much after the end of the project. It is recommended that the project may work out the modalities for it to ensure that the quality deliverables are received, the required demonstration and training to the officials of the basin authorities is provided regarding the use of the software.

Recommendation 6: It is recommended to scale up the project to cover other areas of the country and the remaining seven water basins in Tanzania so that the other parts of the country can also benefit from the early warning. However, while doing so the lessons learnt from this project may be used to ensure better results.

Recommendation 7: It is proposed that TMA would partly meet its expenses by selling weather data and (or weather data products). In this regard, the country may need to have a formal data policy and regulatory mechanism to facilitate commercial use / marketing of weather data and products. In this regard a study should (or would need to) be carried out to see the kind of provisions made in different countries and draw the lessons.

Recommendation 8: To sustain the operations of TMA it is necessary to have consistent revenue streams through the sale of weather products. Some of the weather products which can be tapped are;

- Data for development of weather index-based crop insurance models
- Data for solar radiations (Solar Atlas)
- City / location specific weather data to facilitate Energy Efficiency measures in the building sector (Green Buildings).

Recommendation 9: For communication, the old and proven method of community-based radio stations may be explored. Although this may be comparatively capital intensive (compared to communication through mobile phone), the coverage of the impacted population would be almost 100%. Further, from a sustainability point of view this is better as no recurring cost is involved (for mobile communication the telecom companies are to be paid regularly which impacts the financial sustainability).

Recommendation 10: From the viewpoint of financial sustainability, one regular expense is the regular bills to be paid to the telecommunication companies. The national government may explore the possibility to have policies, wherein there are no charges by the telecom companies for providing such kind of services. For example, there can be a condition in the licensing agreement to the telecom companies, wherein the services provided for disaster management and defence of the country are not chargeable.

Recommendation 11: In the areas where mobiles phone services are not available, the project has provided for establishment of a satellite link for transmission of the data from the weather stations. The capital cost of providing the link and the recurring cost (for managing the batteries, invertors, solar PV systems etc.) is also quite high. It is recommended that in situations where the mobile phone services are not available, creation of such facilities with the mobile service provides (telecom companies) may be explored on a cost sharing basis. This is likely to reduce both the capital cost and the recurring cost for provision of the link for data transmission. It will have an added advantage of the development of the area.

1. INTRODUCTION

1.1 Context, purpose of the terminal evaluation and objectives

With the project "**Strengthening Climate Information and Early Warning Systems in Tanzania for Climate Resilient Development and Adaptation to Climate Change"** reaching the end of its implementation, a 'Terminal Evaluation (TE)' of the project has been carried out. This is as per the standard practice for all UNDP-supported GEF-financed projects. The target audience for the Terminal Evaluation were the funding agencies, project partners and beneficiaries, UNDP CO, UNDP at regional and HQ levels and UNDP Evaluation Office.

The project targeted removal of the following barriers towards use of 'Early Warning Systems' and 'Hydro-Met Capacity' in Tanzania;

- Inadequate number of meteorological and hydrological observation stations
- Lengthy and ineffective means of communicating weather, climate and early warning information
- Un-coordinated operation, maintenance and use of the hydro-climate monitoring system and information
- Policy and institutional weaknesses in the mechanisms governing disaster management.

The project was designed to respond and contribute to priorities of the Tanzania's NAPA (2007) and the National Climate Change Strategy (2012). The targeted project outcomes were aligned and coordinated with baseline efforts underway within Tanzania to promote development which is resilient to climate change at the national and local levels. The project was focused on strengthening the capacity of national and sub-national entities to monitor climate change, generate reliable hydro-meteorological information (including early warnings for droughts and floods) and to be able to combine this information with other environmental and socio-economic data to improve evidence-based decision-making for early warning and adaptation responses and long-term planning.

The UNDP CO engaged independent consultants to carry out the TE of the project as per the scope and terms of reference presented in **Annex A**. The broader defined objectives of the TE were as follows:

- To compare planned outputs of the project to actual outputs.
- Identify (if applicable) the causes and issues which contributed to non-achievement of the targets of the project.
- Draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming.

A team of consultants comprising of an International Consultant, Mr. Dinesh Aggarwal (India), and a National Consultant, Mr. Erneus Kaijage (Tanzania) was selected and contracted by the UNDP CO in Tanzania to carry out the TE. The international consultant was the leader of the evaluation team.

1.2 Scope and methodology of the terminal evaluation

The evaluation has been carried out in accordance with the Guidance for Conducting TEs of UNDP-supported GEF-financed Projects, as provided in the 'Handbook on Planning, Monitoring and Evaluating for Development Results'. Prior to the start of the TE, an inception report was prepared and shared with the UNDP CO at Tanzania and the project team. The inception report outlined the approach

and methodology to be followed while carrying out the evaluation. It also provided the timelines for the evaluation. The inception report included a table providing the criteria for the evaluation and the list of main evaluation questions. The table of TE criteria and the questions is given in **Annex B**. Accordingly, the methodology for carrying out the TE was comprised of following activities:

- **Review of Documents and Project Website:** Review of 'Project Design Document' and all relevant sources of information including documents prepared during the preparation phase. The review of documents included a review of financial data, mid-term evaluation report, sample of back to office reports, samples of project communication material etc. **Annex C** provides the list of documents reviewed.
- **Mission to Tanzania, interviews with stakeholders and site visits**. A mission to Tanzania was undertaken from 28th May 2018 to 6th June 2018. The mission included a briefing by the UNDP PMU and the project team. The mission concluded with a presentation to the UNDP CO, UNDP project team and government officials regarding the initial findings. During the mission, interviews with different stakeholders and project participants were carried out. The mission included visits to the sites of the pilot projects which were supported by the project. **Annex D** provides the overall schedule of the missions and the stakeholders interviewed during the mission. The mission also served the purpose of collecting some additional documents to support evidence-based evaluation. Some of the documents to be reviewed were also received after the mission.

The assessment of project performance has been carried out based on the expectations set out in the Project Logical Framework/Results Framework, which provides performance and impact indicators for project implementation. While doing so, the set of indicators, as mentioned in the result framework of the project along with the corresponding sources for verification were taken into account. While carrying out the evaluation, emphasis has been placed on evidence-based information that is credible, reliable and useful.

The review of documents provided the basic information regarding the activities carried out to attain the desired outcomes and outputs and the actual achievements. However, the mission was needed to verify the information, get some missing data and to learn about the opinion of the stakeholders and project participants to interpret the information. During the mission, the interviews with the key stakeholders'/project participants were based on open discussion to allow respondents to express what they felt were the main issues. This was followed by more specific questions on the issues mentioned. During the interviews, the evaluation criteria and the questions (Please see **Annex B**) were used as the check list to raise relevant questions and issues.

The evaluation has been conducted in accordance with the principles outlined in the United Nations Evaluation Group 'Ethical Guidelines for Evaluation' as given in **Annex E**.

1.3 Structure of the Terminal Evaluation report

The structure of the report is as per the format suggested in the Terms of Reference for the TE. However, the contents of the chapter on findings have been split into three separate chapters due to the size of the text.

The report starts with a chapter providing an introduction which is followed by the chapters of project description and findings. The last chapter of the report provides the conclusions and the recommendations. Additional information is provided in the Annexes to the report. The 'Executive Summary' of the report is provided in the beginning of the report and the rest of the report is organized as follows:

- Chapter 1: Introduction to the project

- Chapter 2: Project description and development context
- Chapter 3: Findings: Project design and formulation, Project implementation, Project results
- Chapter 4: Conclusions, recommendations and lessons

Annex B shows where the main criteria and questions of the TE can be located in different sections of the report.

2. PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

2.1 Project start and duration

The project started implementation on 16th December 2013 with the duration of four years. Accordingly, the target end date for the project was December 31st, 2017. The inception meeting of the project happened in a timely manner. However, there was a delay of about 9 months in the actual start (time when the PMU was established and staffed) of the project. This was followed by a further delay of about 3 months for the actual implementation to start due to time taken for allocation and transfer of funds. Due to some programmatic challenges, the project was granted a no cost extension of six months to 30th June 2018.

2.2 Problems that the projects sought to address

The project sought to address Tanzania's increasing vulnerability to severe weather and climate events such as droughts and floods by strengthening the country's capacity to operate a functional climate monitoring and forecasting system that allows for the deployment of accurate and timely early warnings, and that can serve as a basis for long-term development planning.

Under the project, the solution to addressing the problem of Tanzania's increased exposure to extreme weather events and climate variability is provided by establishment of a fully functioning early warning system and enhanced climate information, which can effectively monitor the state of the weather and forecast extreme events that may cause harmful and avoidable damages and collect climate information to inform long-term planning.

Despite past efforts towards adaptation to climate change, much remains to be done to ensure a minimum level of capacity for anticipating and averting climate induced disasters, and to ensure that development planning is founded on accurate climate information and services. A key obstacle to promoting, upscaling and mainstreaming adaptation is the inadequate early warning systems and hydro-climatic monitoring in the country. This includes a lack of reliable and up-to-date climate data, the inaccessibility of historical records, obsolete climate monitoring technology and equipment, limited forecasting and analytical capacity and inadequate communications channels. This places already vulnerable populations at an increased risk of exposure and loss from severe climate hazards such as droughts and floods, which are expected to increase in both severity and frequency due to climate change.

Another key obstacle to proactive adaptation in Tanzania is the relatively slow rate of integration of climate information into development planning: while many efforts are currently being deployed at the macro policy level and some integration is occurring, it has not yet reached the lower levels of planning at ward, district or regional level. As a result, much of the development planning that occurs at the local level doesn't yet take into consideration the future climate conditions, leading to potentially maladapted policies. This is in large part due to the local planning authorities' lack of access to relevant and accurate climate information services.

2.3 Immediate and development objectives of the project

It was envisaged that as a result of the project the Government will be better capacitated to address their priorities as articulated under the United Nations Development Assistance Plan (UNDAP 2011-2015). Such priorities include strengthening of country's enabling environment for the fulfilment of human rights and pro-poor growth, building national capacity to deliver basic services while increasing coverage and quality, and responding quickly through humanitarian assistance which is tied to long-term development objectives.

The project was to provide stronger hydro-climate monitoring capacity, which in turn was to help local communities and authorities avoid climate-induced losses in livelihoods and basic services such as food and shelter for the communities in the vulnerable areas. Further, the improved weather forecast was expected to enable the government to be informed (much in advance) as to where there is likelihood of shortages of food and other related basic needs, so that prior plans could be made to ensure availability of humanitarian assistance to save the lives of people and their properties.

The project addresses broader UNDP priorities such as strengthening the key drivers of inclusive pro-poor economic growth, including pro-poor sector policies, agro-productivity and manufacturing linkages enhancement, environmental and climate change mitigation and adaptation strategies.

2.4 Baseline and expected results

The defined objective of the project is, "to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania". The capacity in this case has been quantified using a 'Capacity Score Card'. The overall capacity in Tanzania was to be strengthened by building capacity on different fronts. Table 5 below provides the assessment of the baseline capacity (as determined using the 'Capacity Score Card') of different fronts and the expected capacity after implementation of the project.

Table 5: Baseline and Targeted capacity to monitor, assess and disseminate early warning

Parameters	Baseline capacity	Target capacity
Capacity of agencies to produce information	2.38	3.62
Capacity of agencies to package information	2.15	3.38
Capacity of agencies to disseminate information	1.93	3.00
Capacity of legislative and governance framework	2.50	4.00
Total average score	**2.24**	**3.50**

The baseline capacity was assessed as 2.24. This is between an "anecdotal evidence of capacity" (2 points) and a "partially developed capacity" (3 points).

The target level of capacity in the country to be achieved in the project timeframe, was 3.5. This is between a "partially developed capacity" (3 points) and a "widespread, but not a comprehensive capacity" (4 points).

The project design provides for strengthening the capacity for different components. For example, to strengthen the capacity of the agencies to produce information, there is in the project design made provision for installation of automated weather stations, river gauges and hydro-climatic stations; for packaging the information the project provided for deployment of a flood forecasting model; to increase the capacity to disseminate information the project provided for the use of mobile communication; for increasing the capacity of legislative and governance framework, the project design provided for training and use of climate information for land use planning.

2.5 Main stakeholders

Given below is the list of the major stakeholders for the project. The roles of different stakeholders and the plan to engage them under the project are provided in section 3.1.4.

- Vice Presidents' Office (VPO)
- Disaster Management Department-Prime Minister's Office
- Tanzania Meteorological Agency (TMA)
- Ministry of Agriculture
- Ministry of Livestock and Fisheries Development

- Ministry of Water and Irrigation
- Pangani Water Basin Board
- Ruvuma River and Sothern Coast Basin Water Board
- Tanzania Communications Regulatory Authority (TCRA)
- Liwale District Council
- Meru District Council
- Meru District Disaster Management Committee
- Liwale District Disaster Management Committee
- Local communities in the two selected pilot projects districts (Arumeru & Liwale Districts)
- Tanzania Red Cross Society
- United Nations Development Program (UNDP)
- World Vision

3. FINDINGS

3.1 Project Design and formulation

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Were the project's objectives and ooutcomes clear, practicable and feasible within its time frame?**
- **Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed?**
- **Were lessons from other relevant projects properly incorporated in the project design?**
- **Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval?**
- **Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?**
- **Were the project assumptions and risks well-articulated in the PIF and project document?**
- **Whether the planned outcomes were "SMART" (specific, measurable, achievable, relevant and time-bound)?**

3.1.1 Analysis of Log Frame / Results Framework

The objective of the project was to 'strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania'. To achieve this objective, the project was organized into two outcomes, with each of the two projected outcomes having their respective projected outputs and the corresponding set of activities which are detailed in Table 6.

Table 6: Outcomes and Outputs of the Project (As per Project Document)

Outcome	Output	Activities
Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods	1.1 36 additional automated stations generate hourly climate data	1.1.1 Procurement of 36 Automated weather station (AWS) 1.1.2 Siting and installation of AWS, including protective infrastructure 1.1.3 Acquisition of 2 additional servers for data storage and transmission 1.1.3 Train 6 TMA instrumentation specialists in the operation, calibration and repair of new stations and telecommunications facilities
	1.2 Real-time hydrological and river flow data available for major rivers in Pangani and Ruvuma Basins	1.2.1 Procure, site and install 20 hydrological stations, 20 river gauges and 20 rain gauges for monitoring river levels in Pangani and Ruvuma basins 1.2.2 Procure 1 computer, 1 server, and 1 modem for each Water Basin Office for local flood forecasting and data transmission
	1.3. Flood forecasting models, flood forecast management systems and flood risk maps are developed for each major river within the Pangani and Ruvuma Basins	1.3.1 Acquire flood forecasting software, tools and methodologies 1.3.2 Develop flood forecasting models using rainfall and river flow data in Pangani and Ruvuma Basins 1.3.3 Develop flood risk maps in Meru and Liwale districts using available historical data (in TMA and WBs)
	1.4 Hydrological and climate data collected from various monitoring systems is integrated into a harmonized database that is accessible to sectoral users	1.4.1 Rescue, digitize and archive relevant available historical data from all ministries relevant to the 2 pilot districts to be integrated in the global database. 1.4.2 Establish a working group of TMA, MoW, MAFS and DMD, and Water Basin Boards to develop a data sharing platform and agreements, including cost recovery modalities

Outcome	Output	Activities
		1.4.3 Establish an integrated database of climate/hydro information that can be accessed by sectoral users in real time, housed in TMA 1.4.4 SOPs developed for the collection of new observational data made possible through this and other projects focused on supporting data collection
Outcome 2: Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long- term development plans	2.1 Standard Operating Procedures for droughts and floods specifying EW codes, communications channels, roles and responsibilities and emergency procedures	2.1.1 Assess efficiency of available explicit and implicit operating procedures and draw lessons from available guidelines in Tanzania and other countries in the region 2.1.2 Develop Standard Operating Procedures for droughts and floods in consultation with all partners at national and local level, including NGOs and the media 2.1.3 Develop Early Warning and Agro-meteorological codes (including visual and graphic codes) for easy dissemination and interpretation
	2.2 An operational emergency operations unit that coordinates EW emission and DR activities for the country, based on SOPs	2.2.1 Complete a feasibility studyand institutional setup for the 24-hour emergency operations centre (EOU) within PMO-DMD including institutional considerations, financial sustainability issues, location, staffing 2.2.2 Recruit and train staff on the Standard Operating Procedures and on other functions of the EOU. 2.2.3 Acquire and install equipment for the operations of a 24-hour operating emergency unit within PMO-DMD
	2.3 One EWS simulation and adaptation planning exercise deployed in each district generates lessons learned for upscaling and replicating	2.3.1 Mobilize local disaster management committees and CBOs to participate in the simulation exercise and to designate participants in the crowdsourcing, through consultations and training 2.3.3 Develop emergency hazard scenarios and simulations 2.3.3 Working with District/ward Disaster Management Committees and local NGOs and CSOs, test system of EW Codes and SOPs; 2.3.4 Field visits and stakeholder consultations to understand how users of early warning advisories and warnings use the information for managing climate and weather-related risks and how their decision frameworks affect the interpretation of advisories and warnings
	2.4 A crowd sourced hazard feedback platform is installed	2.4.1 Acquire, set-up and distribute mobile communication technology to designated volunteers (50 per district) 2.4.2 Provide local training and awareness raising to platform participants and Users 2.4.3 Develop a set of graphic messages and codes for early warning and agro-meteorological information 2.4.4 Roll-out the crowd-sourced platform through training and technical support during the EWS simulation exercise 2.4.5 Training for local media, CSOs and NGOs on dissemination and interpretation of EW and climate information, including gender-based associations.
	2.5 Lessons learned and recommendations on replication, including costs and benefits of EWS are available	2.5.1 Gather socio-economic data in Meru and Liwale including available climate vulnerability data 2.5.2 Analyse potential losses at short, medium and long term, from the simulated hazards, including direct and indirect socio-economic impacts, and extrapolate data 2.5.3 Analyse economic costs and benefits of an early warning system at local level including data on economic losses avoided from the simulation exercise

Outcome	Output	Activities
		2.5.4 Develop lessons learned and recommendations report including methods for replication and extrapolation of the socioeconomic benefits of EWS
	2.6 Climate Change and Climate Hazards included in local development plans and land use plans in Liwale and Meru districts	2.6.1 Produce policy briefs on the impacts of climate change on local development and summaries of climate scenarios and flood forecasts 2.6.2 Working with districts and wards, update local land use plans, district strategic development plans and district budget plans in light of emerging climate information, flood forecasts and economic scenarios
	2.7 A plan for the sustainable financing for the operation and maintenance hydro-met network is developed and nationally approved	2.7.1 Work with TCRA on enhancing participation of cell phone operators in the EWS through regulatory reform 2.7.2 Develop a brief on annual costs and benefits of maintenance of the hydro-climate monitoring network, including on cost recovery, data services and public-private partnerships to support integration into national budget 2.7.3 Develop a private sector engagement strategy for climate info providers, including clients like agriculture, tourism, insurance, mining, transport (ports), and partners like cell phone operators, extension services, markets 2.7.4 Prepare a replication strategy including lessons learned, conditions for success and institutional considerations

The log-frame of the project, the indicators for monitoring and verification of the achievement (along with the baseline and target values for the indicators) were as given in Table 7.

Table 7: Project Log-Frame (as per project document)

Objectives / Outcome	Indicator[6]	Baseline	Targets	Source of verification
Project Objectives: To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania.	**Indicator A:** Level of capacity of agencies to monitor, assess and disseminate hydro-climate information for early warnings and long-term planning	The aggregate average level of capacity as per the 'Capacity Assessment Score' is measured at 2.24 at the start of project.	The aggregate average 'Capacity Assessment Score' at end of project is 3.5	'Capacity Assessment Scorecard'
Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods	**Indictor 1:** % of national coverage by climate monitoring system	50% of the territory is covered by some form of monitoring, but only 30% by AWS.	75% of national territory is covered by an automated network	TMA database of network stations, MoW
	Indicator 2: Frequency of data transmission and	River stations are read manually every 2 hours	Data from river stations transmitted ever y three hours	TMA, MoW, WBAs

[6] The log frame given in the Project document has not numbered the indicators. Numbering has been done at the time of Terminal Evaluation to facilitate a cross reference and a discussion

Objectives / Outcome	Indicator[6]	Baseline	Targets	Source of verification
	reception of current weather and river levels in TMA and the WBAs	during rainfall but transmitted at various frequencies depending on the observer's capacity, automatic river gauges transmit every30 minutes. TMA network operates at various frequencies, with most rapid transmission being hourly from AWS and slowest being daily manual readings transmitted on a weekly basis.	to TMA, every 30 minutes to the WBAs; Data from automatic weather stations received by TMA every three hours' basis and from manual stations on a daily basis	
Outcome 2: Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans	**Indicator 3:** Percent of population with access to improved climate information and improved flood and drought warnings % of which are women **Indicator 4:** Type of development planning framework informed by climate information in Meru and Liwale Districts	30% of people in the project sites have access to some climate information, but no people in the project sites have access to improved climate information, drought or early warnings. TAFSIP, NSGRP-II, and other high-level frameworks include climate change and mitigating measures but no plans at local level	At least 70% of residents in the targeted areas benefit from improved climate information, drought or early warnings Local land use plans and development plans in Meru and Liwale include climate change risk information	Site surveys, reports on the implementation of the EWS simulation, crowd sourced information Local land use plans, local development plans, district council documents

The planned outcomes and the corresponding set of indictors are 'SMART' enough, except for Indicator A and the corresponding source of verification for it. The 'Capacity Assessment Scorecard' is one a way to rate a qualitative aspect in quantitative terms. However, it has its own set of problems and issues. In order to minimize the bias of the individuals marking the scores for different attributes of the 'Score Card' a more robust scorecard verification should be used or developed at the time of baseline assessment. For this purpose, it is necessary that the set of stakeholders along with the attributes (including the weights for each of the attributes) is detailed in the project document. Also, it is necessary that 'Score Card' assessment is included as an activity in the project document or in the monitoring plan, so that it doesn't get missed out. It is recommended (please see recommendation 1) that the use of 'Capacity Score Card' as a means of verification should either be done away with or its use may be made in such a way that the discretion of the individuals giving the scores to different attributes is

minimized. Also, the project document should include an elaboration on how the 'Score Card' would be used.

The project objectives and the two Outcomes were clear and feasible within the implementation timeframe of the project. The Outcomes were also predictable in the sense that at the time of project design the activities and the corresponding Outputs specified in the 'Project Design' were leading to the desired Outcomes of the project.

3.1.2 Assumptions and Risks

At the time of the project design, a risk analysis of the project was carried out and this was included in the 'Project Document' (Annex 3 of the Project Document). Table 8 provides the identified risks and the corresponding risk mitigation options.

Table 8: Project Risks and Risk Mitigation

Risks	Risk Mitigation Measures
Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor and forecast droughts and floods.	
• Increased data flows will pose additional demands on the forecasting office, which it may not be able to meet with current resources. • TMA cannot mobilize sufficient government financing to continue monitoring and to cover recurring O&M costs. • Project cannot improve the current coordination between EWS agencies and with EWS-related initiatives to improve the ability to work cross-sectorally. • Natural disasters could damage infrastructure (particularly floods) • Data sharing is hindered by lack of coordination / willingness of agencies to share data or by technical constraints (e.g., bandwidth issues or local mobile telecommunication networks) • Digitization of climate records supported by the project will be insufficient to reliably increase historical data availability.	• Output 2.6 in the project seeks to develop a thorough, sustainable long-term financing strategy for all of TMA's needs. It is expected that the project will demonstrate benefits of maintaining the network cost savings to each individual ministry from the development of the shared database and data portal should demonstrate the benefits of coordination. • Equipment will only be installed following an environmental impact assessment with appropriate safeguards and protection • The data sharing mechanisms and protocols will ensure that all possible eventualities are covered, including technical failures, with appropriate backup and access mechanisms for all relevant stakeholders. Cost recovery measures may also be applied to ensure costs of database maintenance are covered. • Digitization is to happen gradually, with all new data coming into the shared database. Historical data will continue to be maintained on paper for specific needs.
Outcome 2: Efficient and effective use of hydro- meteorological and environmental information for making early warnings and long- term development plans.	
• Users could not be reached during the EWS simulation exercises due to lack of telecommunication infrastructure and inadequate roads. • SOPs may not be finalized in due time to inform the EWS simulation exercise. • Environmental or climate hazards will impede the deployment of the EWS simulation. • Government will not be able to mobilize sufficient resources to continue operating the Emergency	• A thorough community engagement exercise will occur well before the EWS simulation exercise to ensure willingness to participate. Scenarios will be developed in conjunction with community-based groups. • The project will initiate the development of SOPs during its first year, while the simulation is set to occur during the last year. Should the SOPs not be available, the project will use whatever implicit or explicit Operating Procedures are available at the time of the simulation, and lessons learned will be used to inform the future SOPs. • The project sites in which the simulation would take place could be changed in consultation with the Water Basin Authorities; the simulation exercise could be delayed or the data from the actual

Risks	Risk Mitigation Measures
Operations Unit after the project. • Private sector will resist dialogue and changes in the regulatory environment governing their access to weather/climate data. • Community would not demonstrate sufficient uptake of the crowdsourcing platform.	disaster could be used to replace information on the simulation • The project's sustainability and exit strategy will demonstrate the benefits of keeping the EOU operational, including recommendations for its maintenance. Work to mobilize government support for the EOU has already begun and is well advanced, since the EOU is part of the Government's own plans. • The TMA can engage the private sector and develop its own cost recovery strategy without the integration into National Budget Frameworks. • The project will develop incentives for using the crowdsourcing platform, such as the direct dissemination of agro-meteorological information to users, in easy to understand formats.

The log-frame of the project included a set of assumptions for each of the project outcomes. The assumptions which were made at the time of project design are given in Table 9. Also given in the table are the comments and observations at the time of 'TE' of the project.

Table 9: Assumptions made at project design (as per the Project Document)

#	Assumption	Comments at TE
	Outcome 1	
1	Data collected on river levels will be transmitted directly to the concerned Basin for early warning, simultaneously to transmission to TMA	The assumption remained valid during project implementation The data from the gauges on the river is being transmitted directly to the concerned basin and simultaneously to TMA
2	Telecommunication systems used for data transmission from manual and automated stations will be robust enough to withstand increased data flows	The assumption remained valid during project implementation. No problem in the transmission networks, due to increased data flow was observed
3	Forecast accuracy will increase through the provision of increased amounts of data in real time	Assumption could not be tested during project implementation
4	Available forecasting tools and methods are adequate to emit accurate short, medium- term, and seasonal forecasts	Assumption could not be tested during project implementation
5	All relevant ministries can access the shared database and continue to have adequate capacity for interpreting and using climate data for their own constituencies	Assumption could not be tested during project implementation
6	TMA and WBAs have enough regular and predictable financing to support monitoring operations and will consider recurring O&M costs for new infrastructure in government budget lines because of the usefulness of the EWS will be demonstrated	The assumption is not valid and WBAs are having problems to support the additional hardware and infrastructure
	Outcome 2	
7	Local users and communities are reachable and committed to participating in the EWS simulation exercises	Could not be tested as simulation exercise was not carried out
8	The simulation exercise is conducted without interference from natural or other hazards	Could not be tested as simulation exercise was not carried out
9	The government is capable and committed to integrate the SOPs and the Emergency Operations Unit into its regular operations and budgets after the duration of the project	The assumption remained valid during project implementation. Validity of the assumption beyond the project implementation is there in terms of commitments made by the government
10	The government will be willing to consider a change in regulation and national budgetary frameworks to support the ongoing operations of the monitoring system	The assumption remained valid during project implementation
11	There is sufficient political support and capacity within the	The assumption remained valid

#	Assumption	Comments at TE
	EWS agencies for successful execution and implementation of the project	during project implementation
12	There is and will continue to be sufficient qualified personnel within the NHMS to handle the new equipment, data transmission/storage/treatment	The assumption remained valid during project implementation
13	The private sector finds incentives and a vested interest in participating in the EWS	The assumption could not be tested

Most of the assumptions made at the project design stage remained valid during the implementation of the project, except for the assumption that TMA and WBAs have enough regular and predictable financing to support monitoring operations and will consider recurring O&M costs for new infrastructure in government budget lines because of the usefulness of the EWS will be demonstrated (assumption 6 in the above Table). Several assumptions (6 out of 13) could not be tested.

The project has created additional infrastructure for collection of weather data, generation of weather related warning and advisory. The one-time cost for creation of such infrastructure has been provided by the project. The project also provided the cost of operation and maintenance of the newly created infrastructure during the implementation phase of the project. After the closure of the project, the ownership of the assets and the responsibility to operate them will be passed on to the government authorities. There will be a recurring cost for maintenance and operations of the newly created infrastructure. Such costs include the following:

- Cost of consumables (batteries and spare parts);
- Charges to be paid to telecom companies for data transmission;
- Charges to be paid to energy companies for provision of on-site solar panel for power generation;
- Charges to be paid as rent /service charges to the owner of the premises housing the equipment; and
- Salaries to the additional staff for operation and maintenance of the equipment and the EOU.

The ownership and the responsibility for operation and maintenance of the advanced weather stations will get passed on to TMA. Presently, TMA gets funds from the government for its operations. Under the project a strategy has been worked out to generate some revenues by engaging the private sector and sell weather products. The idea is to meet about 20% of the regular expenses by selling the weather products. It is expected that TMA will be able to take care of the increased expenses partly by selling the weather product and partly by budgetary support.

In case of river gauges and hydrological stations, and the flood model, the ownership and the responsibility to operate will be with the two river basin authorities, where the pilots were carried out. These water basin authorities get some funds as per budgetary provisions and the balance funds are organized by them by levying a water change on the users of water. In case of Pangani basin water Board the collection of revenues due to water charges is quite significant (due to presence of hydro power generation facilities). Also, in case of Pangani Basin Water Board, due to availability of cellular phone network and internet in most of the areas, the communication expenses to transmit data to the server are comparatively low. It is expected that the Pangani Basin Water Board will be able to take care of the additional recurring expenses due to the project. However, the situation is not that comfortable in case of Ruvuma River and Southern Coast Basin Water Board, firstly, due to the absence of any major water user, the collection of water charges is not that significant. Ssecondly, because of non-availability of mobile phone network in many locations, the transmission of data used a satellite link (which is comparatively much more expensive). This will have a bearing on the sustainability of the gains made under the project (please see section 3.3.6 on sustainability).

3.1.3 Lessons from other relevant projects

In Tanzania, at the time of project design and prior to that, a number of projects were implemented /being implemented to address the issue of climate change and adaptation to climate change[7], including the following:

- Project on Disaster Management, through which UNDP worked with the Prime Minister's Offices' disaster management department to deliver outputs that were of direct relevance to this initiative, including: Revision of the National Operational Guidelines; Formulation of a M&E framework; Convening of Disaster Risk Reduction (DRR) national platform and formulation of a resource mobilization strategy for emergency response; Development of DRR training package for the PMO-DMD.
- Water Sector Development Programme (2005-2025), jointly funded by the World Bank and the national government, which had three major components: The Water Resources Management Programme (WRMP), the National Rural Water Supply and Sanitation Programme (NRWSSP) and the Urban Water and Sewerage Programme (UWSSP). The programme was deployed with the support of all the water stakeholders, including Ministry of Water, Water Basin authorities, water user groups, utilities and suppliers, private sector and NGOs. As part of the programme, a number of climate stations were procured to assist the Basins to better forecast rainfall events, droughts and floods. In addition, the programme had flood and drought management interventions that included: (i) preparation and agreements on disaster response organizational structures; (ii) preparation, financing and implementation of disaster advance warning systems; (iii) development of disaster contingency plans and procedures and training of personnel in their use; (iv) development of dam-safety measures to mitigate the impacts of floods and droughts; and (v) the identification and conducting of studies on climate change responses, and (vi) studies on the potential for and feasibility of large, medium and small scale dams and rainwater harvesting and their development, which could have the potential for buffering against climate variability.
- The UNDP-supported project "Mainstreaming Environment and Climate Change adaptation in the implementation of National policies and Development plan", provided valuable experience and expertise, as well as a baseline of capacity among key government institutions, including VPO, National Environmental Management Council (NEMC), and Ministry of Finance (MOF). This project was implemented through UNDP under UNDAP with additional support from DFID.
- The World Bank had provided support to the water sector in Tanzania through its Water Sector Support Project, which received over US$900 million in loan support from 2007. The purpose of the loan was to assist the Water Ministry and Water Basins in developing water infrastructure to increase access to water in rural areas. The World Bank also worked with DFID to develop a new project on supporting Climate Resilient Growth in Tanzania, which was to work with the Ministry of Agriculture to develop a climate adaptation action plan focusing on crop productivity.
- Pangani River Basin Management Project (PRBMP), which was implemented with support from the GoT, IUCN, Netherlands, the EU-ACP Water Facility, and the Global Environment Facility through UNDP, sought to strengthen Integrated Water Resources Management (IWRM) in the Basin. It performed an integrated environmental flow assessment to develop an understanding of the hydrology of the river basin, the nature and functioning of the river ecosystem and the links between the ecosystem and the social and economic values of the rivers' resources. It also undertook some climate modelling, and the development of scenarios looking to 2025 to determine how different water allocations could impact economic development, environmental health and social well-being in the basin.
- UNDP's Africa Adaptation Programme (AAP) project "Mainstreaming CCA in the National sectoral policies of Tanzania" sought to mainstream CCA mechanisms in Tanzania's policy, development and investment frameworks. The project ended in December 2012, it has received a small funding and time extension until 2014. The outputs were: introduction of long term mechanisms that can cope with CC uncertainties, strengthened leadership and institutional

[7] As mentioned in the project document

frameworks that can manage CC risks and opportunities, enhanced CC resilient polices and measures in priority sectors, national adaptation financing options established, and dissemination of CC knowledge generated, stored and shared nationally, regionally and internationally. The project has procured 7 automated weather stations and two cluster computers for weather forecasting at TMA.

- Tanzania also implemented two adaptation initiatives with UNEP, namely the "Implementation of Concrete Adaptation Measures to Reduce Vulnerability of Livelihood and Economy of Coastal Communities in Tanzania", and "Developing Core Capacity to Address Adaptation to Climate Change in the Coastal Zones of Tanzania".

However, the project document and other documents produced at the time of project development (PIF, PPG) does not provide any evidence to suggest that the lessons learnt from these projects were incorporated in the design of the present project.

3.1.4 Planned stakeholder participation

The list of important stakeholders for the project was provided earlier (Section 2.5). The Project Steering Committee of the project was a main tool for stakeholder engagement into the project planning and implementation and included key partners for project implementation and the beneficiaries of the project. The project steering committee includes representatives from various partners for implementation of the project from departments of different ministries. As per the project design, the other opportunities for formal engagement of stakeholders was by way of training sessions, conferences, workshops, awareness creation, project websites, results dissemination etc. Table 10 provides the details regarding the involvement and roles of the key stakeholders for the project.

Table 10: Roles of Key Stakeholders

Stakeholder	Role
Vice Presidents' Office (VPO)	VPO was the focal point for multilateral environmental agreements (MEAs) that Tanzania is party to. VPO played the lead role in engaging with UNFCCC initiatives in Tanzania and reporting back to the conference of parties. The project was to make use of the coordination capacity of VPO particularly in relation to the Adaptation Fund, the Green Climate Fund, the Climate Investment Funds, the Climate Technology Centres & Networks and any other instruments. For the project VPO assumed the executing role and therefore played an active role in the project as co-chairs of the Project Steering Committee. The VPO was also to be called upon to participate in the development of the long-term financing strategy for the hydro-climate monitoring network, including through partnerships and outreach with the private sector.
Disaster Management Department-Prime Minister's Office	Disaster Management Department (DMD) in the Prime Minister's Office is responsible for coordinating all disaster management response issues in the country including disaster relief operations and preparedness measures. DMD was the lead implementing partner for this project and housed the project management unit. It was the co-chair of the PSC with the VPO-DOE and coordinated activities with all other stakeholders.
Tanzania Meteorological Agency	Tanzania Meteorological Agency is the autonomous entity in charge of providing weather, climate services and warnings for the safety of life and property to the general public and to various users including aviation, marine, agriculture and food security, water resources, disaster management, health and construction industry, with its mission to provide quality, reliable and cost effective meteorological services to stakeholders expectations thereby contributing to the protection of life and property, environment and national poverty eradication goal. Under the project TMA was one of the main implementing partners and beneficiaries of the project, including through the acquisition, installation and operation of the new equipment. The TMA was also to house and administer the shared climate database.
Ministry of Agriculture	Crop Development department and Irrigation department, Ministry of Agriculture are the important stakeholders for the project. These departments use climate and hydrological information to ensure having current/future food and water security in the country, and they need timely accurate and reliable information necessary for

Stakeholder	Role
	decision making. The focus for the ministry's work is therefore combining climate information with crop information (rate of growth, flowering) to provide an overall forecast of the food situation. Using satellite data and the shared database established by the project, the MAFS was to be enabled to access real-time rainfall data that was to enable it to deliver better crop production advice to local farmers. The MAFS was also to lead in the development of agro-meteorological advice that was to be transmitted through the crowdsourcing platform (which was to be deployed as one of the activities of the project)
Ministry of Livestock and Fisheries Development	The Ministry of Livestock and Fisheries Development has the mandate of overall management and development of livestock and fisheries resources for sustainable achievement of the Millennium Development Goals, National Strategy for Growth and Reduction of Poverty, Improved Livelihood of Livestock and Fisheries Dependent Communities, Food Safety & Security without compromising animal welfare and environmental conservation. The Ministry was to be invited to participate in the project through the shared database, particularly in terms of accessing rainfall data. The ministry was also to be invited to participate in the development of agro-meteorological advice for livestock managers in the project districts, in cooperation with MAFS.
Water Resources Division, Ministry of Water and Irrigation (MoW)	Water Resources Division, Ministry of Water is responsible mobilizing and managing water resources in the country. The MoW was to work with WBAs to map out flood prone areas and whenever required, in collaboration with other agencies, issue early warning related to flood forecasting and early warning (FFEW). The MoW was to work with the Water Basin Authorities to deliver activities related to flood risk mapping and early warning in the project.
Pangani Basin Borad and Ruvuma River and Southern Coast Basin Water Board	Pangani Basin Water Board and River and Southern Coast Basin Water Board both under the management of Ministry of Water and Irrigation. Water Basin Boards are mandated to undertake water management with full stakeholder participation at local level. The Water Basin Boards were to be the lead actors in this project including through acquisition, installation and operation of hydrological monitoring equipment, training and mapping out flood risks; coordination of data collection with TMA; and in the deployment of the early warning system in their respective areas.
Tanzania Communications Regulatory Authority (TCRA)	TCRA has the mandate to regulate the communications and broadcasting sectors in Tanzania. The TCRA was to assist in developing a clear policy on agreements with the mobile providers on the use of frequencies, airtime and airwaves for early warning system. The TCRA was also expected to take part in the discussions on the long-term financing of the climate monitoring system through cost recovery.
Local Disaster Management Committees, District Councils (DCs)	Local Disaster Management Committees and District Councils (DCs) are the local government authorities. Disaster Management Committees (DMC) exist at district and ward level. The DMCs and DCs were to be the main local partner for the project and they were to coordinate the deployment of the simulation exercise, participate in the development of SOPs and codes, assist in the collection of socio-economic data, and oversee the deployment of the EWS at local level.
Local communities in the two selected pilot project areas	Local communities in the two selected pilot project areas were to participate in the deployment of the EWS at local level, testing of the flow of information, crowdsourcing and on the integration of climate information into local level development planning. They were the direct beneficiaries of the project.
Tanzania Red Cross Society	Tanzania Red Cross Society, plays an active role in coordinating disaster relief efforts throughout the country. The TRCS was to be involved at local level in the two project districts and in particular in the development of SOPs and standard EW messages at local level
World Vision	World Vision, works in food security and basic human development throughout Tanzania. World Vision was to participate in the project, particularly in the simulation exercise and in conjunction with activities designed to develop EW codes, gather socio-economic data and operationalize the EWS for droughts and floods.

3.1.5 Replication approach

The project has both a national level component focused on the two pilot locations and the pilot river basins. Output 1.1 (see Table 6) is clearly at the national level and hence there is not much focus on its replication. The project design has made provisions to facilitate replication of the other outputs and activities from the pilot districts and sites to the other locations in the country. Some of the provisions in the project design in this regard are as follows:

- Generate of a thorough report on lessons learned to enable replication of project outputs and outcomes in other regions (Activity 2.7.4).
- Development of a lessons learned report including methods for replication and extrapolation of the socioeconomic benefits of EWS (Activity 2.5.4).
- Generation of lessons learnt from the EWS simulation and adaptation planning exercise deployed in each of the two pilot districts.
- Lessons learned and recommendations on replication, including costs and benefits of EWS are available (Output 2.5)

The project design considers that demonstrations of benefits at local level from an effective EWS, increased information and prediction ability on floods and droughts, increased agro-meteorological information, will help replicate and upscale project outcomes to other regions. As such there is nothing wrong with this consideration. However, it needs to be appreciated that preparation of reports and knowledge products alone is not sufficient for replication. Such lessons learnt, good practices and field demonstration need to be disseminated and communicated to the target audiences to achieve the objective of replication. The knowledge dissemination part is clearly missing in the project design. It is recommended that the project design should include the activities targeted as dissemination of the knowledge, case studies and lessons learnt (please see recommendation 2).

3.1.6 UNDP comparative advantage

The project is aligned with UNDP's comparative advantage in the area of capacity building, providing technical and policy support as well as expertise in project design and implementation. Additionally, UNDP has a long history of collaboration with the Government of Tanzania. It has experience managing related projects in the country, including for example the AAP. UNDP had worked with the Government of Tanzania on the integration of climate change issues into planning in the past.

One of the specific advantage of UNDP implementing this project is that the strategic principles that will influence the implementation of this project are the links and synergies with the other similar projects (in Benin, Burkina Faso, Ethiopia, Liberia, Malawi, Sierra Leone, São Tomé & Príncipe, Uganda and Zambia) implemented through UNDP and funded through the LDCF. These 10 projects were designed simultaneously and as such, synergies have been explored at the project design stage. Common indicators have been included in the projects in order to facilitate aggregate results reporting and to allow comparisons between countries. This offered opportunities for joint activity delivery (training and knowledge sharing) which were to be explored and facilitated through UNDP and through a set of common services, including technical support and administrative assistance. The implementation of the project benefited through the common procurement of automated weather station and the flood forecasting model.

UNDP has a high level of experience managing other Least Developed Countries Fund (LDCF) projects in the region, in particular those with an early warning component.

3.1.7 Linkages between the project and other interventions within the sector

As was mentioned before (section 3.1.3), at the time of project design and prior to that a number of projects were implemented /being implemented to address the issue of climate change and adaptation

to climate change. However, either at the project design stage or during project implementation stage the project did not draw linkage with any of the other ongoing interventions. The project was more or less implemented in a solo mode.

3.1.8 Management arrangements

The management arrangements as presented in the Project Document were clearly described and were based on common project management arrangement for UNDP National Implementation Modality. The UNDP was the GEF Implementing Agency. The Prime Minister's Office – DMD assumed the role of Implementing Partner for this project, with the VPO acting as executing partner. Project finances passed through Medium Term Expenditure Framework to ensure national accountability through the normal government procedures and according to UNDP rules and regulations.

The Project has fully followed the management arrangements as described. The UNDP Country Office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system. Project Steering Committee performed as a key decision-making body at a project strategic planning level. The project held regular Steering Committee meetings over the evaluation period mainly focused on progress reporting and planning and revision of the unexpected changes in pilots.

The Project Board/Steering Committee was co-chaired by PMO-DMD and VPO. The PMO was responsible for the implementation of the project, monitoring day-to-day operations, and accountability on financial flows. The VPO was responsible for policy guidance in the virtue of its mandate for policy development and coordination of environment and climate change issues in the country. UNDP being the GEF implementation partner is also the member of the Steering Committee.

In accordance with the provisions in the project design (Project Document), the project was managed through Project Coordination Unit housed within the PMO-DMD. The PCU was comprised of a Project Coordinator (PC) and an Assistant Project Coordinator (APC) who functioned under the supervision of the PMO-DMD and the project steering committee.

3.2 Findings: Project implementation

3.2.1 Adaptive management and Feedback from M&E used for adaptive management

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications.**
- **If the changes were extensive, did they materially change the expected project outcomes?**
- **Were the project changes articulated in writing and then considered and approved by the project steering committee?**
- **Whether feedback from M&E activities was used for adaptive management?**
- **Whether changes were made to project implementation as a result of the MTR recommendations?**

The MTR for the project provided a comprehensive set of recommendations (total 19 recommendations). However, some of these recommendations were generic in nature and did not provide specific action points. One of the reasons for this seems to be the fact that at the time of MTR the remaining time left for implementation of the project was less than a year (project implementation started late, the project got the no cost extension after the MTR).

Given in Table 11 below, are the MTR recommendations and the corresponding management response. Also given in the table ae the comments at the 'Terminal Evaluation of the project.

Table 11: MTR recommendations and actions by the project team

#	Recommendation at MTR	Management Response	Comments at TE
1	The UNDP-GEF must provide the necessary support to Project Management Units to establish an multiannual programming for bridging strategy to executions, clarifying among all executors, the concept and scopes of each expected outcome and outputs; the necessary procedures to achieving them, the key responsibilities linked to necessary collaborations to achieve each outputs and outcomes; a planned timing with compromises, clear milestones and performance indicators whose fulfilment have to be tied to a variable disbursement tranches in depending of performance in fulfilment, in order to ensure basic levels of effectiveness, efficiency, coherence and sustainability in the execution.	UNDP will continue to provide technical support to Project Management Unit, Prime Minister's Office – Disaster Management Department the executor of this project and all implementing patters; Tanzania Meteorological Agency, Ministry of Water and Irrigation, Pangani Basin Water Board and Ruvuma River and Southern Coast Basin Water Board. UNDP will assist the project to come up with multiannual programming for the time left for the project. This program will clarify the roles and scope of each partner in achieving the expected outcomes and output for the time left	Response adequate
2	It is quite necessary to develop the project with a Monitoring and Evaluation System, tailor-made of project current necessities and tied with the disbursements, as well as update the Risk Log in an accurate and coherent with Result-Based Management approach.	The project will strengthen the existing Monitoring and Evaluation System to continue guiding the implementation of the project. The Systems will ensure the progress towards achieving indicators are well captured and contribute to achieve project outcomes. The Monitoring and evaluation will be tied up with disbursement. The project will use result-based management approach to identify the risks associated with this project and update the risk log regularly.	Response adequate but the required follow up actions lacking
3	It highly recommended that the project's executors and managers proceed to review the GEF-TT and fill at the pertinent indicators related with outcome 1.1, 1.2 and 3.2, ensuring that the provided information is reliable, specific, useful and relevant.	The Project will review GEF-TT to fill the pertinent indicators related with outcome 1.1,1.2 and 3.2 to ensure the information are reliable, specific and relevant.	Response and follow up actions adequate
4	To ensure that the financial inputs are driving Project execution toward outcomes, is quite necessary modifying the current system of disbursement from the UNDP to PMO and form UNDP to executors, through performing a result-based financial management (i.e. performance indicators dully tied to annual or semi-annual goals, that allow verification on how the financial management is driving toward outputs and outcomes, and suitable tool to make verifications of fulfilment). Only in this way, the financial planning of budget can be useful to make informed decisions regarding the budget as a financial tool to enhance the performance toward	UNDP will continue using and complying with the Harmonized Approach to Cash Transfer (HACT) frame through the FACE Forms used by project executors for Request for Funding Authorization, Reporting project expenditures and Certification of project expenditures. This will continue improving and addressing the recommendation	Response adequate. No specific action was envisaged

#	Recommendation at MTR	Management Response	Comments at TE
	outcomes and don't lose the trail of a good cost-effectiveness of interventions.		
5	The project report should use a standard format, linked to project result framework, financial performance and work-plan, as well as with performance of each executor.	UNDP will continue building capacities to all project executors and implementing partners on using the second version of the HACT framework standard forms for financial management purposes and therefore ensuring fully compliance of the HACT framework requirements.	Response adequate
6	Elaborate a tool and perform a regular process to systematization of experience, in order to ensure that the lessons learnt will be available to share and enhance Public Policies tools.	The project is accepting the recommendation, a tool will be developed that will help to perform a regular process to systematization of experience, documenting in paper and digital forms the lessons that will be available to share and enhance public policies tools.	Response adequate. Such provisions are already there in the project design
7	Is urgent to work on positive actions to balance gender on project staff and Steering Committee, by integrating specialists on gender and representatives of women groups, respectively. In addition, the managers have to monitoring and reporting effectively the gender aspects of the project.	The project will continue integrating gender considerations basing in Tanzania context, the target set by the government is to attain one third of women participation in decisions making bodies by 2020. The project will see the possibility of adding more members in the Project Steering Committee. The discussion will be undertaken with project executors for gender balance. The project will review the District Management Committee in the pilot sites to consider gender balance. The project will be strengthening project reporting to included gender aspect of the project	Response adequate No specific action was envisaged
8	Perform credible, reliable, useful and relevant actions to identify legal, cultural or religious constraints to women's participation in the project, in order to perform accurately actions to encourage and involve women and girls in the project. To do this, perform a specific programming of actions and budgeting to increase aware the women and girls about their involvement in this project and to facilitate actions performed directly by women and girls.	The recommendation is accepted, the project will review existing and upcoming plans to include more activities that will encourage more involvement of women and girls in the execution the project interventions.	Response adequate. No specific action was envisaged
9	Steering committee should increase their attention on about project outcomes as a direct responsibility. Should provide a clear strategic vision to guide technical and local levels, and thus clear the path to successful. To save time on this and not distract them from their essentials functions, the steering committee can resort to high-	As from the forthcoming meeting, the project will review the Project Steering Committee common agenda to increase more attention about the project outcomes to be one of the PSC direct responsibility	Response adequate. No specific action was envisaged.

#	Recommendation at MTR	Management Response	Comments at TE
	level technical assistance to advise in this regard.		
10	Perform the accounting of co-financials commitments, in order to ensure its strategic use in sustainability of outcomes and in terms of project transparency and accountability. The Steering Committee may need to perform meetings, to align financing priorities and annual work plans to their co-financial responsibilities.	The project will be quantifying the government and its agencies/ministries in-kind co-financing on quarterly basis for project transparency and accountability. Also, the project will continue, through the PSC, to request the government through the Implementing Partners to include the preventive and maintenance operation costs in their annual budgets a way of ensuring sustainability the project interventions.	Response adequate. However, the required action have not been taken
11	To reinforce initial benefits, will be necessary to work hard on developing interdisciplinary knowledge, the capacity to work in team and deepen inter-institutional work process, in order to create the capacities to monitoring and forecasting droughts and floods.	The project will continue to reinforce initial benefits as per this recommendation, developing interdisciplinary knowledge and establishing capacity to work in team to deepen inter-institutional work process that will assist achieving the project outcomes	Response adequate. No specific action was envisaged
12	In this new phase that is opening after MTR and to expand on-progress toward the success, is quite necessary that the managers work hard in order to increase the stakeholder's mobilization (sensitization, meetings, workshops and simulations), especially of those who has execution responsibilities, given the characteristics that must assume the project's implementation in next months.	The recommendation is accepted, the project team, managers, technical working groups and Project Steering Committee will work hard to accomplish the project intervention as per review made by MTR to increase the stakeholders' mobilization, accomplishing the pending activities so that the project achieve the project outcomes in the remained time.	Response adequate. No specific action was envisaged
13	To expand on-progress success, Actors as Ministry of finance and economic affairs, the Tanzania Private Sector Foundation (TPSF) and social organizations (as Women's groups, NGO´s groups, etc.), are very important factors to be incorporated in project as source of feedback, information and resources. At local level, Disaster Management Committees, Producer Groups and Water User Associations have to be integrated with much more decision.	The project will continue to work in collaboration with all actors such as Ministry of Finance and Planning, the Tanzania Private Sector Foundation (TPSF) and social organizations as source of feedback information and resources. Similarly, more involvement of Disaster Management Committees, Producer Groups and Water User Associations at local levels will be involved for much more decision to inform the project and push for project success.	Response adequate. No specific action was envisaged
14	Define a working agenda with media at national and local level, in order to communicate, make transparent and facilitate the accountability, as well as in order to communicate at Tanzanian society, all that you achieve with this project to benefit people. Involve much more political authorities in these actions, in order to increase the	The project will continue to work with local media at national and local level as means for communications, transparent and accountability in disseminating climate information and products to Tanzania society. The project will continue involving more political authorities in execution of project	Response adequate and the required action have been taken

#	Recommendation at MTR	Management Response	Comments at TE
	project's ownership and the feeling that project success is their own success. Reinforce these objectives by creating a web presence.	intervention to increase the project's ownership and sustainability of intervention	
15	UNDP is a great sink of information and source of knowledge. In this sense, is highly recommended that UNDP increase its efforts to support at Executing Agency and Implementing Partners, through mobilizing suitable technical assistance to the upcoming new phase.	The project will continue benefiting from Multi country Support Regional Program in strengthening Climate Information System in Africa that have designed to provide cost effective technical support, procurement support, regional coordination and knowledge sharing. The technical support is covering meteorological, climate and hydrological observing and forecasting systems; climate change risk management and viable communication system or Process for disseminating information, the use of alternative cost-effective technologies and engagements with the private sector. The regional program also provides opportunity of data and information sharing among countries and strengthen the use of regional centres. UNDP Tanzania will continue support this project by providing frequent technical support, meeting with partners and regularly visiting interventions at the sites. UNDP will also coordinate the hiring and procurement process of technologies and consultancies needed by the project.	Response adequate
16	To reinforce initial benefits from output 1.1 and output 1.2, MTR mission suggest: In November 2016 and base of a validated EW and Water Balance criteria: • 36 new AWS are installed, fully working and transmitting data accurately toward the data share server, where DMD, MoW, MALF, TMA, PBWB and RSCBWB, can access data. • 15 new Mini Automatic Weather Station, 30 new hydrometric stations and 20 new Automatic Rain gauge and Standard Rain gauge, are installed, working and transmitting data accurately toward the data share server, where DMD, MoW, MALF,	The proposed interventions will be implemented by project to quick achieve the project outcomes. The project will review the annual plans to reflect these prosed interventions. hydrometric stations and 20 new Automatic Rain gauge and Standard Rain gauge, are working and transmitting data accurately toward the data share server, where DMD, MoW, MALF, TMA, PBWB and RSCBWB, can access data	Response adequate

#	Recommendation at MTR	Management Response	Comments at TE
	TMA, PBWB and RSCBWB, can access data. In July 2017: • 36 new AWS are working and transmitting data accurately toward the data share server, where DMD, MoW, MALF, TMA, PBWB and RSCBWB, can access data. • 15 new Mini Automatic Weather Station, 30 new hydrometric stations and 20 new Automatic Rain gauge and Standard Rain gauge, are working and transmitting data accurately toward the data share server, where DMD, MoW, MALF, TMA, PBWB and RSCBWB, can access data. In December 2017, • 36 new AWS are working and transmitting data accurately toward the data share server, where DMD, MoW, MALF, TMA, PBWB and RSCBWB, can access data. • December 2017, 15 new Mini Automatic Weather Station, 30 new		
17	To make a suitable use of acquired equipment around output 2.2, emphasizing the credibility, usefulness and relevance of 24/7 emergency unit, MTR mission suggest: • Review the document design of 24/7 Emergency Operation Centre, in order to: o Develop a section that incorporate lessons learned through similar activities regionally and in neighbouring countries. o Develop a section identifying clearly (i) the service to be provide/delivered, (ii) the procedures to deliver those services and (iii) the profile of the permanent staff and the staff who will be provide by sectorial institutions in emergency case. o Develop an architectural design for the room, in base of international standards and learned lessons. o Enhance the financial sustainability section, in order to provide a clear, direct and suitable guidance to develop an EOC, step by step, in base on real sustainability. • In base of a reviewed 24/7 Emergency Operation Center design, proceeds to recruit and train staff. • Proceeds to acquire and install equipment.	The project accepts the recommendation and will implement the listed actions.,	Response adequate and the required action have been taken

#	Recommendation at MTR	Management Response	Comments at TE
	• Design and execute a "desk simulation" to support District emergency response for drought and floods. • Up-date the TEPRP for droughts and floods, developing a specific SOP for different kinds of floods and drought.		
18	Amend outcomes indicators as proposed on section 4.1.2 in order to ensure its credibility specificity, reliability, usefulness and relevance in relationship with the outcomes. In this regard and to ensure the outcomes achievement in the short remaining time, an unavoidable step is reorganizing the project's outputs, placing of performance indicators for them, reformulate the actions and place milestones for each action. In this sense, MTR mission recommend a complete reformulation of work-plan 2016/2017, in order to: • Concentrate the work on prioritizing and execute only those essentials actions that leading directly to achieve the outcomes. • Ensure that the exit actions and project's closure will perform in timely manner.	The project accepts the recommendation and will implement the listed actions.	MTR has recommended changes in the indicators and the corresponding targets at the Outcome level (both for Outcome 1 and Outcome 2). These recommendations were not incorporated in the result framework of the project
19	To support at managers and executors in their race to achieve the outcomes, the MTR mission recommends to pack the Outputs in three different Procurement Lots, in order to conduct its execution in a concentrated manner, as soon as possible, avoiding the effort dispersion. By hiring these three packages, the probabilities to achieve the outcomes with quality and basic sustainability, can be real in the short time that remains. It is very important that all lots be hired before November 2016. This mean that all ToRs and procurement bases, as well as the procurement process to hire the lots, has to be executed accurately (as a clock) by the managers and executors. Is quite recommends that managers and executors can receiving supported by an international technical assistance, with thematic experience on outcome 1 and 2, as well as with experience in project management, to help them in facilitate the technical discussions, elaborate each pack of ToRs, define the necessary tools to supervise the contracts and make the payments (tied by performance),	The project accepts the recommendation and will implement the listed actions.	Response adequate

#	Recommendation at MTR	Management Response	Comments at TE
	support the PMU to face any mishap and push the lots forward. To do this and in the line of amended outcomes indicators (see section 4.1.2), MTR mission suggest the following Indicative Procurement Lots:		

Monitoring and Evaluation activities has not been that strong. Quarterly reports were prepared only for three of quarters for the entire duration of the project implementation. Similarly, PIR was prepared only for the year 2017. The only credible action towards M&E is the MTR of the project. The MTR also pointed out the shortcomings in the M&E activities (although no recommendations are made). Thus, any possible opportunity for adaptive action due to M&E was largely lost.

3.2.2 Partnership arrangements

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Were there adequate provisions in the project design for consultation with stakeholder?**
- **Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board?**

As mentioned in section 3.1.4, the project design had adequate provisions for stakeholder consultation and participation. The project has been implemented under 'National Implementation Modalities (NIM)', with Vice-President's Office (Department of Environment) and Prime Minister's Office (Disaster Management Department) as the Executing Agency/Partners. Other responsible parties for the project implementation are TMA, Ministry of Water and the Ministry of Agriculture. The Water Basin Authorities (through the Ministry of Water) also participated in project implementation.

Implementation of the project has been guided by the 'Steering Committee', which is responsible for making management decisions for the project. While the PMO was responsible for implementation of the project, monitoring day-to-day operations, and accountability on financial flows, the VPO was responsible for policy guidance in the virtue of its mandate for policy development and coordination of environment and climate change issues in the country. Other ministries and the TMA acted as Responsible Partners (RP) for specific components of the project. The Steering Committee for the project comprised of the members from the project partners and other stakeholders as follows;

- PMO-DMD (co-chair)
- VPO-DOE (co-chair)
- TMA (Responsible Partner)
- MoW (Responsible Partner)
- MAFS Crop/Irrigation Department (Responsible Partner)
- Ruvuma river and Southern Coast Basin Water Board (Responsible Partner)
- Pangani Basin Water Board (Responsible Partner)
- Ministry of Livestock and Fisheries (Participating member)
- TCRA (Participating member)
- UNDP (Project Assurance)

The project established an effective partnerships arrangement for implementation of the project with relevant stakeholders. The partnership arrangements which were established has been elaborated in Table 10.

3.2.3 Project Finance

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources?**
- **What are the reasons for differences in the level of expected and actual co-financing?**
- **To what extent project Outcomes supported by external funders were well integrated into the overall project?**
- **What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing?**
- **Whether there is evidence of additional, leveraged resources that have been committed as a result of the project?**

The project design has provided for a significant amount as co-financing contribution for the project. Table 12 provides the details of the provisions for financing of the project.

Table 12: Project Budget and Sources of Funds[8] (Figures in USD)

	Year 1	Year 2	Year 3	Year 4	Total
DMD	345,000	345,000	345,000	345,000	1,380,000
TMA	5,143,750	5,143,750	5,143,750	5,143,750	20,575,000
MoW	152,500	152,500	152,500	152,500	610,000
UNDP	150,000	150,000	150,000	150,000	600,000
LDCF	1,251,445	1,704,455	610,100	434,000	4,000,000
TOTAL	7,042,695	7,495,705	6,401,350	6,225,250	27,165,000

The contribution from the parties other than LDCF was in the form of co-financing. The co-financing considered significant investment by the national government in the development of complete disaster management architecture, including the operations of the climate monitoring system.

As was pointed out during the MTR as well, there is no tracking of co-financing commitment described in 'Project Document'. However, there are in-kind co-financing contributions covering office space, utilities, communications, management and provision of technical experts.

As per the funding sources mentioned in the 'Project Document', the co-financing contribution by different government ministries/agencies/ departments (TMA, DMD, MoW) was to come as in-kind. Table 13 provides the details of the in-kind funding, which was to be provided by different government agencies.

Table 13: Co-Financing committed by Government Agencies at the time of project approval[9]

Government Agency	Purpose of Co-Financing	Amount (USD)
Tanzania Meteorological Agency	• Ensures current operations and maintenance of the climate monitoring system • Delivers weather forecasts, climate forecasts, climate models and early warnings • Acts as the main climate data provider for all sectoral clients • Collects and conserves climate data	20,575,000
Prime Minister's Office – Disaster Management Department	• Establishes the institutional legal and regulatory framework for disaster management • Manages and coordinates DRM and Disaster Response • Establishes and implements the Tanzania Emergency Preparedness and Response Plan • Coordinates with local disaster management authorities, district councils and communities on disaster risk reduction and relief • Emits Standard Operating Procedures and guidelines	1,380,000

[8] As per Project Document

[9] As per Project Document

	• Emits Early Warnings	
Ministry of Water and Irrigation / Water Basin Boards	• Monitors, mobilizes and manages water resources in the country • Works with local communities to effectively manage water • Undertakes infrastructural works to mobilize, manage and conserve water • Undertakes river and surface water monitoring and flood response	610,000

One may argue that the purpose of co-financing mentioned are the regular operations carried out by these government agencies and as such are not the in-kind co-financing contribution for the project. However, these have been provided as in-kind contributions by different government agencies. As the activities mentioned in the above table have been performed by these government agencies, there has been the required in-kind contribution by the government agencies. In the absence of monitoring and tracking of the co-financing, the in-kind contributions by these agencies could not be quantified.

The project outcomes were fully supported by funding from LCFD (administered by GEF). The in-kind funding support provided by the government agencies for different purposes (as mentioned in Table 13 above) supported the on the ground implementation of different activities to achieve the targeted outcomes of the project. The project did not leverage any additional funds and investments from external sources.

3.2.4 Monitoring and evaluation: design at entry

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Is the M&E plan well conceived at the design stage?**
- **Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives?**
- **Was the M&E plan sufficiently budgeted and funded during project preparation and implementation?**
- **How effective are the monitoring indicators from the project document for measuring progress and performance?**

A monitoring and evaluation plan was put in place at the time of the design of the project. There was a provision to review the plan at the time of project inception. As per the plan, the project was to be monitored through the periodic quarterly and annual monitoring. There were provisions for preparation of the APR / PIR. The APR/PIR combines both UNDP and GEF reporting requirements. Provisions were also made in the project design for an independent MTR and the TE. The GEF Focal Area Tracking Tool for climate change adaptation was also prepared at the time of CEO endorsement and before the MTR and at the TE. As per the plan stipulated in the project document, the project team was to prepare a Project Terminal Report, to summarize the results achieved (objectives, outcomes, outputs), lessons learnt, problems met and areas where results may not have been achieved. The set of indicators to be monitored and the corresponding targets were provided in the log-frame of the project. The results of the monitoring and evaluations were to be provided to the project board.

As is evident, the M&E plan at the design stage was well conceived. The plan was well articulated and was sufficient to monitor results and track the progress toward achieving the objectives, except for some issues with the indicators used. Adequate provisions were made in the budget for monitoring and evaluation activities. **The M&E design at entry has been rated as Satisfactory.**

3.2.5 Monitoring and evaluation: implementation

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Whether the logical framework was used during implementation as a management and M&E tool?**
- **What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports?**
- **What has been the effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff?**
- **What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs)?**

- **Whether APR/PIR self-evaluation ratings were consistent with the MTR. If not, were these discrepancies identified by the project steering committee and addressed?**

As mentioned before, the Monitoring and Evaluation activities have not been that strong. At the time of TE mission only three quarterly reports for the entire implementation period of the project could be shared. PIR was provided only for the year 2017.The MTR also pointed out the shortcomings in the M&E activities. The possible opportunity for adaptive action due to M&E was largely lost. The project team prepared the end of the project report summarizing the results achieved (objectives, outcomes, outputs), lessons learnt, problems met and areas where results may not have been achieved. The project team prepared half yearly reports regularly and shared the same with the project steering committee. **M&E Plan Implementation has been rated as Marginally Satisfactory. Overall quality of M&E is rated as Marginally Satisfactory.**

3.2.6 UNDP and Implementing Partner / execution coordination, and operational issues

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Whether there was an appropriate focus on results?**
- **Was there adequate UNDP support to the Implementing Partner and project team?**
- **Quality and timeliness of technical support to the Executing Agency and project team**
- **Were the management inputs and processes, including budgeting and procurement adequate?**

The management arrangements as presented in the Project Document had been clearly described and were based on common project management arrangement for UNDP National Implementation modality. The project has fully followed the management arrangements as described. The Executing Agency/Implementing Partner role was assigned to the Prime Minister's Office (Disaster Management Department), with the VPO acting as executing partner for the project. Day to day implementation of the project was carried out a project co-ordinator, who in term was assisted by a project implementation team.

UNDP country office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system. The Project Steering Committee performed as a key decision-making body at a project strategic planning level. **Quality of UNDP Execution has been rated as Satisfactory.**

Although project inception happened in a timely manner, there was an initial delay of about 9 months in the start of the project implementation. It was due to time taken by UNDP for staffing. The staffing took time as procedures are required to be followed in the process of recruitment of the project staff. The PMU could be established only about 9 months into the project implementation. The start-up delay was followed by a delay of about 3 months to provide the funds for project implementation.

The Implementation Modality (NIM) for this project was good and given the focus of the project on strengthening of capacity of the country for weather forecasting and early warning in terms of the required hardware (weather stations, river gauges, servers) and software (training, flood forecast models), TMA and the water basin authorities were the appropriate institution within the government institutions to act as the implementing partners. The project executing agencies collaborated effectively with its partners in the project. Project management and administration has been satisfactory. **The quality of Implementation by the Implementation Agency has been rated as Satisfactory.**

3.3 Findings: Project Results

3.3.1 Attainment of Objectives

The main questions for TE were: (please see Annex B for the evaluation questions)

- **What has been the achievements of the objectives against the end of the project values of the log-frame indicators, with indicators for outcomes/outputs, indicating baseline situation and target levels, as well as position at the close of the project?**

A summary of the attainment of the overall project objectives is presented in this section of the report. Achievement of different Outcomes of the project in terms of indicators has been presented first, which is followed by the presentation regarding the achievement of project objectives. This is because the achievement of the project objectives has been assessed both in terms of the indicators (for project objectives as given in the log-frame) and in terms of the achievement for the two planned outcomes of the project.

As per the requirements, the attainment of results' evaluation has been carried out for the two individual outcomes of the project as well. The evaluation of the attainment of results has been carried out in terms of the indicators of the log-frame. Wherever relevant, the reasons for non-attainment of the target values of the indicators have also been provided.

The mandatory ratings for the attainment of overall results has also been provided. Although the rating is not mandatory for achievement against each output and each iindicator, the rating has been provided. This has been done to facilitate the ratings for the individual outcomes of the project and the project at an aggregate level. The evaluation of the attainment of overall results has been carried out keeping in mind the main questions for TE, as given in the box at the beginning of this section

3.3.1.1 Attainment of objectives– Outcome 1

Rating: Moderately Satisfactory

As per the project design (Project Document) the expected outputs of Outcome 1 of the project were as given below.

Output 1.1: 36 Additional automated stations generate hourly climate data
Output 1.2: Real-time hydrological and river flow data available for major rivers in Pangani and Ruvuma Basins
Output 1.3: Flood forecasting models, flood forecast management systems and flood risk maps are developed for each major river within the Pangani and Ruvuma Basins
Output 1.4: Hydrological and climate data collected from various monitoring systems is integrated into a harmonized database that is accessible to sectoral users

Indicative activities which were to be carried out under different outputs of Outcome 1 are as given in Table 14. Also given in the table is the status of implementation of the activities and the outcome at the time of the terminal evaluation.

Table 14: Activities Planned under Outcome 1, status of Implementation and Rating at TE

Output	Activities	Status of implementation	Rating at TE[10]
1.1 36 additional automated stations generate hourly climate data	1.1.1 Procurement 36 Automated weather station 1.1.2 Siting and installation of AWS, including protective infrastructure 1.1.3 Acquisition of 2 additional servers for data storage and transmission 1.1.3 Train 6 TMA instrumentation specialists in the operation, calibration and repair of new stations and telecommunications facilities	Installation of 36 Automatic Weather Stations (AWS) across the country. The stations are connected to server in Dar es Salaam and transmission of data to TMA is made after hourly. The project procured 2 field laptops for calibration and 4 servers for data transmission Eight new AWSs stations are connected with national fiber optic cable for meteorological operations and data transmission. Other new AWSs use network of cellular companies for data transmission Six Meteorological Engineers from Tanzania Meteorological Agency and 2 hydrologists from Ministry of Water and Irrigation were trained for maintaining of new installed AWS, repairing, calibration of AWS sensors and telecommunications.	**HS**
1.2 Real-time hydrological and river flow data available for major rivers in Pangani and Ruvuma Basins	1.2.1 Procure, site and install 20 hydrological stations, 20 river gauges and 20 rain gauges for monitoring river levels in Pangani and Ruvuma basins 1.2.2 Procure 1 computer, 1 server, and 1 modem for each Water Basin Office for local flood forecasting and data transmission	The project has constructed 10 hydrological stations in Pangani basin, 5 hydrological stations in Ruvuma and southern Coast basin, 10 min Automatic Weather Stations in Ruvuma and Southern Coast Basin and 5 Min Automatic Weather Stations in Pangani basin. Five additional hydrological stations for Pangani basin has already been procured but are yet to be installed. Out of the 10 hydrological stations at Pangani, five are transmitting data automatically, but for the other five (float type) the automatic data transmission system doesn't work, and the data has to be retrieved manually. Trained 14 hydrologists on installations, calibration, repairing and maintaining of the hydrological and Min Automatic Weather Stations installed in Pangani, Ruvuma and Southern Coast Basins. Procured one server and 2 field computers for each basin to support data storage and transmission.	**MS**
1.3. Flood forecasting models, flood	1.3.1 Acquire flood forecasting software, tools and methodologies	BRLi Company Limited (a France company) was hired to install the hydrological solutions for Integrated	**U**

[10] Rating Scale; 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4.Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

Output	Activities	Status of implementation	Rating at TE[10]
forecast management systems and flood risk maps are developed for each major river within the Pangani and Ruvuma Basins	1.3.2 Develop flood forecasting models using rainfall and river flow data in Pangani and Ruvuma Basins 1.3.3 Develop flood risk maps in Meru and Liwale districts using available historical data (in TMA and WBs)	Water Resources Management System in Ruvuma and Pangani basins. However, there is no significant progress. The tasks commenced in June 2017 with an inception meeting and a visit by the officials of BRLi Company. During the visit the officials of the company met with key stakeholders and identified the needs, establishing inventories of available stations, assessing data quality controls, transmissions systems and data storage. No significant progress for this Outcome is reported after the inception report and the initial visit by the officials of the vendor company. The latest (11 June 2018) communication from the company has pointed out the existing data gaps.	
1.4 Hydrological and climate data collected from various monitoring systems is integrated into a harmonized database that is accessible to sectoral users	1.4.1 Rescue, digitize and archive relevant available historical data from all ministries relevant to the 2 pilot districts to be integrated in the global database. 1.4.2 Establish a working group of TMA, MoW, MAFS and DMD, and Water Basin Boards to develop a data sharing platform and agreements, including cost recovery modalities 1.4.3 Establish an integrated database of climate/hydro information that can be accessed by sectoral users in real time, housed in TMA 1.4.4 SOPs developed for the collection of new observational data made possible through this and other projects focused on supporting data collection	Supported data rescuing, digitization and archiving of historical data relevant for Arumeru and Liwale districts at TMA. Procured Necessary equipment such as computers, scanners, printers, Cameras, furniture, software and printers for TMA. Established a national integrated database for climate and hydrology information. The established database is providing a central, unified and coordinated information sharing platform for the stakeholders in the climate monitoring system Established Memorandum of Understanding for enhancing the collaboration in the management and operation of hydro-meteorological stations including data sharing between Ministry of Water and Irrigation and Tanzania Meteorological Agency and put into action. Trained 14 IT specialists for Maintaining and support operation of new Integrated database for Climate and Hydrology Information. Trainees were from Prime Minister's Office, Ministry of Water and Irrigation, Ministry of agriculture, Tanzania Meteorological Agency(TMA), Pangani Basin Water Board and Ruvuma River and Southern Coast Basin Water Board Developed Standard Operating Procedures for the collection of observational data to support data collection	**S**

As can be seen from the Table above all the activities for Output 1.1 has been carried out successfully without any shortcoming. Accordingly, the achievement against Outcome 1.1 has been rated as Highly Satisfactory.

The idea of Output 1.2 was to provide for hydrological monitoring equipment for the WBAs in Ruvuma and Pangani to facilitate generation of data required for local flood monitoring and forecasting, which will all be deployed in the two basins (Outcome 1.3). As can be seen from the Table above the actual achievement against this outcome has fallen short of what was specified in the Project Document. Due to the shortfalls, the objective of getting the real-time field data automatically has been hampered. Also, due to the reduction in the number of actual spots / data points the accuracy and the timeliness of the flood forecasts made using the flood forecasting model (Outcome 1.3) will be impacted. Due to this reason, achievement against Outcome 1.2 has been rated as Moderately Satisfactory.

Output 1.3 was to support development of flood forecasting in the Ruvuma and Pangani basins, including the sub-catchment piloting areas. The idea was to develop flood forecasting models and flood risk maps using climate and hydrological data (including data coming in from the new monitoring stations acquired in Output 1.2). This outcome was targeted at enabling the 'Water Basin Authorities' perform various tasks using flood management software, including: real-time local flood forecasting based on hydrological and precipitation data (rainfall-runoff models, or hydrological models), development of GIS-based flood risk maps and models using varied parameters to optimize decision making, better management of hydraulic structures (e.g. dams), and environmental monitoring. Models were to use the available historical climate and hydrological data for the districts and the basins.

BRLi Company Limited (a French company) was hired to install the hydrological solutions for Integrated Water Resources Management System in Ruvuma and Pangani basins. However, there is no significant progress. The tasks commenced in June 2017 with an inception meeting and a visit by the officials of BRLi Company. During the visit the officials of the company met with key stakeholders and identified the data needs and sources, established the inventories of available stations, assessed data quality controls, transmissions systems and data storage. No significant progress for this Outcome is reported since the inception report and the initial visit by the officials of the vendor company. The latest (11 June 2018) communication from the company has pointed out the following data gaps.

- Hydrological observation data via NDCH
- TMA forecast daily output

Assuming that all the data would be available by August 2018, BRLi has committed the delivery for this Outcomes by November 2018. Clearly, nothing tangible could be achieved for Outcome 1.3 of the project within the implementation time lines of the project. Achievement beyond the implementation timelines of the project and achievement of the outcome is not certain. Accordingly, the achievement for Outcome 1.3 of the project is rated as Unsatisfactory. As Outcome 1.3 is one of the very important outcomes of the project, it is recommended that institutional arrangements may be made beyond the project implementation timelines to ensure proper delivery against this outcome (including the calibration of the flood forecasting model, training of the officials of the basins on the use of the model etc.) (Please see recommendation 5).

Output 1.4 was to address the existing gaps in data coordination and data sharing for development, deployment and use of flood forecasting models at the two pilot districts (Arumeru and Liwale). Most of the activities envisaged to achieve this outcome has been achieved successfully. Thus, the achievement against this output has been rated Satisfactory.

Table 15 provides details of the achievement of the results for different indicators for Outcome 1.

Table 15: Results: Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods

Indicators	Baseline	Target	Status at MTR	Level at PIR Self-Assessment[11]	TE Rating
Indictor 1: % of national coverage by climate monitoring system	50% of the territory is covered by some form of monitoring, but only 30% by AWS.	75% of national territory is covered by an automated network	Rating: MS On target to be achieved About 50% of equipment is installed.	**Achieved**	**S** (for details please see the write up after this Table)
Indicator 2: Frequency of data transmission and reception of current weather and river levels in TMA and the WBAs	River stations are read manually every 2 hours during rainfall but transmitted at various frequencies depending on the observer's capacity, automatic river gauges transmit every 30 minutes. TMA network operates at various frequencies, with most rapid transmission being hourly from AWS and slowest being daily manual readings transmitted on a weekly basis.	Data from river stations transmitted every three hours to TMA, every 30 minutes to the WBAs; Data from automatic weather stations received by TMA every three hours' basis and from manual stations on a daily basis	Rating: MS On target to be achieved About 50% of equipment is installed.	**Achieved**	**MS** (for details please see the write up after this Table)

The project has successfully installed 36 new automated weather stations (Output 1.1) as was envisaged in the 'Project Document'. Although the percent increase in the national territory covered is not known, it is believed that as per the provisions in the 'Project Document' the installation of new automated weather stations would have achieved the target of 75%. Thus, the achievement against indicator 1 is rated as Satisfactory.

Indicator 2 is directly related to the objective of Outcome 1 of the project, in terms of the capacity of TMA and 'Water Basin Authorities' to forecast flood in the two pilot districts. As mentioned, the actual achievement against the envisaged level of receipt of automated data from the hydrological stations and river gauges (Output 1.2) has fallen short of what was specified in the Project Document. The project has constructed 10 hydrological stations in Pangani basin, 5 hydrological stations in Ruvuma and southern Coast basin, 10 min Automatic Weather Stations in Ruvuma and Southern Coast Basin and 5 Min Automatic Weather Stations in Pangani basin. Five additional hydrological stations for Pangani basin have already been procured but are yet to be installed. Also, due to reduction in the number of actual spots /data points, the accuracy and the timeliness of the flood forecasts made using the flood forecasting model (Output 1.3) will be impacted. Further, there is no achievement towards deployment of flood forecasting model (Output 1.3), due to which the objective of enhancing the capacity of the authorities to forecast and monitor the floods is only partially achieved. Based on this the achievements against Indicator 2 have been rated as 'Moderately Satisfactory'.

Based on the achievements against different outputs and indicators for Outcome 1, the achievement against Outcome 1 is rated as 'Moderately Satisfactory'.

3.3.1.2 Attainment of Objectives - Outcome 2

[11] Self-Assessment by Project Team - PIR 2017

Rating for Outcome 2: Satisfactory

The objective of Outcome 2 of the project was efficient and effective use of hydro-meteorological and environmental information for making early warnings and long- term development plans. By project design, Outcome 2 was to draw on Outcome 1and the pilots to demonstrate early warning systems and prepare ground for replication of such early warning systems for other locations in the country. Due to lacking successful demonstration of early warning system, the achievements for Outcome 2 have also been impacted. However, for the purpose of the Terminal Evaluation, the assessment regarding achievement of results of Outcome 2 has been done in terms of the achievements for different outputs and the achievements against the indictors provided in the results framework. As per the project design (Project Document) the expected outputs of Outcome 2 of the project were as given below.

Output 2.1: Standard Operating Procedures for droughts and floods specifying EW codes, communications channels, roles and responsibilities and emergency procedures
Output 2.2: An operational emergency operations unit that coordinates EW emission and DR activities for the country, based on SOPs
Output 2.3: One EWS simulation and adaptation planning exercise deployed in each district generates lessons learned for upscaling and replicating
Output 2.4: A crowd sourced hazard feedback platform is installed
Output 2.5: Lessons learned and recommendations on replication, including costs and benefits of EWS are available
Output 2.6: Climate Change and Climate Hazards included in local development plans and land use plans in Liwale and Meru districts
Output 2.7: A plan for the sustainable financing for the operation and maintenance hydro-met network is developed and nationally approved

Indicative activities which were to be carried out under different outputs of Outcome 2 are as given in Table 16. Also given in the table is the status of implementation of the activities and the outcome at the time of 'Terminal Evaluation'.

Table 16: Activities Planned under Outcome 2, status of Implementation and Rating at TE

Output	Activities	Status of implementation	Rating[12]
2.1 Standard Operating Procedures for droughts and floods specifying EW codes, communications channels, roles and responsibilities and emergency procedures	2.1.1 Assess efficiency of available explicit and implicit operating procedures and draw lessons from available guidelines in Tanzania and other countries in the region 2.1.2 Develop Standard Operating Procedures for droughts and floods in consultation with all partners at national and local level, including NGOs and the media 2.1.3 Develop Early Warning and Agro-meteorological codes (including visual and graphic codes) for easy dissemination and interpretation	• Completed study on assessing the efficiency of available explicit and implicit operating procedures for issuing early warning; • Facilitated the hazard analysis for Liwale and Arumeru Districts to determine the possible responses and actions to be undertaken to reduce the impact of floods and droughts and strengthening the early warning systems in the respective districts; • Developed the Rural Vulnerability Capacity Assessments reports for Arumeru and Liwale Districts; Developed Emergency Preparedness and Response Plans (EPRPs) and Standard Operating Procedures (SOP) for managing droughts and floods for Arumeru and Liwale districts.	**S**

[12] Rating Scale; 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4.Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

Output	Activities	Status of implementation	Rating[12]
2.2 An operational emergency operations unit that coordinates EW emission and DR activities for the country, based on SOPs	2.2.1 Complete a feasibility study and institutional setup for the 24-hour emergency operations centre (EOU) within PMO-DMD including institutional considerations, financial sustainability issues, location, staffing 2.2.2 Recruit and train staff on the Standard Operating Procedures and on other functions of the EOU. 2.2.3 Acquire and install equipment for the operations of a 24-hour operating emergency unit within PMO-DMD	• Completed a study which established grounds for establishing an Emergence Operation unit (EOU) within the Prime Minister's Office (PMO) • The Prime Minister's Office secured the required space at the Ministry of Home Affairs for establishing an Emergence and operation Unit • Acquired the required equipment of operations of emergency operations unit. • Developing the Standard Operating Procedures to support the operation of EOU • Identification of the potential partners and stakeholders in Disaster Risks Management to be involved in the operation of EOU • Trained the partners and stakeholders on the function of the developed SOP • Deputed staff from different department and trained them for operations of EOU	**S**
2.3 One EWS simulation and adaptation planning exercise deployed in each district generates lessons learned for upscaling and replicating	2.3.1 Mobilize local disaster management committees and CBOs to participate in the simulation exercise and to designate participants in the crowdsourcing, through consultations and training 2.3.3 Develop emergency hazard scenarios and simulations 2.3.3 Working with District/ward Disaster Management Committees and local NGOs and CSOs, test system of EW Codes and SOPs; 2.3.4 Field visits and stakeholder consultations to understand how users of early warning advisories and warnings use the information for managing climate and weather-related risks and how their decision frameworks affect the interpretation of advisories and warnings	• Facilitated mobilisation meetings to introduce the project to beneficiaries and key stakeholders in the two project pilot districts namely Liwale and Arumeru; • Developed the guidelines for local Early Warning systems simulation (EWS) and facilitated the table top simulation exercises to Arumeru and Liwale Districts; Tested the function of early warning systems using the developed guidelines; • Tested the communication pathways on the Management of Floods and drought from National to local level.	**U** (For details please see the explanation provided in the paragraphs after this Table)
2.4 A crowd sourced hazard feedback platform is installed	2.4.1 Acquire, set-up and distribute mobile communication technology to designated volunteers (50 per district)	• Project procured 200 smartphones and distributed equally to small holder's farmers in Arumeru and Liwale Districts • 810 small holder farmers from Arumeru and Liwale Districts were	**MS**

Output	Activities	Status of implementation	Rating[12]
	2.4.2 Provide local training and awareness raising to platform participants and Users 2.4.3 Develop a set of graphic messages and codes for early warning and agro-meteorological information 2.4.4 Roll-out the crowd-sourced platform through training and technical support during the EWS simulation exercise 2.4.5 Training for local media, CSOs and NGOs on dissemination and interpretation of EW and climate information, including gender-based associations.	connected with farmer SMS system • A group comprising of 122 community volunteers was provided training on collection of climate data and is now providing the sharing point of climate information and provide feedback on climate hazards to respective District Councils and District Disaster Management Committees • Facilitated training to local media, Community Based Organizations, gender-based organizations and Non-Government Organizations in project regions	
2.5 Lessons learned and recommendations on replication, including costs and benefits of EWS are available	2.5.1 Gather socio-economic data in Meru and Liwale including available climate vulnerability data; 2.5.2 Analyse potential losses at short, medium and long term, from the simulated hazards, including direct and indirect socio-economic impacts, and extrapolate data; 2.5.3 Analyse economic costs and benefits of an early warning system at local level including data on economic losses avoided from the simulation exercise; 2.5.4 Develop lessons learned and recommendations report including methods for replication and extrapolation of the socioeconomic benefits of EWS	• The project facilitated the study that focused on collecting survey data on the use of climate/weather information and livelihoods options (agriculture, livestock, fisheries etc.) to estimate the impact of climate information on income and effectiveness of warning of floods, droughts and severe weather in Tanzania, the study also provided the costs and benefits of adaptation alternatives, forecasting climate change-related impacts on the agriculture sector, and modelling supply and demand of environmental goods in light of climate change; • The project facilitated the study that analysed economic costs and benefits of an early warning system at local level including data on economic losses avoided from the simulation exercise; • The project also facilitated the study that extracted lessons learned from CIEWS Project implementation by gathering local data on productivity, livelihoods, infrastructure assets, and undertaking assessment of economic productivity in Liwale and Arumeru districts.	**S**
2.6 Climate Change and Climate Hazards included in local development plans and land use plans in	2.6.1 Produce policy briefs on the impacts of climate change on local development and summaries of climate scenarios and flood forecasts;	• The project has produced the policy briefs for Liwale and Arumeru on the impacts of climate change on local development, the report summaries climate scenarios and flood forecast covering	**S**

Output	Activities	Status of implementation	Rating[12]
Liwale and Meru districts	2.6.2 Working with districts and wards, update local land use plans, district strategic development plans and district budget plans in light of emerging climate information, flood forecasts and economic scenarios	Ruvuma and southern Coast River Basin and Pangani River Basin. This is to support the resilience and long-term planning through working with the local authorities, Basin authorities, ward and district councils • Updated the local land use plans, district strategic development plans and district budget plans in light of emerging climate information, flood forecasts and economic scenarios.	
2.7 A plan for the sustainable financing for the operation and maintenance hydro-met network is developed and nationally approved	2.7.1 Work with TCRA on enhancing participation of cell phone operators in the EWS through regulatory reform 2.7.2 Develop a brief on annual costs and benefits of maintenance of the hydro-climate monitoring network, including on cost recovery, data services and public-private partnerships to support integration into national budget 2.7.3 Develop a private sector engagement strategy for climate info providers, including clients like agriculture, tourism, insurance, mining, transport (ports), and partners like cell phone operators, extension services, markets 2.7.4 Prepare a costed replication strategy including lessons learned, conditions for success and institutional considerations	• A consultancy has worked with Tanzania Telecommunications Regulation Agency, Ministry of Water and Irrigation, Tanzania Meteorological Agency and telecommunication providers on addressing the shortcomings that limit the engagement of telecommunications providers from interacting with government partners in terms of transmitting weather/climate data and early warnings. • The exercise of developing a private sector engagement strategy for climate info providers has been carried out. • The project has facilitated a study that has established a replication strategy including lessons learned, conditions for success and institutional considerations	**S**

Except for the Output 2.3 and Output 2.4, all the activities envisaged in the 'Project document' for the outputs of Outcome 2 have been carried out. Thus, the achievement of results for outputs (except for Output 2.3 and Output 2.4) for Outcome 2 has been as Satisfactory.

In case of Output 2.3, a simulation of the EWS in the two pilot districts, using the newly developed SOPs was to be carried out. For the purpose of the simulation, the 'Emergency Operations Unit (EOU)' (created under Output 2.2) was to be used for launching the simulation. SOP procedure (developed under Outcome 2.1) were to be used while carrying out the simulation. The simulations were expected to last for about 1-2 months. Instead, the project team carried out some desk-top simulation exercises in a workshop. The activities for Output 2.3, if carried out as envisaged in the 'Project Document' would have provided the opportunity to test (and if required correct) the SOP and the workings of EOU created under Output 2.1 and 2.2 respectively. As there is no achievement against Output 2.3, the achievement of results for Output 2.3 is rated as Unsatisfactory.

Output 2.4 of the project was to support the deployment of a crowd sourced disaster management platform whereby local communities were to be provided with telecommunications means (either simple smart phones or tablets) to upload real-time disaster and vulnerability information. This system was to be combined with an SMS based system for transmission of relevant agro-meteorological information. All the activities as envisaged in the project document for this outcome were out, except for the most crucial activity of creation of the crowd sourced disaster management platform. Accordingly, achievement of results for this outcome has been rated as Moderately Successful.

Table 17 provides details of the achievement of the results for different indicators for Outcome 2.

Table 17: Results: Outcome 2: Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long- term development plans

Indicators	Baseline	Target	Status at MTR	Level at PIR / self assessment [13]	TE Rating
Indicator 3: Percent of population with access to improved climate information and improved flood and drought warnings % of which are women	30% of people in the project sites have access to some climate information, but no people in the project sites have access to improved climate information, drought or early warnings.	At least 70% of residents in the targeted areas benefit from improved climate information, drought or early warnings	Rating: MU Not on target to be achieved There is no information about climate risk, floods hazard or drought available to residents.	On Track	**MS** (for details please see the write up after this Table)
Indicator 4: Type of development planning framework informed by climate information in Meru and Liwale Districts	TAFSIP, NSGRP-II, and other high-level frameworks include climate change and mitigating measures but no plans at local level	Local land use plans and development plans in Meru and Liwale include climate change risk information	Rating: MU Not on Target to be achieved There is not any climate change risk or water related hazards information at local level, to be included on Local land use plans and development plans in Meru and Liwale.	On Track	**S** (for details please see the write up after this Table)

For Indicator 3, the sources of verification suggested in the project document are site surveys, reports on the implementation of the EWS simulation, crowd sourced information. No such surveys were carried out. Also, as discussed in the previous paragraphs, no credible work on the simulation (Outcome 2.3) could be carried out. The work on creation of a crowd sourced platform (Outcome 2.4) is also quite inadequate. Thus, an assessment regarding the achievements against Indicator 3 is not possible based on the sources on verification mentioned in the results framework.

The project carried out pilot activities in two divisions (Makata and Kibutuka) of Liwale district. The inhabitants of the project sites have benefited from the project services and received agro-meteorological information for social and economic activities such as crop farming and livestock keeping. Similarly, the project carried out pilot activities in 6 wards (out of 26 wards) of Arumeru District. The inhabitants of the pilot areas in Arumeru district also benefit from the services. The project has distributed 200 smart phones to small holder farmers in the pilot areas in Liwale and Arumeru districts (under Outcome 2.4). In addition, 810 small holder farmers, from Arumeru and Liwale Districts were connected to a farmer SMS system. These activities have increased the reach of the early warning system in the targeted (pilot) areas to the level of 70%. However, the issue in this case is that increased reach of the early warning system is not leading to increased benefit from improved climate information, drought or early warnings. This is because there is no effective use of the newly created early warning

[13] Self-Assessment by Project Team - PIR 2017

information dissemination network. For example, since the time (March 2017) the network has been established, only 3-4 massages have been sent to the target beneficiaries. In view of this, the achievement of results against Indicator 3 has been rated as 'Moderately Satisfactory'.

For Indicator 4, the project has produced the policy briefs for Liwale and Arumeru on the impacts of climate change on local development (Output 2.6), the report summarizes climate scenarios and flood forecast covering Ruvuma and southern Coast River Basin and Pangani River Basin. This is to support the resilience and long-term planning through working with the local authorities, Basin authorities, ward and district councils. The project has also updated the local land use plans, district strategic development plans and district budget plans in light of emerging climate information, flood forecasts and economic scenarios. Accordingly, the achievement of results against Indicator 4 has been rated as 'Satisfactory'.

Based on the level of achievements for different outputs and the Indictors of Outcome 2, the achievement of results for Outcome 2 has been rated as 'Satisfactory'.

3.3.1.3 Attainment of Results - Project Objectives

The stated objective of the project, the corresponding indictors to monitor and report the achievement of the project objectives along with the sources for verification of the achievements of the targeted value of the indicator are as follows:

Project Objectives:	**Indicator:**	**Baseline Value:**	**Target Value:**	**Source of Verification:**
To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania.	Level of capacity of agencies to monitor, assess and disseminate hydro-climate information for early warnings and long-term planning	The aggregate average level of capacity as per the 'Capacity Assessment Score' is measured at 2.24 at the start of project.	The aggregate average 'Capacity Assessment Score' at end of project is 3.5	'Capacity Assessment Scorecard'

As the 'Capacity Score Card' assessment at the end of the project has not been done it is not possible to assess the achievement of the project objectives, in terms of the indicator specified in the results frame-work. Due to this reason the assessment regarding attainment of the project goals and the project objectives have been done based on the assessment of the attainment of goals and objectives of the individual Outcomes of the project, which was presented in the earlier paragraphs.

As already mentioned, the 'Capacity Assessment Scorecard' is one very good ways to rate a qualitative aspect in quantitative terms. However, it has its own set of problems and issues. In order to minimize the bias of the individuals marking the scores for different attributes of the 'Score Card' a more robust scorecard verification should be used or developed at the time of baseline assessment. For this purpose, it is necessary that the set of stakeholders along with the attributes (including the weights for each of the attribute) is detailed out as an Annex in the project document. Also, it is necessary that 'Score Card' assessment is included as an activity in the project document or in the monitoring plan, so that it doesn't get missed out.

It is recommended (please see recommendation 1) that the use of 'Capacity Score Card' as a means of verification should either be done away with or its use may be made in such a way that the discretion of the individuals giving the scores to different attributes is minimized. Also, the project document should include an elaboration on how the 'Score Card' would be used.

In the present case use of 'Capacity Score Card' at the end of the project to determine the gain in the capacity has not been executed. The project team expressed lack of understanding regarding the modalities for executing the 'Capacity Score Card', in terms of the stakeholders to mark the scorecard and way to ensure consistency (with the method used at the time of baseline assessment).

Table 18 provides the details of the indicators for achievements of 'Project Objectives'. The ratings regarding the achievement of the targeted value of the indicators are also given in the table. Also given in the table are situation at the time of MTR, achievement as assessed by the project management in the PIR (for the year ending June 2017) and the ratings of the achievements of the target values of the indicators as assessed during the TE.

As the 'Capacity Score Card' assessment at the end of the project has not been done, the assessment regarding attainment of the project goals and the project objectives have been done based on the assessment of the attainment of goals and objectives of the individual Outcomes of the project, which was presented in the earlier paragraphs. The project objectives were to be achieved through the following two Outcomes.

Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods
Outcome 2: Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long- term development plans

As far as attainment of the results is concerned, the achievement of results for the Outcome 1 and Outcome 2 of the project has been 'Moderately Satisfactory' and 'Satisfactory' respectively (as discussed in the above paragraphs). Thus, at an aggregate level the achievement of results for project objectives is somewhere between 'Satisfactory' and 'Moderately Satisfactory'. **In view of this and considering the attainment of results for different Outcomes, the achievement of project objectives and results has been rated as Satisfactory.**

Table 18: Project Objectives: To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania

Indicators	Baseline	Target	Status at MTR	Level at PIR 2017[14]	TE Rating
Level of capacity of agencies to monitor, assess and disseminate hydro-climate information for early warnings and long-term planning	The aggregate average level of capacity as per the 'Capacity Assessment Score' is measured at 2.24 at the start of project	The aggregate average 'Capacity Assessment Score' at end of project is 3.5	Rating: MS Not on Target to be achieved Main Actions in two years; • 100% Equipment procured, Installed 50%. • Performed information meetings with communities and with technical teams. • Some consultancies were performed to gather information and specifications for further actions. • Only 15 months remaining to close the project.	Project is on track	**S**

3.3.2 Relevance

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **To what extent is the activity suited to local and national development priorities and organizational policies, including changes over time?**
- **To what extent is the project in line with UNDP Operational Programs or the strategic priorities under which the project has been funded?**

[14] Self-Assessment by the project team

3.3.2.1 Relevance with National Development Priorities[15]

Tanzania is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and has developed a National Adaptation Programme of Action (2006), as well as a National Climate Change Strategy. This project makes a direct contribution to addressing the 2007 NAPA Priorities in the water and health sectors[16]. The project also falls within the framework of the Expanded NAPA of 2009, where early warning systems for droughts and floods are also mentioned as priorities in the short, medium and long-term for the agriculture sector, and as a cross-cutting priority.

Tanzania has set up a legal and institutional framework for environmental management through the Environmental Management Act of 2004. Among other things, the Act provides for establishment of climate change units at individual sector ministries. Tanzania lacks a stand-alone policy on climate change however; there are several sectoral policies, which address climate change. The policies include: National Environment Policy, National Energy Policy, Agriculture and Livestock Policy, National Forest Policy and National Water Policy. In addition, Tanzania has launched its 2013 National Climate Change Strategy, which aims to put in place a better institutional arrangement to adequately address climate change. The goal of the strategy is to enable Tanzania to effectively address climate change and to participate in global efforts to mitigate climate change with a view to achieving sustainable development, in line with the five-year national development plan, the Development Vision 2025, as well as national sectoral policies.

This project is relevant to the country's legal and development policy framework as it addresses a core issue that affects all sectors. Climate change has been given priority under section 75 of the Environment Management Act (EMA, 2004), and Disaster Management is also a priority under the Disaster Relief Coordination Act (1990, currently under review) and the Disaster Management Strategy (2004, also under review). The project also contributes to ensuring the sustainability of national development goals, including those expressed in the National Strategy for Growth and Reduction of Poverty I and II (NSGRP – National Strategy for Growth and Reduction of Poverty I &II). NSGRP – National Strategy for Growth and Reduction of Poverty II advocates for food security and climate change adaptation and mitigation.

3.3.2.2 UNDP Operational Programs or the strategic priorities

This project was to contribute to achieve the following Outcomes of the 'United Nations Development Assistance Plan (UNDAP 2011-2015)';

- Communities have access to improved credible emergency information to enable early action (Outcome 2, Emergency Preparedness and Response
- Prime Minister's Office (PMO) and Chief Minister's Office –Disaster Management Departments (DMDs) effectively lead Emergency Preparedness and Response (ERP) with focus areas most susceptible to disasters

Stronger hydro-climate monitoring capacity were to help local communities and authorities avoid climate-induced losses in livelihoods and basic services such as food and shelter for the communities in the vulnerable areas. Moreover, having improved weather forecast were to enable the government to be informed as to where there will be shortages of food and other related basic needs, and that prior plans will be made to ensure that humanitarian assistance is available to save the lives of people and their properties.

At the time of project design UNDP CO in Tanzania had a focus on: Programme 1 – Sustainable Management of Protected Areas and Programme 2 – Mainstreaming environment & Energy and

[15] Based on the Project Document

[16] Priority 6: develop an early warning system for drought and flood and in the human settlements area, priority 7: Establish a Disaster planning framework.

Sustainable Land Management. In the UNDP Country programme document for 2016-2021, Environment sustainability, climate change and resilience remain as one of the priority areas. As per UNDP CDP 2017-2021 for Tanzania, UNDP will continue strengthening the provision of accurate climate information and early warning systems for disaster preparedness, response and recovery. This ongoing upstream capacity-building and two pilot projects will be scaled up in 28 districts in partnership with the Tanzania Meteorological Agency.

UNDAP II (2016-2016) for Tanzania has also identified the need for enhancing resilience at all levels of disaster management by strengthening early warning systems at national to community levels. The priority areas of UNDAP II include, technical and financial assistance for mapping the risk, vulnerability and capacities across sectors, structures and locales with follow-up provided for enhanced resilience at all levels. This includes provision if assistance for the scale up of collection, processing, dissemination and use of weather, climatic and hydrological information for early warning systems which inform both authorities and communities alike.

Apart from being in line with the policy framework of Tanzania (National Climate Change Strategy, NAPA), the project is fully compliant with UNDP's environmental and social safeguards.

The relevance of the project has been rated as Relevant.

3.3.3 Effectiveness & Efficiency

Rating: Moderately Satisfactory

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **To what extent the objectives have been achieved?**
- **To what extent the results have been delivered with the least costly resources possible?**
- **What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention?**

Although, there are some issues with the achievements of the results, the project has been able to achieve most of its objectives, 'to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania'. From the statement of the project objective, it is observed that there were following four components in the overall objective of the project;

- to strengthen the climate monitoring capabilities
- to strengthen early warning systems
- to strengthen availability of information for responding to climate shocks
- planning adaptation to climate change

The project has strengthened the climate monitoring capabilities of the county. When it comes to 'early warning' the project has missed on one of the very important Output (flood modelling), Also the performance on the front of 'strengthen availability of information for responding to climate change' has not been that good (in-spite of the system being in place). When it comes to the objective of 'planning adaptation to climate change' the project has been able to successfully introduce climate change aspects in the land use planning in the two pilot areas.

Although the actual implementation of the project started quite late the project team under the able guidance of the Project Board has been able to make a noteworthy progress towards the achievement of the Project Objectives.

Although there was a lack of time available to carry out the planned activities, the project team has been able to carry out the planned activities due to the collaborative approach with the partner organisation like TMA and 'river basin authorities'. The results of the project can be expanded by showcasing the benefits of the adaptive measures, which have been implemented in the two river basins. Action on this

front is already underway.

As some of the results of the project could be achieved only partially, the **Effectiveness and Efficiency of the project has been rated as 'Moderately Satisfactory'.**

3.3.4 Country ownership

The main questions for TE were: (please see Annex B for the evaluation questions)

- **Was the project concept in line with development priorities and plans of Tanzania?**
- **Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee?**
- **Was an inter-governmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved?**
- **Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives?**

The project is in line with the Tanzania Five Year Development Plan 2011/2012 – 2015/2016 that highlights five core priorities to unleash Tanzania's latent growth potentials. Most of the core priorities in the plan are climate change vulnerable sectors (agriculture, tourism), and the plan further highlights the need to enhance coordination and knowledge on climate change issues. The plan's focus on agriculture proposes ambitious objectives of transformation of agriculture for food self-sufficiency and export, development of irrigation, particularly in selected agricultural corridors, and high value crops including horticulture, floriculture, spices, and vineyards. This is another area that could suffer the impact of climate change, and for which accurate forecasting and climate services would be needed for decision making.

The Five-Year Development Plan of Tanzania (FYDP II, 2016/17–2020/21) also includes climate change in the four priority areas for action: fostering economic growth and industrialisation; fostering human development and social transformation; improving the environment for business and enterprise development; and strengthening implementation effectiveness. Within the strategic interrelations proposed under the FYDP II one of the interventions is combating climate change.

There was a high level of involvement of the relevant country representatives from government and civil society in the project implementation and they were members of the steering committee. Many important departments and ministries were the implementation partners for the project. The 'Steering Committee' was co-chaired by PMO-DMD and VPO. The PMO was responsible for implementation of the project, monitoring day-to-day operations, and accountability on financial flows. The VPO was responsible for policy guidance in the virtue of its mandate for policy development and coordination of environment and climate change issues in the country. Other ministries and the TMA acted as 'Responsible Partners' for specific components of the project.

The 'Steering Committee' also acted as the inter-governmental committee with the responsibility to liaise with the project team. In line with the project objectives that government has established an 'Emergency Operations Unit' and developed the 'Standard Operating Procedures' to handle hazard events.

There were following two requirements in the project design for enacted legislation, and/or developing policies and regulations;

- Work with TCRA on enhancing participation of cell phone operators in the EWS through regulatory reform
- Develop a private sector engagement strategy for climate information providers, including clients like agriculture, tourism, insurance, mining, transport (ports), and partners like cell phone operators, extension services, markets

The project engaged consultants to recommendations (for consideration by the government) for these two tasks. At the time of TE the reports (deliverables) for these assignments were under preparations. However, discussion on these two were held with the officials of TMA and the PMO. The discussions revealed that the government is positive to bring in the required regulations.

3.3.5 Mainstreaming

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **How is the project successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment?**
- **Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability).**
- **Do the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP)?**
- **Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters.**
- **Whether gender issues have been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.)**

UNDP has a long history of supporting climate change adaptation and disaster risk reduction in Tanzania. In Tanzania, UNDP has been working as a key development partner of choice to achieve sustainable human development in economic, social and environmental fronts. Working closely with the Government at the national, regional and local levels, and civil society and the private sector, UNDP aims at eradicating extreme poverty and reducing inequalities and exclusion to protect both people and the planet. The project was fully compliant with UNDP's environmental and social safeguards defined by integration of the precautionary principle into programme/project management cycles. The very design of this project correlates to the main objective of safeguarding to prevent and mitigate undue harm to the environment and people at the earliest possible planning stage, and to identify and realize opportunities to strengthen environmental and social sustainability, including climate resiliency, of programming. The selected sectors (water resources management and disaster risk reduction) are in line with the priorities areas of UNDP.

The development priorities of UNDP, where the project has contributed, are improved natural resource management, improvement in policy frameworks for disaster risk reduction, increase resilience to climate change and agriculture.

The project design and its implementation has taken specific care to ensure women's participation. Some of the specific points in this regard are;

- The project design integrates gender considerations in a Tanzanian context. Specifically, given their particular roles in agriculture, and the large number of female-headed households in project sites, the project intended to ensure that women have a role to play in the early warning system, that they benefit from climate information that is relevant to them and their roles, and that the information is presented and transmitted in a way that is accessible to them, considering their specific constraints.
- The project has trained 885 community members, of which 259 were women, from the project pilot zones. The trainings have built community awareness on dissemination and use of climate information for managing floods and droughts.
- 84 community representatives (on which 42 were women) from Liwale district and 72 (of which 36 were women) from Arumeru district were selected to form a district crowd sourced platform. The volunteers represent all socio-economic groups including women, youth, elders, crop producers, livestock managers, water user associations etc.
- The project introduced an SMS based system for transmission of relevant agro-meteorological information designed for smallholder farmers in the project pilot districts. 810 small holder farmers

of which 405 are women from the two project pilot districts receive regular weather forecast and famers advisory.

- The project has developed guidelines for local Early Warning systems simulation (EWS) which has taken care to ensure the participation of women and girls. The guidelines were used to conduct early warning simulation exercises in the pilot districts. 103 community members participated in the simulation exercises, 43 were females equivalent to 39% of the total participation.
- The project has facilitated training to local media, Community Based Organizations (CBOs), gender-based organizations and Non-Government Organizations working in the project pilot districts. 41 journalists participated in the training. The project trained 619 community members where 185 members were women from the project pilot districts on the use of climate information, products and interpretations of early warning systems.

3.3.6 Sustainability

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **Are there financial risks that may jeopardize the sustainability of project outcomes?**
- **What is the likelihood of financial and economic resources not being available once GEF grant assistance ends?**
- **Are there social or political risks that may threaten the sustainability of project outcomes?**
- **What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?**
- **Do the various key stakeholders see that it is in their interest that project benefits continue to flow?**
- **Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?**
- **Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?**
- **Are requisite systems for accountability and transparency, and required technical knowhow, in place?**
- **Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?**

One of the risks to sustainability of the impacts created under the project is the availability of funds to carry out the maintenance of the newly created weather monitoring and forecasting facilities. The project has created additional infrastructure for the collection of weather data, generation of weather related warning and advisory services. The one-time cost for creation of such infrastructure has been provided by the project. The project also provided the cost of operation and maintenance of the newly created infrastructure during the implementation phase of the project. After the closure of the project, the ownership of the assets and the responsibility to operate them will be passed on to the government authorities. There will be a recurring cost for maintenance and operations of the newly created infrastructure. This cost includes the following:

- Cost of consumables (batteries and spare parts)
- Charges to be paid to telecom companies for data transmission
- Charges to be paid to energy companies for provision of on-site solar panel for power generation
- Charges to be paid as rent / service charges to the owner of the premises housing the equipment
- Salaries to the additional staff for operation and maintenance of the equipment and the EOU

The ownership and the responsibility for operation and maintenance of the advanced weather stations will get passed on to TMA. Presently, TMA gets funds from the government for its operations. Under the project a strategy has been worked out to generate some revenues by engaging the private sector and sell weather products. The idea is to meet about 20% of the regular expenses by selling the weather products. It is expected that TMA will be able to take care of the increased expenses partly by selling the weather product and partly by budgetary support.

In case of river gauges and hydrological stations, the flood model the ownership and the responsibility to operate will be with the two river basin authorities when the pilots were carried out. These 'water basin authorities get some funds as per budgetary provisions and the balance funds are organized by

them by levying a water charge on the users of water. In case of Pangani basin, the collection of revenues due to water charges is quite significant (due to present of hydro power generation facilities). Also, in case of Pangani, due to availability of cellular phone network and internet in most of the areas, the communication expenses to transmit data to the server are comparatively less. Therefore, it is expected that the Pangani Basin Authority (as confirmed by the officials) will be able to take care of the additional recurring expenses due to the project. However, the situation is not that comfortable in case of Ruvuma River Basin, firstly due to the absence of any major water user, the collection of water charges is not that significant. Secondly, because of non-availability of mobile phone network in many locations, the transmission of data used a satellite link (which is comparatively much costlier). **The sustainability of the project from the view point of financial risks is Moderately Likely (ML).**

The project has successfully created a shift momentum (by successful demonstration in the pilots) in the thinking within the government stakeholders, like national government entities, district / divisional administration and local authorities, regarding the importance of 'Weather Forecasting' and 'Early Warning' regarding the likelihood of the hazards. One of the 'risks' to sustainability of the achievement is the inability to sustain the shift, in the thinking within the national government entities. Wherever actions have been implemented on the ground, they have created a positive impact in the communities. There are no socio-economic issues associated with the project. **From the view point of Socio-political risk to the sustainability of the impacts, the sustainability has been rated as Likely.** This is considering that there are many climate change adaptation projects which are under implementation in Tanzania. These projects will help to maintain and sustain the shift in the thinking regarding the importance of 'Early Warning' in managing the climate change induced Hazards.

As such there is no institutional and governance risk to sustainability of the project results except for the fact that the institutional framework for 'Early Warning' delivery and the matching actions on the ground involves multiple agencies. **From the view point of institutional framework and governance risks, the sustainability of the project is Likely.**

There are no negative environmental impacts of the project, other than some minor impacts due to change in the land-use pattern. There is a remote possibility of environmental impacts due to changes in the cropping pattern as an adaptive measure. **From the view point of environmental risk, sustainability of the project is Likely.**

The overall sustainability of project results is rated as 'Moderately Likely'.

3.3.7 Impact

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **Whether, the project has demonstrated verifiable improvements in ecological status?**
- **Whether, the project has demonstrated verifiable reductions in stress on ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?**

The project aimed at improving the resilience to climate change by strengthening the capacity of the Government of Tanzania to observe, analyse and forecast climate information to enhance the capacity of their early warning systems for climate resilient development and adaptation to climate change. Given the focus of the project on strengthening of capacity of the country for weather forecasting and early warning, it has provided both hardware (weather stations, river gauges, servers) and software (training, flood forecast models) to achieve the objectives.

The project also aimed at incorporation of adaptation to climate change into the land use planning at the local level to take care of the hazards. The project has been able to successfully introduce climate change aspects in the land use planning in the two pilot areas.

The interventions carried out under the project included compilation of weather data, development of institutional capacities to assess risk, issue early warnings for likelihood of a hazardous event, designing appropriate interventions, communicate the risk and the adaptive action to the communities and implementing adaptation actions with community participation. The achievement of the project objectives is satisfactory, and the project has achieved the required impacts.

The project has installed the water gauges in the river streams to monitor the water flow. The project has also put number of rain gauges in the catchment areas of the two basins. As no structures were created and no interference with the flow of rivers was carried out, there is no impact on the ecological status.

The project was not targeted to improvements in the ecological status. As such there are no changes in the ecological status due to the project.

4. CONCLUSIONS, RECOMMENDATIONS & LESSONS

The main questions for the TE were: (please see Annex B for the evaluation questions)

- **Did the project provide cost-effective solutions in order to address barriers?**
- **Are these solutions provided in an efficient way?**
- **What are the best and worst practices in addressing issues relating to relevance, performance and success?**
- **Corrective actions for the design, implementation, monitoring and evaluation of the project**
- **Actions to follow up or reinforce initial benefits from the project**
- **Proposals for future directions underlining main objectives**

The project aimed at improving the resilience to climate change by strengthening the capacity of the Government of Tanzania to observe, analyse and forecast climate information to enhance the capacity of their early warning systems for climate resilient development and adaptation to climate change. The project targeted removal of following barriers towards, use of 'Early Warning Systems' and 'Hydro-Met Capacity' in Tanzania;

- Inadequate number of meteorological and hydrological observing stations
- Lengthy and ineffective means of communicating weather, climate and early warning information
- Un-coordinated operation, maintenance and use of the hydro-climate monitoring system and information
- Policy and institutional weaknesses in the mechanisms governing disaster management.

The project has successfully installed new automated weather stations, rain gauges, river gauges and hydro-met stations. The project carried out on the ground interventions at two pilot locations. The inhabitants of the pilot project sites have benefited from the project services and receive agro-meteorological information for socio-economic activities such as crop farming and livestock keeping. The project has distributed 200 smart phones to small holder's farmers in the pilot areas in Liwale and Arumeru districts. In addition, 810 small holder farmers were connected with a farmer SMS system. These activities have increased the reach of the early warning system in the targeted (pilot) areas. Radios, faxes, televisions, meetings, social media, meeting with journalist etc. were also among the means of disseminating weather information to pilot sites and other sites in the country.

Although there are some issues (e.g. non-achievement of flood modelling, actual dissemination of the information/ warning of the newly created network etc.) with the achievements of the results, the project has been able to achieve most of its objectives, 'to strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning adaptation to climate change in Tanzania'. From the statement of the project objective, it is observed that there were following four components in the overall objective of the project;

- to strengthen the climate monitoring capabilities
- to strengthen early warning systems
- to strengthen availability of information for responding to climate shocks
- planning adaptation to climate change

The project has strengthened the climate monitoring capabilities of the county. When it comes to 'early warning' the project has missed on a very important output (flood modelling), Also the performance on the front of 'strengthen availability of information for responding to climate change' has not been that good (in-spite of the system being in place). When it comes to the objective of 'planning adaptation to climate change' the project has been able to successfully introduce climate change aspects in the land use planning in the two pilot areas.

The project provided the solutions in order to address the barriers towards use of 'Early Warning Systems' and 'Hydro-Met Capacity'. However, due to some shortfalls in the achievement of results,

there is a bit of lacking in terms of effectiveness and efficiency of delivery due to non-achievement of some of the outputs (e.g. flood modelling, simulation exercise)

4.1 Corrective actions for design, implementation, monitoring and evaluation of project

Recommendation 1: Generally speaking, in case of use of a Score Card as an indicator and a means for verification, the project document should include an elaboration on, how the Scores would be determined. Also, a write up should be included in the monitoring plan regarding the determination of 'Score' as an activity, so that it does not get missed out

Recommendation 2: The project design has considered that demonstrations of benefits at local level from an effective EW, increased information and prediction ability on floods and droughts, increased agro-meteorological information, will help replicate and upscale project outcomes to other regions. As such there is nothing wrong with this consideration. However, it needs to be appreciated that preparation of reports and knowledge products alone is not sufficient for replication. Such lessons learnt, good practices and field demonstration need to be disseminated and communicated to the target audiences to achieve the objective of replication. It is recommended that project design should include the activities targeted as dissemination of the knowledge, case studies and lessons learnt to support replication and scaling up of project outcomes.

Recommendation 3: The measuring instruments (like gauges, sensors in the automatic weather stations etc.) supplied under the project will require periodic calibration. The infrastructure (laboratory etc.) required for this is presently not available in Tanzania, the future projects involving supply of measuring instrument / equipment should have a strategy for periodic calibration of the instruments / equipment. It can also be a part of the procurement process, wherein the calibration services are provided by the supplier of the equipment/instruments.

Recommendation 4: The project design has provided mobile phone network as a means of communicating early, the likelihood of a hazardous event and the measures required to be taken by the community to address the event. However, in the developing world, some geographical areas (including some of the locations where pilots under the projects we carried out) are still not at the level where availability of mobile telephony is still not there. For the cases where, mobile communication network is not available, the projects in the area of early warning / disaster management, in their design, need to provide for an alternative way to transmit data and to communicate 'Early Warning' of a likely event to the locations where mobile communication is still not available. Such alternatives, may include public broadcasting, community-based radio stations etc. (please see recommendation 9 as well)

4.2 Actions to follow up or reinforce initial benefits from the project

Recommendation 5: The project could not complete the task of development and deployment of the flood forecasting models. The consultant for this activity has already been appointed. The deliverables for this will be provided by the consultant much after the end of the project. It is recommended that the project may work out the modalities for it to ensure that the quality deliverables are received, the required demonstration and training to the officials of the basin authorities is provided regarding the use of the software.

4.3 Proposals for future directions underlining main objectives

Recommendation 6: It is recommended to scale up the project to cover other areas of the country and the remaining seven water basins in Tanzania so that the other parts of the country can also benefit from the early warning. However, while doing so the lessons learnt from this project may be used to ensure better results.

Recommendation 7: It is proposed, and TMA would in part meet its expenses by selling weather data (or weather data products). In this regard, the country may need to have a formal data policy and regulatory mechanism to facilitate commercial use/marketing of weather data and products. In this regard a study should (or would need to) be carried out to see the kind of provisions made in different countries and draw the lessons.

4.4 Best and worst practices in addressing issues relating to relevance and performance

Recommendation 8: To sustain the operations of TMA it is necessary to have consistent revenue streams through the sale of weather products. Some of the weather products which can be tapped are;

- Data for development of weather index-based crop insurance models
- Data for solar radiations (Solar Atlas)
- City/location specific weather data to facilitate Energy Efficiency measures in the building sector (Green Buildings)

Recommendation 9: For communication the old and proven method of community-based radio stations may be explored. Although this may be comparatively capital intensive (compared to communication on mobile phone), the coverage of the impacted population would be almost 100%. Further, from sustainability point of view this is better as no recurring cost is involved (for mobile communication the telecom companies are to be paid regularly which impacts the financial sustainability).

Recommendation 10: From the view point of financial sustainability, one of the regular expenses is the regular bills to be paid to the telecommunication companies. The national government may explore the possibility to have policies, wherein there are no charges by the telecom companies for providing such kind of services. For example, there can be a condition in the licensing agreement to the telecom companies, wherein the services provided for disaster management and defence of the country are not chargeable.

Recommendation 11: In the areas where mobile phone services are not available; the project has provided for establishment of a satellite link for transmission of the data from the weather stations. The capital cost of providing the link and the recurring cost (for managing the batteries, invertors, solar PV systems etc.) is also quite high. It is recommended that in the situations where mobile phone services are not available, the creation of such facilities with mobile service provides (telecom companies) may be explored on a cost sharing basis. This is likely to reduce both the capital cost and the recurring cost for provision of the link for data transmission. It will have an added advantage of the development of the area.

ANNEX A. TERMS OF REFERENCES

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for the International Consultant for the Terminal Evaluation (TE) of the ***Strengthening climate information and early warning systems in Tanzania for climate resilient development and adaptation to climate change***. (PIMS #***5096***)

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	***Strengthening climate information and early warning systems in Tanzania for climate resilient development and adaptation to climate change***			
GEF Project ID:	4991		*at endorsement (Million US$)*	*at completion (Million US$)*
UNDP Project ID:	PIMS: 5096	GEF financing:	3.60	3.42
Country:	Tanzania	IA/EA own:	0.60	0.79
Region:	East Africa	Government:	22.57	19.74
Focal Area:	Climate Change Adaptation	Other:		
FA Objectives, (OP/SP):		Total co-financing:	23.17	20.53
Executing Agency:	PMO-DMD (co-chair) VPO-DOE (co-chair	Total Project Cost:	26.77	23.95
Other Partners involved:		ProDoc Signature (date project began):		16/12/2013
		(Operational) Closing Date:	Proposed: 30/6/2018	Actual:

OBJECTIVE AND SCOPE

The project was designed to strengthen the capacity of national and sub-national entities to monitor climate change, generate reliable hydro-meteorological information (including early warnings for droughts and floods) and to be able to combine this information with other environmental and socio-economic data to improve evidence-based decision-making for early warning and adaptation responses and long-term planning. The project outcomes are closely aligned and coordinated with baseline efforts already underway within Tanzania to promote development which is resilient to climate change at the national and local levels.

The project aimed to address several barriers with regard to EWS and hydro-met capacity including: i) insufficient meteorological and hydrological observing stations to adequately and accurately monitor the current state of the climate and hydrology; ii) lengthy and ineffective means of communicating weather, climate and early warning information; iii) un-coordinated operation, maintenance and use of the hydro-climate monitoring system and information; iv) policy and institutional weaknesses in the mechanisms governing disaster management.

The key impact indicator for the project is the level of capacity of agencies to monitor, assess and disseminate hydro-climate information for early warnings and long-term planning. This indicator is to be measured using a

Capacity Assessment Scorecard, as developed by UNDP, using expert judgment, and includes an overall assessment of the main institutional stakeholders (TMA, PMO, MoW, WBAs, MAFS).

This objective will be achieved through the two components and associated outcomes detailed below.

Component 1: Transfer of technologies for weather, climate, hydrological and environmental monitoring infrastructure

Outcome 1: Enhanced Capacity of TMA and Water Basins to monitor (and forecast) droughts and floods

This component is building on addressing key gaps facing the operation operations of the Tanzania Meteorological Agency in terms of climate monitoring, weather prediction and forecasting, as well as on the work of Water Basin Authorities in terms of flood monitoring and mitigation. The TMA performs regular climate monitoring services, including rainfall and other climate parameters through a network of manual and automatic stations. Before the start of this project, the percentage of the country that was covered by the operational climate monitoring system was estimated at 50% (mostly manual stations), and the percentage covered by an automated network is estimated at 30%. The capacity of TMA on using climate data for forecasting services through data assimilation techniques was inadequate. Similarly, the Ministry of Agriculture whose mandate is to use the meteorological data to produce forecasts on food security faced problem on data shortage and inadequate capacity on the provisions of hydrological services in the country.

The outcome to measure this component is basing on the following key indicators

a. Percentage of Tanzania covered by the enhanced climate monitoring system

b. Frequency of data transmission and reception of current weather and river levels at TMA and the WBAs (both at district and national level).

Component 2: Climate information integrated into development plans and early warning systems

Outcome 2: Efficient and effective use of hydro-meteorological information for making early warnings and long-term development plans

This component is building on addressing the ongoing effort led by the Prime Minister's Office (Disaster Management Department) in coordinating all disaster management issues in the country including disaster relief operations and preparedness measures. The DMD receives initial notification or warning of disaster from multiple sources, chiefly from the TMA (concerning climate-based or weather-based warnings) or from local sources (concerning occurrences of disaster) and provided the coordination role of all relief efforts.

The component is ensuring the DMD as the improved the Tanzania Emergency and Preparedness Plan (TEPRP) that describes various disaster situations and planning assumptions, operational concepts, response and recovery actions, organizational and other assignments of responsibilities to the departments and government agencies tasked with local response efforts. And also, to ensure there is harmonized definition of hazards and triggers, and communication of hazards to follow established channels and codes of conduct. Most importantly ensuring local community participation in early warnings.

The component also addresses the issue of cost recovery and benefits of maintaining an appropriate weather/climate/hydrological monitoring and early warning system. This is to ensure much untapped potential, particularly with the large public-private partnerships being launched by the government in different sectors, including agriculture.

To addresses the effective use of hydro-meteorological information for making early warnings and long-term development plans. Arumeru and Liwale District were selected as the project pilot districts.

The Terminal Evaluation (TE) will cover the entire Project.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method[17] for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact,** as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR. The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Dar es Salaam, Dodoma, Arusha, Mtwara, Moshi and part of Pangani and Ruvuma and southern Coast Basins, including the project sites in Meru and Liwale districts. Interviews will be held with the following organizations (see table below) and individuals at a minimum.

Category	Stakeholder	Location
Government Stakeholders	Prime-Ministers Office, Disaster Management Department	Dar Es Salaam
	Ministry of Agriculture, Food Security and Cooperatives	Dodoma
	Ministry of Livestock and Fisheries Development	Dodoma
	Ministry of Water and Irrigation	Dodoma
	Vice-President's Office- Division of Environment	Dar es Salaam
	Tanzania Communications Regulatory Authority (TCRA)	DSM
	Tanzania Meteorological Agency	Moshi
	United Nations Development Programme	Dar es Salaam
	Pangani basin water Board	Mtwara
	Ruvuma and Southern Basin Water Board	Ruvuma
Local Government	District Councils - Meru, Liwale	Arusha Liwale
	Water User Associations	

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in TOR Annex B of this Terms of Reference.

[17] For additional information on methods, see the Handbook on Planning, Monitoring and Evaluating for Development Results, Chapter 7, pg. 163

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see Annex A) which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact.** Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in TOR Annex D.

Evaluation Ratings:			
1. Monitoring and Evaluation	***rating***	**2. IA& EA Execution**	***rating***
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental:	
		Overall likelihood of sustainability:	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US$)		Government (mill. US$)		Partner Agency (mill. US$)		Total (mill. US$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Panned	Actual
Grants	0.60	0.79	0		3.60	3.42	4.20	4.21
Loans/Concessions								
• In-kind support			22.57	22.00	0		22.57	19.74
• Other			0		0		0	0
Totals	0.60	0.79	22.57		3.60		26.77	23.95

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project

has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.[18]

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions**, **recommendations** and **lessons**. Conclusions should build on findings and be based in evidence. Recommendations should be prioritized, specific, relevant, and targeted, with suggested implementers of the recommendations. Lessons should have wider applicability to other initiatives across the region, the area of intervention, and for the future.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in *Tanzania.* The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be *24* days according to the following plan:

Activity	Timing	Completion Date
Preparation	3 days	15th March
Evaluation Mission	10 days	1st April
Draft Evaluation Report	8 days	15th April
Final Report	3 days	6th May

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission. (by 15 March 2018)	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission (by 1 April 2018)	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission (by 15 April 2018)	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft (by 6th May 2018)	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail' (see Annex H), detailing how all received comments have (and have not) been addressed in the final evaluation report.

TEAM COMPOSITION

The evaluation team will be composed of two evaluators – one international, one national. The international consultant will serve as the team leader and will be responsible for finalizing the report. The consultant shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The

[18] A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: ROTI Handbook 2009

evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The Team members must present the following qualifications:

- Work experience in relevant technical areas for at least 10 years; (25%)
- Knowledge of UNDP and GEF (20%)
- Previous experience with results-based monitoring and evaluation methodologies; (10%)
- Technical knowledge in the targeted focal area (s) (10%)
- Experience working in Tanzania; (10%)
- Demonstrated understanding of issues related to gender and climate change adaptation; experience in gender sensitive evaluation and analysis. (10%)
- Excellent communication skills; (10%)
- Demonstrable analytical skills; (5%)
- Project evaluation/review experiences within United Nations system will be considered an asset;

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	Following submission and approval of the inception report
40%	Following submission and approval of the 1st draft terminal evaluation report
50%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

Applicants are requested to apply online http://procurement-notices.undp.org/ by 8th March 2018. Individual consultants are invited to submit applications together with their CV for these positions. The application should contain a current and complete C.V. in English. with indication of the e-mail and phone contact. Shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs).

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

ANNEX B. TERMINAL EVALUATION CRITERIA AND QUESTIONS

Contents	Main questions and Terminal Evaluation Scope
3. Findings: Project design and formulation 3.1 Analysis of LFA/Results Framework 3.2 Assumptions and Risks 3.3 Lessons from other relevant projects 3.4 Planned stakeholder participation 3.5 Replication approach 3.6 UNDP comparative advantage 3.7 Linkages between project and other interventions within the sector 3.8 Management arrangements	• Were the project's objectives and components clear, practicable and feasible within its time frame? • Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? • Were lessons from other relevant projects properly incorporated in the project design? • Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? • Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry? • Were the project assumptions and risks well articulated in the PIF and project document? • Whether the planned outcomes were "SMART"?
4. Findings: Project Implementation 4.1 Adaptive management 4.2 Partnership arrangements 4.3 Feedback from M&E activities used for adaptive management 4.4 Project Finance 4.5 Monitoring and evaluation: design at entry	***ADAPTIVE MANAGEMENT*** • Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications. • If the changes were extensive, did they materially change the expected project outcomes? • Were the project changes articulated in writing and then considered and approved by the project steering committee? ***PARTNERSHIP ARRANGEMENT*** • Were there adequate provisions in the project design for consultation with stakeholder. • Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board? • Whether lessons from other relevant projects incorporated into project implementation? • Whether feedback from M&E activities was used for adaptive management? ***PROJECT FINANCE / CO-FINANCE*** • Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources. • What are the reasons for differences in the level of expected and actual co-financing? • To what extent project components supported by external funders were well integrated into the overall project? • What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing? • Whether there is evidence of additional, leveraged resources that have been committed as a result of the project?

Contents	Main questions and Terminal Evaluation Scope
4.6 Monitoring and evaluation implementation 4.7 UNDP and Implementing Partner implementation / execution coordination, and operational issues	***PROJECT MONITORING & EVALUATION (AT DESING AND AT IMPLEMENTATION)*** • Is the M&E plan well conceived at the design stage? • Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives? • Was the M&E plan sufficiently budgeted and funded during project preparation and implementation? • How effective are the monitoring indicators from the project document for measuring progress and performance; • Whether the logical framework was used during implementation as a management and M&E tool? • What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports; • What has been effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff; • What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs); • Whether APR/PIR self-evaluation ratings were consistent with the MTR and TE findings. If not, were these discrepancies identified by the project steering committee and addressed? • Whether changes were made to project implementation as a result of the MTR recommendations. ***GEF IMPLEMENTING AGENCY EXECUTION - UNDP*** • Whether there was an appropriate focus on results • Was there adequate UNDP support to the Implementing Partner and project team • Quality and timeliness of technical support to the Executing Agency and project team • Were the management inputs and processes, including budgeting and procurement adequate
5. Findings: Project Results 5.1 Overall results 5.2 Relevance 5.3 Effectiveness & Efficiency	***OVERALL RESULS*** • What if the Review the achievement of the objectives against the end of the project values of the log-frame indicators with \indicators for outcomes/outputs, indicating baseline situation and target levels, as well as position at the close of the project? • How does the GEF Tracking Tool at the Baseline and the one completed right before the Midterm Review with that Prepared at the time of Terminal Evaluation compare? • What are the possible issues while applying sustainable urban transport systems? ***RELEVENE*** • To what extent the activity is suited to local and national development priorities and organizational policies, including changes over time.? • To what extent the project is in line with UNDP Operational Programs or the strategic priorities under which the project was funded? ***EFFECTIVENESS*** • To what extent the objectives has been achieved? ***EFFICIENCY*** • To what extent the results have been delivered with the least costly resources possible? • What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention? ***COUNTRY OWNERSHIP*** • Was the project concept in line with development priorities and plans of

Contents	Main questions and Terminal Evaluation Scope
5.4 Country ownership	the country? • Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee? • Was an intergovernmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved? • Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives?
5.5 Mainstreaming	***MAINSTREAMING*** • How the project is successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment. • Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability). • Do the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP)? • Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters. • Whether gender issues had been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.)
5.6 Sustainability	***SUSTAINABILITY*** ***Financial risks:*** • Are there financial risks that may jeopardize the sustainability of project outcomes? • What is the likelihood of financial and economic resources not being available once GEF grant assistance ends? ***Socio-economic risks:*** • Are there social or political risks that may threaten the sustainability of project outcomes? • What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? • Do the various key stakeholders see that it is in their interest that project benefits continue to flow? • Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? ***Institutional framework and governance risks:*** • Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? • Are requisite systems for accountability and transparency, and required technical knowhow, in place? ***Environmental risks:*** • Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes? ***IMPACT*** • Whether, the project has demonstrated verifiable improvements in ecological status? • Whether, the project has demonstrated verifiable reductions in stress on

Contents	Main questions and Terminal Evaluation Scope
5.7 Impact	ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?
6. Conclusions, Recommendations & Lessons 6.1 Corrective actions for the design, implementation, monitoring and evaluation of the project 6.2 Actions to follow up or reinforce initial benefits from the project 6.3 Proposals for future directions underlining main objectives 6.4 Best and worst practices in addressing issues relating to relevance, performance and success	***CONCLUSIONS*** • Did the project provide cost-effective solutions in order to address barriers? • Are these solutions provided in an efficient way? • What are the best and worst practices in addressing issues relating to relevance, performance and success? ***RECOMENDATIONS*** • Corrective actions for the design, implementation, monitoring and evaluation of the project • Actions to follow up or reinforce initial benefits from the project • Proposals for future directions underlining main objectives

ANNEX C. DOCUMENTS REVIEWED

Project Document - Signed	
Tanzania Project Document	
Inception meeting minutes	
MTR Report	
Management Response to MTR Report	
MTR initial findings	
PIR - 2017	
Quarter and Half Yearly Reports	
	H1 2015 January - June 2015 EWS Project progress Report
	H2 2014 July- December 2014 Progress Report
	H2 2015 July - December 2015 Project progress Report
	H2 2015 July - December 2015 CIEWS project progress report
	H2 2016 Six Month report July- December 2016
	H2 2016 Six Month report July- December 2016
	Q1 2017 SUMMARY PROJECT UPDATES (Jan-March 2017)
	Q1 2018 Summaries of project update Jan- March 2018
	Q4 2017 SUMMARY PROJECT UPDATES (October-December 2017)
Project status at End of Project	
CDRs	
	CDRs 2014 - 2018
	CDR - Jan-March 2014
	CDR - April - June 2014
	CDR - July - September 2014
	CDR - October - December 2014
	CDR - October - December 2015
	CDR Jan -Jun 2017
	CDR - April - June 2015
	CDR Jan - Dec 2017
	CDR - January - December 2014 - Annual
	CDR - January - December 2015
	CDR - 3rd qtr. 2016
	CDR - July - September 2015
	CDR Jul-Sept 2017
Steering Committee Reports	
ToR Tanzania flood forecasting	
Districts EPRPs and RVCA reports	
SOP for Managing Disasters in Tanzania	
EWS simulation and Journalist training	
Crowd-sourced platform STRATEGY	
Project Lessons learned reports	
Land use and guidelines pilot districts	
Term of Reference_-_TCRA	
TOR Private Sector Engagement Strategy TMA	
Case study	
CC-A Tracking Tool Tanzania	
Districts EPRPs and RVCA reports	
DMD Report Regulatory Reform	

REPORT-Sensitization Workshop in Arumeru District	
Status reports	
	Status Report 20.12.2016
	Status Report 31.08.2017
	Project progress Summaries (July 2014 to Feb 2018)
	Project updates (Swahili version) prepared for government use
	Project end status
Towards Sustainability CIEWS Tanzania (Lusaka Workshop)	
Project brief CIEWS	
TANZANIA EWS ENUMERATION REPORT	

ANNEX D: PERSONS INTERVIEWED, MISSION AGENDA

Name	Designation	Contacts
Meeting with PMO-DMD 29.05.2018		
Prof. Faustin Kamuzora	PS-PMO	Faustin.kamuzora@pmo.go.tz
Bashiru Taratibu	Ag. MIM-PMO	Bashiru.hussein.@pmo.go.tz
Alfei Daniel	NPC-EWS	Alfei.daniel@undp.org
Stakeholder Inception Meeting 29.05. 2018		
Edgar Sanga	PSU-PMO	katenenga@yahoo.co.uk
Caroline Kilembe	PAO-Min Agriculture	carockilembe@yahoo.com
Diana Kimbute	S/H MOWI	dkimbute@gmail.com
Jane Alfred	Statistician-PMO-DMD	Jane.kikunya@pmo.go.tz
Ewald Boniface	Economist	Ewald.boniface@pmo.go.tz
Clement Maganga	Finance and Admin	Clement.maganga@undp.org
Abbas Kitogo	Program Specialist-UNDP	Abbas.kitogo@undp.org
Aaron Cunningham	Program Analyst-UNDP	Aaron.cunningham@undp.org
Alfei Daniel	NPC-EWS	Alfei.daniel@undp.org
30.05.2018 Pangani Basin Water Boards		
Vendeline Z. Basso	Ag. Water Officer	Vendeline.basso@maji.go.tz
Omary Gumbo	Water Technician	Omaryg99@gmail.com
Henry Mchomvu	MOWI	henry.mchomvu@maji.go.tz
Honest K.M	Water engineer	honestcolm@gmail.com
Martin D. Kasambala	Hydrologist	Kaluters2003@yahoo.com
30.05.2018: Meeting with TMA		
Hamza Kabelwa	Director-Forecasting services	Hamza.kabelwa@meteo.go.tz
Samuel Mbuya	Manager, Forecasting servicess	
Lemmy Mganga	Engineer	
30.05. 2018 Meeting with MoW		
Felix Peter	Water Resources Dept	
Anna	Water Resources Dept	
31.05 2018: Meeting with Heads of Departments, District Disaster Management Committee, NGOs - Arumeru		
Charles E. Msigwa	Livestock and Fisheries	drmsigwacharles@gmail.com
Fatuma M. Kiusa	Water Technician	fatumakiusa@gmail.com
Grace Mlalile	Administration	gracemlalile@yahoo.co.uk
Andrew Mwakisu	World Vision	Andrew-mwakisu@wvi.org
Eva Kundy	ICT	Eva.kundy@merudc.go.tz
Shairu Chuma	Town Planner	mgogohela@gmail.com
Flora J. Maluku	AC 10	lorahless@yahoo.com
Hamisi Singano	Planning	abrasingano@yahoo.com
Charles Gisinyaw	Coordinator, Disaster Management	cgisinyaw@gmail.com
Jackson Muro	CEDESOTA	Muroeji@gmail.com
Lemmy Mganga	Engineer-TMA	Lemmy.mganga@meteo.go.tz
Alfred Kondowa	Meteorologist -TMA	alfredkondowa@meteo.go.tz
Meeting with Community: Beneficiaries-Arumeru District 31.05.2018		
Name	**Village**	**Contacts**
Maeda David Molel	Shambarai	Shambalai
Eunice Francis Akyoo	Maroroni	Maroroni
Pelagia D Mlambo	Maroroni	Mororoni
Victor Kkaijage	Makiba	Makiba

Name	Designation	Contacts
Yohana S. Molel	Majengo	Majengo
Lemomo K. Molel	Makiba	Makiba
Emmanue Robert Mushi	Majengo	Majengp
Upendo Salum	Makiba	Makiba
Domino NNKO	Mfulony	Mfulony
Bryson Mungure	Maroroni	Mororoni
Raheli Sikawa	Mbuguni	Mbuguni
Grace Isanja	Shambarai Burka	Shambarai
Elishusha Mbise	Mfurony	Mkoarisambu
Paulo Mtyani	Majengo	Majengo
Andrea Akyoo	Mfulony	Mfulony
Boniface Lemari	Shambarai Burka	Shambarai
Wilbert Mungure	Mbuguni	Mbuguni
Perpetua Mafie	Mikungani	Mbuguni
Loveness Tikwa	Majengo Kati	Majengo Kati
Godlisten Lema	Kikuletwa	Mbuguni
Meeting with Ruvuma and Southern Cost Basin Water Board 01.06.2018		
Name	**Position/Organization**	**Contacts**
Jaribu M. Liana	Hydrologist- RBWB	Jaribu.modest@gmail.com
Glades Rugaimukamu	Engineer	gladesodwin@gmail.com
Galus Saya	Supplies Officer	Galussap49@gmail.com
Mohamed. A. Kiboko	Technician	Kibokomohamed@gmail.com
Agripina Geofrey	Technician	agripinagift@gmail.com
John Msimbe	P/Technician	msimbejp@gmail.com
John Leonard	HG/Technician	Mlokajohn34@gmail.com
Moshi Katui	P/Technician	
Boniface Msemwa	CDO	Bonifacemsemwa.bm@gmail.com
Deusdedith Gonelanda	Focal Person	gdeusdedith@gmail.com
Jumanne S. Mpemba	BWO	Smpemba2001@yahoo.co.uk
4.06.2018: Meeting with Liwale DC		
Florentina Mkunde	Focal Point -EWS	
Salum Chautundu	Ag. DED	
Mbwana Richard	DAS	
04.06.2018 Meeting with Heads of Department and Disaster Management Committees and CSOs		
04.06.2018: Meeting with Community beneficiaries		
06.06.2018 Debrief Meeting with Stakeholders		
Bashiru Taratibu	Ag.MIM-PMO	Bashiru.hussein.@pmo.go.tz
Alfei Daniel	NPC-EWS	Alfei.daniel@undp.org
Clement Maganga	Finance and Admin EWS	Clement.maganga@undp.org
Ewald Boniface	Economist-PMO	Ewald.boniface@pmo.go.tz
Lemmy Mganga	Engineer-TMA	
Hamza Kabelwa	Director, Forecasting -TMA	

ANNEX E. CONSULTANTS CODE OF CONDUCT FORM

Evaluators/reviewers:

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 limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation/reviewer Consultant Agreement Form

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

Name of Consultant: Dinesh Aggarwal

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

Signed on behalf of the team at Noida, India

Signature:

21st August 2018

AUDIT TRAIL

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP CO	1	Cover Page	Missing project numbers on the cover page	Corrective action done
UNDP CO	2	List of Acronyms	Instead of MKUKUTA, use the English abbreviation, instead, NSGRP – National Strategy for Growth and Reduction of Poverty	Corrective action done
UNDP CO	3	List of Acronyms	Harmonize the use of MoW and MoWI in the report	Corrective action done
UNDP CO	4	List of Acronyms	UNDP is missing	Corrective action done
UNDP Project Team	5	Executive Summary Summary of conclusions	Change of text from "However, the issue in this case is that increased reach of the early warning system is not leading to increased benefit from improved climate information, drought or early warnings. This is because there is no effective use of the newly created early warning information dissemination network. For example, since the time (March 2017) the network has been established, only 3-4 messages have been sent to the target beneficiaries" To "However, the issue in this case is that increased reach of the early warning system is still inadequate however efforts are carried on ensuring the weather information reach the end users"	The original text better represents the situation at TE. Original text restored
UNDP CO	6	Executive Summary Summary of Conclusions	Explain how "the performance on the front of 'strengthen availability of information for responding to climate change' has not been that good despite the system being in place"	Additional text provided to explain this
UNDP CO	7	Recommendation 1	I don't really like this recommendation coming first. This is more a recommendation on the process of doing a terminal evaluation, rather than something more substantive about the project. I would put it as the last recommendation	This is something coming from the format of the TE report provided in the TOR for the last Chapter of the report (Conclusions and Recommendations). The format deals with the aspects dealing with the project design first. The recommendation numbers in the Summary and the conclusions chapter has been kept the same to avoid any confusion.
UNDP CO	8	Recommendation 4	I think that TMA have been disseminating information through various channels – TV, newspapers, radio etc. They don't rely just on mobile phone.	Yes, TMA has been historically using a number of means for disseminating information. However, in the present case the emphasis is on the word 'Early'. That is one of the reasons that the project design provided for mobile telephony as the means to

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				communicate the 'Early Warning'. The idea of this recommendation is that in the places where mobile phone network has limited geographical coverage or is not available, there is no point to use mobile phones as a means to communicate the likelihood of an event and the measures required to be taken by the community. Additional text provided to make it clear
UNDP CO	9	Recommendation 8	Similar to Recommendation 6	Recommendation 6 deals with the policy and regulatory requirements to facilitate commercial selling of weather data and data products. Whereas, Recommendation 7 suggests some of the weather products and applications which may be explored to have a viable business model Clarification provided No changes in the report
UNDP CO	10	Recommendation 9	Is this different to recommendation UNDP 4?	Recommendation 4 emphasises the need for having an alternative means to communicate the 'Early Warning'. Whereas this recommendation suggests one of the alternative ways to communicate. The two recommendations can be combined in one, but then it will become a bit lengthy and confusing regarding the suggested actions. Also, this will restrict exploration of other possible means of communication (e.g. broadcasting over public address systems etc.)
UNDP CO	11	Section 2.5 Main Stakeholders	UNDP is missing	Corrective action taken
UNDP CO	12	Section 3.1.1 On the statement "while using the score card same set of people should be used in the baseline and the end project assessment"	I don't agree that using the same people minimizes bias. Instead of using the same people, maybe a more robust scorecard verification should be used or developed	Agreed, text modified to take care of this
UNDP CO	13	Section 3.1.1 On the statement "The project objectives and the two Outcomes were clear, predictable and feasible within the implementation timeframe of the project"	Predictable in what way?	Following additional text provided to clarify this "The Outcomes were predictable, means that at the time of project design the activities and the corresponding Outputs specified in the 'Project Design' were leading to the desired Outcomes of the project"
UNDP CO	14	Table 9, Sl. No. 7, column Comments at TE On the statement "Could not be tested as simulation exercise was not carried out"	Could not be tested as simulation exercise was not carried out	Meeting with the beneficiaries during the TE clearly pointed out that wherever mobile phone is available the communities were reachable. What is being mentioned here is that the assumption at the project design that the communities will participate in the simulation exercise could not be tested as such exercises did not get carried out during project implementation.

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP CO	15	Table 9, Sl. No. 10, column Comments at TE On the statement "Could not be tested"	There was a meeting in Morogoro in April whereby the Government, through the Director of DMD, indicated willingness to incorporate the project's activities into the national budgetary frameworks to support the ongoing operations of the monitoring system. More recently the Prime Minister instructed the relevant agencies to budget for it.	Accepted, the language modified to take care of this.
UNDP Project Team	16	Section 3.1.2 On the components of the increased cost of operations due to the project	The salaries will be covered by Government, and budget for it will come from national budget. Prime Minister Office has officially took over all the operation for EOU, all related costs has been included starting from this year budget 2018/2019	Agreed But this is unlikely to change the situation. Resorted the original text
UNDP CO	17	Section 3.1.4	What does the acronym refer to	It was a typo mistake Correction done
UNDP CO	18	Section 3.1.5 On the bullet point "Develop a Lessons learnt report"	Is this a repetition of the second bullet?	Yes, it is a repetition. Correction done
UNDP CO	19	Section 3.1.6	I think we should also mention that this is a multi-country implemented project and there were lots of benefits, lessons sharing etc. Also, the regional office support was there…. including procurement of the automated weather station. This is another comparative advantage.	Additional text provided to account for this
UNDP CO	20	Section 3.1.6	What is AAP?	AAP stands for 'Africa Adaption Program'. AAP was a multi country project in Africa which was funded by Government of Japan and executed by UNDP This is included as a footnote as well to clarify
UNDP CO	21	Section 3.1.7	Repetitive to the Section 3.3	This is a comment No action taken
UNDP CO	22	Section 3.1.8	Position of UNDP in Steering Committee	Additional text provided
UNDP CO	23	Section 3.2.1 On the statement "However, some of these recommendations were generic in nature and did not provide specific action points"	Is this correct?	Cross reference to Table 11 Is provided to clarify this
UNDP Project Team	24	Table 11	Text in the Column "Comments at TE" changed for a number of rows	Original Text is a better representation of the situation. Original text restored

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP Project Team	25	On Section 3.2.1 On the statement "Monitoring and Evaluation activities were implemented, however few Quarterly reports were generated but half year's report was generated for each year. The PIR reports were also produced as a tool progress to GEF projects. generated. "	This should be rephrased or deleted, the project implementations were adjusted basing on MTR recommendations PIR report is mandatory as a GEF tracking tool, this is prepared every year. In the 2017 PIR there is a section which indicated the progress made in 2016. Note the PIR presented accumulative achievements from the start of the project Changed the text	No action taken During the mission only PIR for 2017 could be provided. PIR for other years could not be made available in spite of a specific request for it. Also quarterly reports could be provided only for three quarters. Reports for other quarters could not be made available in spite of specific request for it. Original text restored
UNDP CO	26	Section 3.2.4	What does acronym APR refer to	Clarified APR stands for 'Annual Performance Report'. At some places UNDP uses APR terminology and some places it used PIR
UNDP CO	27	Section 3.2.5 On the statement "only a couple of quarterly reports could be shared	A couple?	Number of quarterly reports shared has been provided. Additional text provided to clarify further.
UNDP Project Team	28	Section 3.2.5	Rating for M&E Plan Implementation changed from Marginally Satisfactory to moderate Satisfactory	Original raring restored to align with the rating scales to be used as per TOR
UNDP Project Team	29	Section 3.3.1.1 Indicator 2 On the issue of data not being transmitted automatically	Deleted the text "Out of the 10 hydrological stations at Pangani, five are transmitting data automatically, but for the the other five (float type) the automatic data transmission system doesn't work and the data has to be retrieved manually. Due to this, the objective of getting the real time field data automatically will is hampered." I think this is due to a technical issue that is being resolve. The info will be sent automatically	What is being reported is the situation at the time to TE The situation may get corrected Restored the original text
UNDP CO	30	Section 3.3.1.2 Outcome 2.3	No achievement? But things were achieved	This sentence appeared due to change in the text done by the Project Team Original Text restored
UNDP Project Team	31	Section 3.3.1.2 Outcome 2.3	Text Changed	Original Text restored
UNDP CO	32	Section 3.3.1.2 Outcome 2.3	What is the meaning of sentence? "The project work in two divisions (Makata and Kibutuka) of Liwale district	It as a language problem Text modified to clarify this

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP Project Team	33	Section 3.3.1.2 Outcome 2.3 On the observation that only there four messages were received on the phone provided by the project	Deleted the text "For example, since the time (March 2017) the network has been established, only 3-4 massages has been sent to the target beneficiaries." This happened only in Ruvuma Basins and not in Pangani basin. The rate here should change to satisfactory	As per the interaction with the communities during the mission and also as confirmed by the report of a consultant (a consultant by appointed by the project to see the impacts of the project. The report was shared during TE). This short coming was there in case of both the districts Original text restored
UNDP CO	34	Section 3.3.1.2 Outcome 2.3	There is a difference between sent and received. TMA say they send, however, it seems some beneficiaries are not receiving. Two different issues require two different solutions	Yes, the reason for not receiving the messages could be something other than non-sending of the messages by TMA. What is being pointed out here is that the objective of providing the early warning using the newly created network is not achieved and not the reasons for it.
UNDP CO	35	Section 3.3.2.1	What about the Paris Agreement and INDCs? Early warning was one of the areas in the adaptation commitments	INDC and Paris Agreement has to do more with the climate change mitigation aspects and not with the climate change adaption. However, it is true that INDC submitted by Tanzania has highlighted its climate change adaptation needs as well.
UNDP CO	36	Section 3.3.2.2	Maybe UNDAP II could also be included	Additional text provided to include UNDAP II
UNDP CO	37	Section 3.3.3 On the statement "Also the performance on the front of 'strengthen availability of information for responding to climate change' has not been that good"	I don't get this. How has availability of information not been strengthened? More detail please.	What is being said here is that in-spite of the dissemination / communication system being in place the actual performance has not been good, due to non-completion of the flood modelling and due to non-utilisation of the newly created network to communicate the early warning. Additional text provided to clarify this
UNDP CO	38	Section 3.3.4	May be useful to also reference FYDP II	Additional text provided to refer to FYDP
UNDP Project team	39	Section 3.3.4	I agree with Aaron; this is the fourth or fifth time that is appearing. The report is too repetitive for no reason.	TE team also agree. But the problem is that the report format and the questions for TE are given in the TOR. The suggested report format and the questions to be answered as given in the TOR are overlapping. This is the main reason for some repetitions. No action taken
UNDP CO	40	Section 3.3.5 On the statement "50 community representatives from Liwale district and 72 from Arumeru district were selected to form a district crowd sourced platform"	Kindly disaggregate this	Additional text provided to take care of this
UNDP CO	41	Section 3.3.6	This doesn't make much sense. Inertia means apathy/lack of action. What is really meant here? A shift?	Wording changed from "inertia' to 'momentum'

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP Project Team	42	Section 3.3.6	Take note, we did high level launching under the presence of Prime Minister. The key messages and instruction given to TMA, Water Basins Authorities and Ministry of Water and Irrigation was to ensure the sustainability of the stations, responsible Ministry/ Agency or Institution directed to allocate funds starting from this year budget on wards to support operations and maintenance.	There is no evidence that these messages were followed up with concrete actions. During the mission the interactions were made with the water basin authorities, wherein it was clearly pointed out by them that this has not actually happened. In fact, in case of one of the water basin authority large bills for data communications were pending, with no funds with the water basin authority to pay for the bills.
UNDP CO	43	Chapter 4	Make sure the wording of the recommendations is the same in this section and in the executive summary	Agreed
UNDP CO	44	Chapter 4	On the statement "However, the issue in this case is that increased reach of the early warning system is not leading to increased benefit from improved climate information, drought or early warnings" I don't agree. Information has been disseminated through various channels. The project didn't only produce information for phones.	Please see response to comment numbered 8
UNDP CO	45	Section 4.2	Could be good that it is recommended to scale up the project to cover other areas of the country and the remaining seven water basins.	Agreed Included it in the set of Recommendations (Recommendation 6)
UNDP CO	46	Section 4.4 On the title of the section	This is not a good title. Please reword it.	This is the title provided in the TOR (Annex F: Format of the report). Unless there are strong reasons to deviate it is advisable to go as per the format provided in the TOR. No action taken
UNDP RTA	47	Table 1	Complete highlighted and other parts of the table	Corrective action taken
UNDP RTA	48	Table 1	Include the geographical areas covered by the project	Additional row provided in the Table along with the required information
UNDP RTA	49	Executive Summary Introduction and brief description of the project	Include the project outcomes / components here	Additional Table (Table 20 with required information provided
UNDP RTA	50	Executive Summary Introduction and brief description of the project	Briefly, how does the project fit in the country's priorities, strategies and those of UNDP	Additional text provided
UNDP RTA	51	Executive Summary Introduction and brief description of the project	What are the most significant changes (socio-economic, environmental, political) that took place since the beginning of the project, in the country and/or project areas?	Additional text provided
UNDP RTA	52	Executive Summary Attainment of results table	Combine this with the Table for Terminal Evaluation Ratings	Suggested action carried out
UNDP RTA	53	Executive Summary Evaluation Ratings	Include brief comments justifying/explaining the rating in an additional column	The format of the Table used for reporting the ratings in the Summary was as per the format provided in the

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				TOR. However, based on the comment modification in the format is being made. Suggested action taken
UNDP RTA	54	Executive Summary Summary of conclusion On the statement "the project has been able to achieve most of its objectives, 'to strengthen the climate monitoring capabilities, early warning systems"	Are there more than one objectives? Check formulation: most of its outcomes?	Please see the objective statement. There are so many 'commas' and 'ands' in it. This has already been explained in the next sentence
UNDP RTA	55	Executive Summary Summary of conclusion On the statement "due to some shortfalls in the achievement of the results, there is a bit of lacking in terms of effectiveness and efficiency of delivery"	Explain briefly on this	Additional text provided
UNDP RTA	56	Executive Summary Recommendation 1 On the statement "Use of capacity score card as a means of verification should either be done away with	This is a very strong recommendation and needs to be clarified. Is it just for this project or generally? The starting point should be the relevance or usefulness of the Score Card, generally and in in this project particularly	Text modified
UNDP RTA	57	Executive Summary Recommendation 3	Why regular calibration is needed	Explained as follows Periodic calibration is a very standard requirement of any measuring instrument. The periodicity varies from instrument to instrument and is generally specified by the manufacturer / supplier of the instrument No action taken
UNDP RTA	58	Executive Summary Recommendation 4	Are there examples of the alternatives that work in the Tanzania context	Text modified to include the examples which may work
UNDP RTA	59	Executive Summary Recommendation 5	What is the recommendation	Text modified to make it explicit
UNDP RTA	60	Executive Summary Recommendation 6	Good recommendation but link it to the project. Is it because this project has been very successful and beneficial? If left like this, it's just a general recommendation that can be made without having to reference this project.	Additional text provided
UNDP RTA	61	Executive Summary Recommendation 7 and 8	What's the difference between the two recommendations? If none, please combine them. They both talk about sustainability and affordability, which can be afforded through a cost-recovery approach by TMA.	The first one is for the need to have proper policy and regulation The second one is regarding the kind of weather data products which can be sold commercially.

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP RTA	62	Executive Summary Recommendation 9	This is linked to Recommendation 4, as one of the alternatives	Clarified Yes, this is linked to recommendation 4 No action taken
UNDP RTA	63	Executive Summary Recommendation 10	What do the payments to telecom companies are made? Need to be understood in relation to this project.	Explained as follows; Telecom companies charge money for providing the communication of data from the measuring device (weather station to the central server). Also, the telecom companies charge money when an SMS is sent regarding a warning. No action taken
UNDP RTA	64	Section 1.2 On the presentation regarding initial findings	To whom these were presented	Additional text provided
UNDP RTA	65	Section 1.2 On the site visits to the pilot of the pilot projects	How many and which project sites were visited and what % of all sites does this represent	Clarified that these details are already there in Annex D No action taken
UNDP RTA	66	Section 1.2 On the statement "Some of the documents to be reviewed were also received after the mission"	This is a constraint of the process that could be included in a separate sub-section on constraints and limitations	Evaluations are of the view that it is not a constraint No action taken
UNDP RTA	67	Section 1.3 "In the draft report the chapter on findings were split into three separate chapters due to the size of the text.	Unless it was suggested by the CO, there is no need to split into separate chapters. These could just be presented as 3.1; 3.2; 3.3 in the same chapter, without losing the logic or content	Reformatted the report to have only one chapter of findings
UNDP RTA	68	Section 3.1.1	Instead of repeating the log-frame here, it is expected that the report presents and analysis of the objectives and outcomes with respect to their clarity, whether the targets set were realistic and achievable with respect to the baselines. It is not clear what forms the basis for concluding that the objectives and outcomes were clear, …. The analysis seems to be restricted to the Scorecard, which is one means of verifying one objective.	The results framework needs to be provided at least once in the main body of the report. This is considering that the results framework forms the basis for the entire evaluation. The log-frame has been referred to a number of times in the TE Discussions has been restricted to the "Score Card' as there are problems with it. There are no issues and problems with the rest of the log-frame. No action taken
UNDP RTA	69	Table 9 Row 1, Colum 3	Needs elaboration (see good example from Assumptions 6 and 9 in this table)	Additional text provided
UNDP RTA	70	Section 3.1.3 Last Paragraph, on the text "However, there is no evidence to suggest that the lessons learnt from these projects were incorporated in the design of the present project"	What is the basis of this conclusion: documents or discussions with stakeholders?	Additional text provided
UNDP RTA	71	Table 10	Which questions is the report answering with this list of stakeholders?	Clarified that this answers the question; Were the partnership arrangements properly identified and roles and

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				responsibilities negotiated prior to project approval (please see the Box in the beginning of the Chapter) No action taken
UNDP RTA	72	Section 3.1.7	No need for repetition	Clarified as follows: "The format of the report suggested in the TOR is being followed. To avoid repetition reference is being made to an earlier section of the report where the relevant information can be found" No action taken
UNDP RTA	73	Section 3.1.8 Last paragraph	Was this in accordance with what was set out in the project document?	Additional text provided to clarify this
UNDP RTA	74	Section 3.2.1 On the main questions for the TE	Ensure these questions are addressed at the end of the MTR response table	Clarified as follows: "MTR response Table deals with the recommendations at MTR, the Management response and the observations at the time of TE Other aspects of the adaptive management are provided in the subsequent paragraphs" No action taken
UNDP RTA	75	Section 3.2.1 Last paragraph On the number of quarterly reports	2 quarters of the entire project duration? Please confirm and write accordingly	Text modified to say three quarterly reports were made available during the TE
UNDP RTA	76	Section 3.2.2 Last paragraph	Elaborate on the partnership arrangements that were established (beyond the Steering Committee which is an oversight structure of the project).	Additional text provided that the required information is already there in Table 10
UNDP RTA	77	Section 3.2.3 On the statement "As the activities mentioned in the above table have been performed by these government agencies, there has been the required in-kind contribution by the government agencies"	Did the evaluation team make attempts to establish the expenditures of the different government departments mentioned in table 13? Are these expenditures, or even budgetary allocations, close to the amounts in column 3 (Table 13)	Clarified as follows: "The TE team is in no position to determine the expenditure by different government departments for different activities. The only way to validate this is the tracking of co-financing by the project team."
UNDP RTA	78	Table 15, Row 2 On the MS rating for Indicator 2	Explain why the rating is MS if this was achieved	Clarified that the word Achieved in the refers to the self-assessment by the Project Team and it is not the assessment of the TE team
UNDP RTA	79	Table 16, Row 2.2, Column 3 on the statement "Acquired the required equipment of operations of emergency operations unit"	Is the unit operational	Clarified as follows: As per project team the unit is operational TE team did not visit the unit to see the operations
UNDP RTA	80	Table 16, Row 2.3 For the U rating for activity 2.3	What are the gaps/ shortcomings leading to the Unsatisfactory" rating?	Clarified as follows: This is already explained in the paragraphs after the Table. Additional text provided to clarify this
UNDP RTA	81	Table 16, Row 2.4, Columns 2	Were these done	Clarified as follows:

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
		For activities 2.4.2, 2.4.3, 2.4.4		These were not done. That is the reason that the rating is MS
UNDP RTA	82	Table 16, Row 2.7, Column 3	What was the result	Clarified as follows: At the time of TE the report was yet to be submitted by the consultant. Discussions were held with the consultant. Also, discussion on this were held with the officials of TMA
UNDP RTA	83	Table 16, Row 2.7, Column 3	Is there a strategy in place	Clarified as follows: At the time of TE report was under preparation. Discussions were carried out with the consultant. The strategy would be in place only after deliberations on the report. Discussion were also held with the PMO and TMA officials on this subject, which indicated that the government is positive to have such a strategy in place
UNDP RTA	84	Section 3.3.1.3, Para 3	The bottom line is that the Objectives were not rated due to *******. The shortcomings could have been overcome through either capacity building of project team or use of alternative methods. The recommendation by the Evaluation Team is valid, but should not be used to mask the lack of a rating for the objectives	Clarified as follows: "The rating for the project objective has been done. Additional text provided to explain the basis for rating (in the absence of score card). It is true that this short coming could have been overcome by capacity building of the project team. However probably such capacity building was to be done much before and not at the time of TE"
UNDP RTA	85	Section 3.3.1.3, Para 5	Be clear on which objectives the discussion is referring to. According to this statement, there are project goals and objectives (how many?), and then goals and objectives of the outcomes (how many each?).	Clarified as follows: "This is mentioned in the next sentence"
UNDP RTA	86	Section 5.1.3, Para 6 On the rating of the achievement of project based on the achievement of Outcomes of the project	This sounds like it's just being thump-sucked for convenience	If there is an alternative, it may be suggested
UNDP RTA	87	Table 18, Heading of the Table	How many objectives did the project have? This suggests more than one "Project Objectives."	Clarified as follows: "The many objectives of the project are contained in the statement of the project objective"
UNDP RTA	88	Section 3.3.3, Para 1 On the statement "Although, there are some minor issues with the achievements of the results"	Is this considered a minor issue	Clarified as follows "Flood modelling was one of the many activities which were to be performed under the project. There is no precise definition of minor and major. The word minor has been remover to clarify this"
UNDP RTA	89	Section 3.3.4 On the main questions for TE	The question "**Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives"** **Have not been answered**	Additional text provided
UNDP RTA	90	Section 3.3.5 Paragraph 2	What is the evidence	Clarified as follows:

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
				"The project is in line with the mentioned development priorities for the country. No separate evidence is required"
UNDP RTA	91	Section 3.3.5 Last Paragraph	Provide an overall assessment of the progress/success made by the project on "Mainstreaming."	Clarified as follows: "The TOR does not require an overall assessment of the progress/success made by the project on 'Mainstreaming'"
UNDP RTA	92	Section 3.3.6, para 2 On the statement "Under the project a strategy has been worked out to generate some revenues by engaging the private sector and sell weather products	Is this feasible	Clarified as follows "Please see the reply to comments in Table 16"
UNDP RTA	93	Section 3.3.6, para 2 On the statement "It is expected that TMA will be able to take care of the increased expenses partly by selling the weather product and partly by budgetary support.	Is this confirmed by TMA or just an unconfirmed expectation	Clarified as follows "Please see the reply to comments in Table 16"
UNDP RTA	94	Section 3.3.6, para 3 On the statement "Therefore, it is expected that the Pangani Basin Authority will be able to take care of the additional recurring expenses due to the project"	Is there an expressed commitment by the Basin Authority to do this	Clarified as follows: Yes, this was confirmed by Pangani Basin Authority
UNDP RTA	95	Section 3.3.7	Ensure that the discussion of impact is at a higher level than just the activities that the project has undertaken? What has changed	Clarified as follows: TE has been carried out as per the questions for the TE (as provided in the TOR
UNDP RTA	96	Section 3.3.7, Para 3 On the statement "The project also aimed at incorporation of adaption:	Only aimed or attained	Additional text provided to clarify this
UNDP RTA	97	Section 3.3.7, Para 4	What environmental changes has the project fostered? This is not about the negative environmental impacts of the project? Has it led to overall improvements?	Additional text provided
UNDP RTA	98	Chapter 4, Para 3 On the statement "Although there are some issues mentioned in the above paragraph)	There are no issues mentioned in the above paragraph	Text modified

Terminal Evaluation Report Reviewed and Cleared By:

Commissioning Unit

Name: _____

Signature: _____ Date: _____

UNDP-GEF Regional Technical Advisor

Name: _____

Signature: _____ Date: _____

(to be completed by the Commissioning Unit and UNDP-G)