DEMOCRÁTIC REPÚBLIC OF SÃO TOMÉ E PRÍNCIPE

FINAL EVALUATION REPORT

"Strengthening climate information and early warning systems in São Tomé and Príncipe for climate resilient development and adaptation to climate change"

SÃO TOME AND PRINCIPE – JUNE 2019

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LIST OF ACRONYMS

CLR	Local Risk Committees
CONPREC	National Council for Risk Prevention
CP	Country Programme (Programa Nacional)
CPAP	UNDP Country National Action Plan
CSO	Civil Society Organization
DGA	Directorate General for the Environment
DGRNE	Directorate of Natural Resources and Energy
EMAE	National Water and Power Company
ENAPORT	National Port Administration
ENASA	National Airport and Air Traffic Administration
EWS	Early Warning System
FE	Project Final Evaluation
GdSTP	Government of São Tomé and Príncipe
GEF	Global Environmental Facility
INM	National Meteorological Institute
LDC	Least Developed Countries
MTR	Project Mid-Term Review
NAPA	National Adaptation Programme of Action
NGO	Non-Governmental Organizations
NHMS	Project "Aumento da Capacidade das Instituições Hidrometeorológicas Nacionais"
PIU	Project Implementation Unit
PNUD/UNDP	United Nations Development Programme
PONC	Normalized Protocol for Communication
PRODOC	Documento de Projeto
RAP	Príncipe Autonomous Region
SNPCB	National Fire Services
SOP	Standardized Operational Procedure
STP	São Tomé e Príncipe
UN	United Nations Organization
UNDAF	United Nations Development Assistance Framework
WFP	World Food Programme
WMO	World Meteorological Organization

Structure of the Evaluation Report

The Final Evaluation Report is structured along the general line of UNDP's guidelines. It starts with an Executive Summary of the report, giving a brief context in which the project was inserted, as well as its background, the findings identified by the Evaluation Mission Team, the main conclusion reached and the principal recommendations formulated.

This is followed by an Introduction, which outlines in greater detail the purpose of the Evaluation, the scope, and methodology used and the constraints that the mission faced during the Evaluation.

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- Executive Summary
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PART I. EXECUTIVE SUMMARY

Project Components:

Component 1: Technology transfer to climate and environmental monitoring infrastructures.

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

Expected Outcomes of the project:

Outcome 1: Increased capacity of national hydro-meteorological institutions (NHMS) to monitor extreme weather conditions and produce sector-specific weather forecasts.

Outcome 2: Efficient and effective use of hydro-meteorological information to generate early warnings and support long-term development plans.

TABLE 1. PROJECT SUMMARY

Programme Period:	2013-2017
Atlas Award ID:	00074452
Project ID:	00086865
PIMS #	5103
Start date:	September 2013
End Date	September 2017
Management Arrangements	NIM
PAC Meeting Date	31st July 2013

Total resources required: US$ 43,895,000

Total Resources Foreseen:

- GEF/LDCF US$ 3,600,000
- PNUD US$ 795,000
- Outros US$ 39,500,000

PROJECT CONTEXT

São Tomé and Príncipe (STP), is an archipelago consisting of two main islands (São Tomé and Príncipe) and four islets located in the Gulf of Guinea 350 km from the west coast of Africa. The country is an LDC that has a population estimated at around 200,000 inhabitants. São Tomé and Príncipe is subject to climate risks due to its specific climatic, geographic and socio-economic context. Coastal communities, where the main economic activities, fishing and agriculture, and where the majority of the population live are particularly vulnerable.

The study of the National Programme for Action Adaptation showed that there has been significant variability in the climate pattern in recent decades, with rainfall decreasing at a rate of 1.7 mm/year between 1951 and 2010, and that this reduction in rainfall will disturb the hydrological pattern by changing the rainfall/drainage ratio. Due to reduced recharge, the quality of groundwater supply will be reduced by a downfall in rainwater infiltration, thus decreasing the groundwater table and the dilution effect for saltwater intrusion.

At the same time, episodes of heavy rainfall are expected to increase, leading to more frequent flooding, which will cause further soil erosion. Floods can also damage infrastructure (e.g. roads, buildings, water supply infrastructure and housing), increase the spread of water-related diseases, damage or destroy crops and cause landslides and falling rocks. In the case of São Tomé and Príncipe, where it was found that the largest increases in rainfall occurred in March and April, with increases of up to 2 mm day in the 1990s and 2000 compared to the 1980s, the danger of sudden flooding is increased.

From the above, it can be seen that the main problem induced by climate change faced by the population of STP that was to be addressed by the project is that climate change may further increase the frequency of severe climatic conditions associated with convective activity and increases in sea level, enhancing the frequent intrusion of salt water, coastal erosion and the likelihood of sudden floods. The governmental institutions of STP lacked the technical capacity, managerial capacity, physical resources and financial resources to overcome or deal with the expected changes. The rural population, although it had perceived already the impact of Climate Change, as expressed during the activities of the NAPA, lacked the capacity, resources and financial assistance to adapt and overcome the worsening climate conditions.

In order to protect the lives of its citizens and their sources of employment, it was clear that STP needed to modernize its climate monitoring system to one capable of collecting reliable data in a timely manner. The system also needed to be capable of analyzing the data and disseminating the findings to end users, both within STP and globally. In other words, an Early Warning System (EWS) capable of effectively and consistently monitoring weather/climate parameters in STP and a civil defense organization that could mitigate its effects and assist the communities in adapting to long-term changing weather patterns. term. The project document noted that although STP had benefited from some international assistance and programmes related to climate monitoring at the time the project was designed, "the capacity of both the hydrometric and meteorological services sectors was weak, as the monitoring network was almost non-existent for the first sector and reduced for the second, requiring significant investments in equipment, communication systems, infrastructure and support facilities (satellite, radar or proxies) to resume forecasting activities. Above all, the sustainability of these services had been undermined due to a lack of financial investment and human resources capacity for their operation and maintenance. In São Tomé and Príncipe there was no flood forecasting or warning and, although hydrological data was scarce, there was at the time of the project's design, no formal sharing of data and information with the Meteorological Services. Similarly, there was no alert system for meteorological events in STP and meteorological and climate data and information were dispersed among the various stakeholders".

This project was designed to address these shortcomings.

FINDINGS OF THE EVALUATION MISSION

FINDINGS ON THE PROJECT'S DESIGN, EXECUTION AND MONITORING:

1) While the project design was extensive and did identify some of the potential risks (see Risk Analysis in the ANNEXED table for further details) it DID NOT outline a clear and realistic exit strategy to deal with those risks. The most obvious omission was that it did not identify sources of potential funding to ensure the project's future sustainability.

2) Closer monitoring of PIU implementation could have assisted in identifying some of the shortcomings outlined below. The periodic implementation reports were very process oriented, providing information on activities undertaken but not sufficiently analytical, in that they did not point effectively to possible problems such as deficiencies in the communications systems, security issues with the equipment purchased etc.

FINDINGS ON COMPONENT 1:

3) **Of the 28 automatic data gathering stations delivered** (2 synoptic, 14 meteorological and 12 hydro-meteorological stations), **a few are partially or totally inoperable**, due to a lack of maintenance and/or spare parts.

4) **4) The calibration equipment of the 28 stations was acquired to serve both the DGRNE and the INM. However, UNDP assures that it made the acquisition, but the NIM was never aware of its existence. For its part, DGRNE claims that it received solutions for calibrating the equipment and benefited from the installation of software on the computer, but the calibration equipment is not in its possession. Therefore, these institutions cannot guarantee that the information they collect, analyse and disseminate is now fully accurate. The enclosures of several of the stations visited were found unlocked. Anyone could go inside and vandalize them.**

HYDRO-METEOROLOGICAL SERVICES (DGRNE)

5) **Hydrology services at DGRNE level operate only during normal office hours**, so it is not easy to obtain relevant data that are collected after that time or at weekends, because although hydro-meteorological data are collected in the DGRNE computer database, 24 hours a day, these data are not available for the early warning system, because DGRNE only operates during normal office hours, which is a constraint for the operation of SAP.

6) **Hydrometeorology services have not issued daily bulletins for several months.**

METEOROLOGICAL SERVICES (NIM)

7) Two of the four students funded by the Project to do basic meteorological training were not successful. However, one of them has already returned to the country and joined the NIM as a

meteorological observer. The other two, who were successful, are still in Portugal and will finish their training in July, but it is not known if they return to the country or not.

8) In the opinion of the Evaluation Mission at NMI level, the SAP does not seem to occupy a predominant place, since the collection and dissemination of data requires a well-structured organisation. There is no systematic and timely dissemination of meteorological data. The dissemination depends on the good understanding of the technicians (service meteorologists) when they are available, without a strict timetable and responsibility. The CONPREC technicians who must disclose this data to the Local Committees also depend on this disclosure. However, in the NIM everything is organized for the supply of meteorological data to ENASA, which pays the NIM for this service.

9) Despite the position of strength that INM has, given its monopoly of key information to ENASA, during the discussions on this matter, the Evaluation Mission noted a certain reluctance of INM to impose a more realistic payment rate for the services it provides to ENASA, since ENASA (National Airport Services Company) paid INM 14,000 Dobras (About U$ 500) per month, when the project was elaborated, an amount already quite insufficient for the services provided by INM to ENASA. Since then, despite the improvements that INM obtained with the implementation of the project, ENASA unilaterally reduced its monthly payment to 6,000 Dobras, that is, U$ 240 per month, less than half of what it had paid before.

FINDINGS ON COMPONENT 2:

10) **There is a lack of clarity as to who: (a) leads the EWS; (b) has the authority to recommend a state of emergency; (c) coordinates the various actors involved in disaster mitigation.** Is this the function of CONPREC/CONAE, or the Fire Department (Corporação de Bombeiros de São Tomé e Príncipe? This lack of clarity was already pointed out in the Protocolo Operacional Normalizado de Comunicaçã (PONC).

11) **Communications systems were not integrated.** The Fire Department informed that while they did listen to the daily weather briefings emitted on the CONPREC frequency, they did not use the same frequency to respond to emergencies but rather used their own frequency and equipment.

12) **The role of other actors such as the Red Cross (Cruz Vermelha) the Army, Police, District Governments (Câmaras) etc. in an emergency are not clear**. Some recommendations were made in the PONC, but it is not clear they were acted on.

13) **No simulations of disasters were carried out**. This limits the capacity to identify and correct the voids and misunderstandings inherent in the proposed EWS as it exists today.

14) **Project equipment was improperly appropriated by individuals.** During the Evaluation Mission's visit to the 4 District Chambers (Cantagalo, Caué, Lembá, Mé-Zóchi), it was found that in the first three districts, the radio equipment and chainsaws supplied were no longer available to the respective local risk committees (CLR), as they remained in the possession of the previous City Councilors, who were removed after the elections held in October 2018 (as well as the motorcycles supplied under another UN project).

15) **The radio system between COMPREC, the communities and the District Governments is far from fully operational**. Several communities in the north of Sao Tome cannot use the COMPREC radio network due to areas where the signal cannot be retransmitted. In the south, at least one community (Rio Grande) cannot access the network either as the community does not have electric power, thus not being able to recharge the equipment. Some have received telephones, but obviously these do not allow 24 hour monitoring and require periodic financial recharging for which no provision was made.

CONCLUSIONS OF THE EVALUATION MISSION

ON RELEVANCE:

The project was at the time of its design, and is still very relevant.

- Sao Tome is a small island LDC whose population is heavily dependent on artisanal fishery and non-irrigated agriculture and as such, its economy is heavily dependent on its climate.
- Practically all its population is spread out along a narrow coastal belt next to the sea and short rivers all of which are subject to sudden large fluctuations in water level.
- Its population has low educational indexes and its road and telecommunications infrastructure is very deficient.
- Governmental institutions are weak in terms of both the available budgetary and human capital resources.
- Furthermore, the project is consistent with São Tomé and Príncipe's international obligations under the Rio Treaties. It is also aligned with a series of policy and strategy documents such as: the UNDAF for STP; the CP for STP; the CPAP; the country's NAPA and others.

ON THE PROJECT DESIGN:

The project design covered several aspects, but in the opinion of the Evaluation Mission, it did not sufficiently take into account the identified risks, mainly with regard to the sustainability of the project, as the underlying logic (inputs purchased, activities leading to outputs, leading to results, etc.) was consistent with the objectives of the component. However, at the time it was designed, the risks identified were not realistically assessed and alternative mitigation measures were not identified. Three key risks were not taken into account with sufficient rigour:

- The first was the support structure for the project. Two different entities (the DGRNE and NIM) deal with meteorological data gathering, analysis and data dissemination. **This duality should have been brought up with the government in order to bring together the hydro-meteorological and the meteorological services prior to the project's inception or early on in its implementation.**

- The second was the lack of a clear "sustainability strategy" that included clear sources of independent financial support that could ensure the continuation of the benefits of the project beyond its duration. An exit strategy with a sustainability plan covering future financial and

human resource requirements should have been an integral part of the project design. The sources of extra-budgetary funding from DGRNE and NMI clients should have been identified and the basis for securing such funding should have been established before the start of the project, as it appears that currently the project activities are not continued in several respects due to lack of financial sustainability, as claimed by DGRNE.

- A third referred to a possible change in the responsibilities of the main actors. The project had at its core the CONPREC which under a governmental decree (Decreto-Lei nº 17/2011) was given the responsibility of coordinating all matters referring to national emergencies including the EWS. Later, this was modified by a new law (Lei nº 04/2016) which attributed this task to the Fire Department. To date this has caused confusion for the implementation of the EWS. **A commitment to ensuring stability in the key counterpart structures should have been obtained prior to the project's inception.**

ON THE PROJECT'S IMPLEMENTATION (Efficiency):

While the project is in theory implemented through a national implementation modality (NIM), de facto a great deal of the administrative and coordinating functions were reserved by the UNDP office. This was mainly due to the fact that there was no single counterpart agency. Several Ministries and entities were involved.

ROLE OF UNDP

The UNDP office's role was in general terms carried out correctly. Procurement was made of most of the foreseen equipment as far as the budget allowed. The quality of the equipment and services procured was as foreseen. An MTR was carried out, although the quality of that report left somewhat to be desired, as it did not anticipate the problems that the project faced allowing for timely corrective action. Greater engagement in monitoring the work of the PIU would have been desirable. Proper accounting of project expenditures/disbursements was kept. Financial Tables are provided in Annex 1 of the report. The project was audited by private certified auditors early on in the project's life (2015). Since then, as far as the Evaluation Mission was able to detect, no further audits took place.

ROLE OF THE PIU

In the opinion of the Evaluation Mission, the PIU was the weakest link in the execution of the project. Proper monitoring should have identified some of the problems outlined in the section FINDINGS above. They should have been brought to the attention of both the Government and the UNDP office, so that appropriate and timely corrective actions could be taken. The Operational Protocol (PONC), which was drafted somewhat late in the project's life, already pointed to some of the problems the project was facing, but no remedial action was taken in this regard.

ON THE PROJECT'S LONG TERM SUSTAINABILITY:

As affirmed above, the sustainability of the project is in serious doubt if the problems outlined above are not properly addressed. To this effect, the Evaluation Mission will make a series of recommendations in the following chapter.

ON THE PROJECT'S IMPACT (Effectiveness):

To date the impact of the project has been very limited. The best one can say at this time is that the awareness of the potential hazards that climate related emergencies may cause has been raised in the communities, district governments, the NIM, the DGRNE, the Fire Department, CONPREC/CENOE etc. However, due to a series of relatively small but significant setbacks identified in the section FINDINGS above, the intended impact of the project, i.e. the establishment of a working EWS, is far from having been achieved.

OVERALL CONCLUSION OF THE EVALUATION MISSION:

In spite of an important investment having been made, for the reasons expressed above, the project has not yet achieved its objective of having a functional and effective EWS system based on accurate meteorological information from throughout the country.

If a serious emergency were to happen TODAY, the system would fail to respond. Therefore, if nothing further were to happen, the rating the Evaluation Mission gives as of today, is reflected in the following table:

TABLE 2 – OVERALL RATINGS

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

Note: Ratings Key is given in Annex VI and Justification of rating is given in Annex V.

IMPORTANT NOTE: This said, the gaps identified can be addressed, as long as there is the will to make the necessary administrative decisions and modest financial resources required to render the system operational and sustainable. Such remedial actions would be key to making this project a successful one and a worthwhile investment of GEF funding.

To this effect, the Final Evaluation Mission makes a series of recommendations below.

RECOMMENDATIONS OF THE EVALUATION MISSION

TO THE GOVERNMENT OF SÃO TOMÉ AND PRINCIPE:

1. In view of the weaknesses noted by the DGNRE in the management of hydro-meteorological data, it is suggested that consideration should be given in the near future to integrating the hydro-meteorological service into the NIM in order to ensure that it does:

- consistency in the collection, treatment, accuracy, hours and mode of operation of the services, and frequency of the dissemination of climate information.
- the overall sustainability of both services by the provision of a pool of "client" users of meteorological data and water (such as ENASA, EMAE, ENAPORT, Cervejeira Rosema, shipping companies and others).

2. **Establish the legal and financial measures that will allow the consolidated meteorological services to charge "clients" for their services and create accounts they can manage directly with a view to ensuring the maintenance, repair and replacement of the equipment necessary for the provision of their services.**
3. **Ensure clarity in the Roles of CONPREC and the Fire Department (Corporação de Bombeiros) and their cooperation.**
    - CONPREC should be the center of the EWS, having the power to recommend to the Minister of Defense the declaration of a national or local emergency.
    - the Corporação de Bombeiros should be the operational coordinator and work with other concerned partners such as the District Governments (Cámaras) Red Cross, the Port Authority, the national health services, the police, the army AND MOST IMPORTANTLY the communities and their leaders, TO DESIGN AND UPDATE REGULARLY an Emergency Operational Plan.
4. **The Government should ensure that the Fire Department carry out periodic, regular "emergency simulation exercises"** so as to identify weaknesses in the EWS system BEFORE AN EMERGENCY OCCURS.
5. **The Government should ensure that the Fire Department carry out annual reviews of the assets that can be easily located and mobilized in case of an emergency such as:**
    - TRANSPORTATION – boats, buses, trucks and vehicles in public and private hands that can be used (temporarily requisitioned) in rescue and supply operations.
    - CONSTRUCTION EQUIPMENT -
    - SOURCES OF POTABLE WATER -
    - HEALTH SUPPLIES – Hospital beds, medical equipment, average stock of medicine (in hospitals and private pharmacies) , bandages, disinfectants, etc.
    - HEALTH HUMAN RESOURCES – Doctors by specialty, nurses, health technicians.
    - AVERAGE STOCK OF FOOD SUPPLIES – In warehouses, with WFP, with others etc.
    - OTHER SUPPLIES – Cots, mattresses, blankets, water filters, kitchen supplies, gas containers, portable kitchens and utensils.

After the reviews are finalized, "requisition protocols" should be signed by the Fire Department with the public and private sector owners of such assets. These protocols should spell out the care that the Fire Department will take to return fixed assets in the condition they were requisitioned and the obligation of the Government to pay for damages as well, as to reimburse for the use of fungible items such as fuel, food supplies, medicines etc.

6. **The Government should instruct the Police to recuperate immediately the equipment that this and other projects supplied for EWS purposes (radios, portable saws and motorcycles) that have been illegally appropriated by ex-civil servants of the District Governments (Cámaras).**

7. **The highest authorities of the Ministry of Infrastructure and National Resources with support of NIM should locate where the "calibration equipment" purchased by the project is and make it available to both NIM the DGRNE.**

TO THE UNDP/GEF

8. **Until such a time as Recommendation 2 above is implemented, there is the risk that the investment made may not produce the desired results. Therefore, the Evaluation Mission feels it is important to find from other projects or sources, funds to remedy the deficiencies outlined in FINDINGS 1 and 10 above.**

9. **For future projects, the Evaluation Mission recommends that the UNDP office monitor the work of the project PIUs with greater frequency and depth.**

10. **Again for future projects, the Evaluation Mission recommends that no Project Document be signed until it contains a detailed Exit Strategy. The strategy should contain plans for ensuring the post-project sustainability of the effort. Mainly, a "human resources stability plan", as well as "financial sustainability plan" that preferably relies on sources of extra-budgetary funding.**

PART II. CORE OF THE REPORT

PURPOSE OF THE EVALUATION

As per the "UNDP/GEF Terminal Evaluation Guidelines" for UNDP/GEF supported projects this Final Project Evaluation has the following purposes:

To promote accountability and transparency, and to assess and disclose the extent of project accomplishments.

To synthesize lessons that can help to improve the selection, design and implementation of future UNDP activities.

To provide feedback on issues that are recurrent across the UNDP portfolio and need attention and on improvements regarding previously identified issues.

To contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefits.

To gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

The aforementioned guidelines are designed to enhance compliance with both UNDP and GEF evaluation policies and procedures which are consistent and mutually reinforcing, and use common standards. The guidelines also respond to GEF requirements established to ensure that final evaluations of GEF-financed projects should include ratings for each of the following project design/implementation categories: relevance, effectiveness, efficiency, monitoring and future sustainability of project results.

SCOPE & METHODOLOGY OF THE FINAL EVALUATION

The Final Project Evaluation (FE), was carried out by an independent team of consultants. The Terms of Reference (TOR) of the mission were put together by UNDP in consultation with the Government of São Tomé and Príncipe and the contractual and travel arrangements for the evaluation were done by the UNDP Office in that country. In addition to evaluating the relevance, effectiveness, efficiency and future sustainability of the project activities in relation to the stated objectives, the Evaluation Mission is to review the management arrangements, identify any useful lessons that can be applied by UNDP/GEF in future projects and make appropriate targeted recommendations that stem from the evidence that the mission collected through their desk review and interviews of stakeholders.

The Evaluation was conducted over a period of 27 working days between May 1st and June 15th 2019. A total of 10 working days (11 calendar days) were reserved for the Evaluation Mission Team to carry out interviews in the country. This took place between the 4th and 14th of May 2019. The approach was determined by the terms of reference. The evaluation has concentrated on assessing the relevance, design, implementation (in terms of quality and timeliness of inputs, financial planning, and monitoring and evaluation; the efficiency and effectiveness of activities carried out and the objectives and outcomes achieved) as well as the likely future sustainability of its results, its likely impact and the involvement of stakeholders. The draft Final Evaluation Report, was revised after receipt of comments and finalised on ----- June 2019 The text has been revised to correct factual inaccuracies in the draft or to include additional information, while other comments have been reproduced in full and included in an "audit trail" table. This includes the comments from stakeholders and responses from the consultant.

The evaluation was conducted using a "participatory approach" to provide it with sufficient evidence upon which to base its conclusions:

- face-to-face interviews with the PIU Head (Coordinator)
- face-to-face interviews all the concerned UNDP staff that executed the project
- a stakeholder's meeting was held via Skype with the participation of all of the implementing partners (the PIU head, UNDP, NIM, DGRNE, CONPREC, Fire Department)
- face-to-face interviews were held with all the implementing partners as well as with: The Minister of Defence, Heads and/or key staff in 4 District Governments (Camaras), the Red Cross, CONAE, and many community focal points.
- a thorough review of project documents and other relevant texts, including the Project Document revised log-frame, and the MTR report, the Project's Operational Protocol (PONC) and others.

A full list of people interviewed is given in Annex 3 Table 8.

The FE Team has made every effort to evaluate using the criteria listed in the *UNDP Monitoring and Evaluation Policy*, namely:

Relevance – the extent to which the activity is suited to local and national development priorities and organisational policies, including changes over time, as well as the extent to which the project is in line with the GEF Operational Programmes or the strategic priorities under which the project was funded.

Effectiveness – the extent to which an objective has been achieved or how likely it is to be achieved.

Efficiency – the extent to which results have been delivered with the least costly resources possible.

Results – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short-to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.

Sustainability – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

CONSTRAINTS

Due to financial limitations, the time frame for the field portion of the Evaluation Mission was set at 10 working days which in itself is a very short time to fully respond to all the questions that the UND/GEF guidelines require of such an evaluation. This led to the limitation of being able travel to the island of Príncipe.

OTHER SIGNIFICANT ASPECTS

BASELINE INDICATORS

The Evaluation Mission, based on what it saw in the field and on the various interviews it carried out, judges that the baseline indicators proposed were indeed the product of a review of the meteorological assets, both physical and human, that existed at the time of the project's design. Similarly, the description of assets that existed to support an EWS were also realistically reflected in the project document. In terms of meeting the success indicators the Evaluation Mission points out the following:

Outcome 1 "*Enhanced capacity of national hydro meteorological (NHMS) and environmental institutions to monitor extreme weather and climate change"* had two main indicators as follows:

Indicator 1.1 *Percentage of national coverage of climate monitoring network*. (baseline: 20%; target: >60%) has been met.

Indicator 1.2 *Frequency data transmission* (baseline: 6 AWS x once daily; target: 18 AWS x twice daily) Based on what it saw in the field and the interviews it carried out with technicians, community leaders and CONPREC/CONAE staff, this target indicator has NOT been fully met.

Outcome 2. "Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans." had three indicators as follows:

Indicator 2.1 *% of population with access to improved climate information and related hazard rainfall warnings (disaggregated by gender). Baseline (20%,30%). Target (30%, 45%)*. Based on what it saw in the field and the interviews it carried out with both technicians and community leaders, it is the opinion of the Evaluation mission that this target indicator has not been fully met, not being able to indicate a percentage value because in practice the system does not work and knows a daily change, hence the difficulty of the Evaluation Mission in proposing a percentage in terms of implementation.

Indicator 2.2 *Number of GoSTP development Plans and land-use plans at National/District level incorporating climate change risks into their design.* (baseline: 0; target 2) The Evaluation Mission saw no evidence of this. Several District Governments were unaware of how the EWS was to function. Based on what it saw in the field and the interviews it carried out with both technicians and community leaders, it is the opinion of the Evaluation mission that this target indicator has not been fully met.

Indicator 2.3 *Sector-specific strategies and plans that integrate climate change risks in particular at coastal districts. Again, b*ased on what it saw in the field and the interviews it carried out with both technicians and community leaders, it is the opinion of the Evaluation mission that this target indicator has not been met.

The Overall project baseline indicators were:

Limited capacity to generate EWS and CI on a national scale for extreme hydro-meteorological phenomena

Limited disaster risk prevention capacity on local levels within CONPREC - CP

No Standard Operating Procedure (SOP) for alert communication by CONPREC - CP with the support of NGOs/CSOs

Existing budget plans do not have sufficient funds to maintain and operate environmental monitoring infrastructure

While there have been improvements in areas such as community awareness, the installation of the necessary monitoring equipment, the distribution of communications equipment, training provided etc., as long as the deficiencies pointed out in the FINDINGS and CONCLUSIONS chapters of this report are not dealt with effectively, the Evaluation Mission feels that that the corresponding success indicators and the goal of having TODAY an effect EWS and the means to sustain it, are STILL TO BE MET.

GENDER

As far as the Evaluation Mission could tell from the documentation review, the interviews it carried out and its own observations, the project was neither designed with specific gender baseline or success indicators nor therefore was it monitored on such criteria. The Evaluation Mission can state without hesitation however, that the project was designed to serve the interests of women living in potentially risky communities as they constitute 52% of the population of São Tomé and Príncipe. The team overseeing the implementation of the project was staffed by roughly 60% of female officers and that women participated and benefitted from the training activities contemplated under the project.

REPORTING, MONITORING AND EVALUATION

The project document called for the standard monitoring and evaluation the UNDP applies to all GEF projects. Periodic reports, Mid-Term Review as well as a Final or Terminal Evaluation. There was an MTR done. The MTR pointed out the irregularity in the production of periodic reports by the project's PIU. The Evaluation Mission found the situation to still be the same. If appropriate reporting and monitoring had occurred, some of the problems pointed to in this report might have been avoided or corrected in a timely manner.

COUNTRY OWNERSHIP

A series of Project Preparation/Inception meetings were held in 2013 with a view to have stakeholders participate in the drafting of the Project Document and promoting ownership by the concerned institutions, that is to say the DGRNE, NIM and COMPREC and generate an understanding of the potential benefits of the project in the coastal communities of São Tomé and Príncipe. They were only partially successful. The Evaluation Mission was told that the project had been perceived by them as a UNDP led effort. The fact that the Project Coordinator was located for a long period within the UNDP offices contributed to this perception. The Evaluation Mission also feels that the responsibility to lead this effort having been somewhat dispersed amongst various agencies (the DGRNE, NIM, CONPREC, Bombeiros and UNDP), may have contributed to this perception. What is important in our view is that there is a clear understanding of the need for an EWS, even if the lead roles still need to be clarified.

FINDINGS OF THE EVALUATION MISSION

FINDINGS ON THE PROJECT'S DESIGN, EXECUTION AND MONITORING:

16) While the project design was extensive and did identify some of the potential risks (see Risk Analysis in the ANNEXED table for further details) it DID NOT outline a clear and realistic exit strategy to deal with those risks. The most obvious omission was that it did not identify sources of potential funding to ensure the project's future sustainability.

17) Closer monitoring of PIU implementation could have assisted in identifying some of the shortcomings outlined below. The periodic implementation reports were very process oriented, providing information on activities undertaken but not sufficiently analytical, in that they did not point effectively to possible problems such as deficiencies in the communications systems, security issues with the equipment purchased etc.

FINDINGS ON COMPONENT 1:

18) **Of the 28 automatic data gathering stations delivered** (2 synoptic, 14 meteorological and 12 hydro-meteorological stations), **a few are partially or totally inoperable**, due to a lack of maintenance and/or spare parts.

19) **4) The calibration equipment of the 28 stations was acquired to serve both the DGRNE and the INM. However, UNDP assures that it made the acquisition, but the NIM was never aware of its existence. For its part, DGRNE claims that it received solutions for calibrating the equipment and benefited from the installation of software on the computer, but the calibration equipment is not in its possession. Therefore, these institutions cannot guarantee that the information they collect, analyse and disseminate is now fully accurate. The enclosures of several of the stations visited were found unlocked. Anyone could go inside and vandalize them.**

HYDRO-METEOROLOGICAL SERVICES (DGRNE)

20) **Hydrology services at DGRNE level operate only during normal office hours**, so it is not easy to obtain relevant data that are collected after that time or at weekends, because although hydro-meteorological data are collected in the DGRNE computer database, 24 hours a day, these data are not available for the early warning system, because DGRNE only operates during normal office hours, which is a constraint for the operation of SAP.

21) **Hydrometeorology services have not issued daily bulletins for several months.**

METEOROLOGICAL SERVICES (NIM)

22) Two of the four students funded by the Project to do basic meteorological training were not successful. However, one of them has already returned to the country and joined the NIM as a meteorological observer. The other two, who were successful, are still in Portugal and will finish their training in July, but it is not known if they return to the country or not.

23) In the opinion of the Evaluation Mission at NMI level, the SAP does not seem to occupy a predominant place, since the collection and dissemination of data requires a well-structured organisation. There is no systematic and timely dissemination of meteorological data. The dissemination depends on the good understanding of the technicians (service meteorologists) when they are available, without a strict timetable and responsibility. The CONPREC technicians who must disclose this data to the Local Committees also depend on this disclosure. However, in the NIM everything is organized for the supply of meteorological data to ENASA, which pays the NIM for this service.

24) Despite the position of strength that INM has, given its monopoly of key information to ENASA, during the discussions on this matter, the Evaluation Mission noted a certain reluctance of INM to impose a more realistic payment rate for the services it provides to ENASA, since ENASA (National Airport Services Company) paid INM 14,000 Dobras (About U$ 500) per month, when the project was elaborated, an amount already quite insufficient for the services provided by INM to ENASA. Since then, despite the improvements that INM obtained with the implementation of the project, ENASA unilaterally reduced its monthly payment to 6,000 Dobras, that is, U$ 240 per month, less than half of what it had paid before.

FINDINGS ON COMPONENT 2:

25) **There is a lack of clarity as to who: (a) leads the EWS; (b) has the authority to recommend a state of emergency; (c) coordinates the various actors involved in disaster mitigation.** Is this the function of CONPREC/CONAE, or the Fire Department (Corporação de Bombeiros de São Tomé e Príncipe? This lack of clarity was already pointed out in the Protocolo Operacional Normalizado de Comunicaçã (PONC).

26) **Communications systems were not integrated.** The Fire Department informed that while they did listen to the daily weather briefings emitted on the CONPREC frequency, they did not use the same frequency to respond to emergencies but rather used their own frequency and equipment.

27) **The role of other actors such as the Red Cross (Cruz Vermelha) the Army, Police, District Governments (Câmaras) etc. in an emergency are not clear**. Some recommendations were made in the PONC, but it is not clear they were acted on.

28) **No simulations of disasters were carried out**. This limits the capacity to identify and correct the voids and misunderstandings inherent in the proposed EWS as it exists today.

29) **Project equipment was improperly appropriated by individuals.** During the Evaluation Mission's visit to the 4 District Chambers (Cantagalo, Caué, Lembá, Mé-Zóchi), it was found that in the first three districts, the radio equipment and chainsaws supplied were no longer available to the respective local risk committees (CLR), as they remained in the possession of the previous City Councilors, who were removed after the elections held in October 2018 (as well as the motorcycles supplied under another UN project).

30) **The radio system between COMPREC, the communities and the District Governments is far from fully operational**. Several communities in the north of Sao Tome cannot use the COMPREC radio network due to areas where the signal cannot be retransmitted. In the south, at least one community (Rio Grande) cannot access the network either as the community does not have electric power, thus not being able to recharge the equipment. Some have received telephones, but obviously these do not allow 24 hour monitoring and require periodic financial recharging for which no provision was made.

CONCLUSIONS OF THE EVALUATION MISSION

ON RELEVANCE:

The project was at the time of its design, and is still very relevant.

- Sao Tome is a small island LDC whose population is heavily dependent on artisanal fishery and non-irrigated agriculture and as such, its economy is heavily dependent on its climate.
- Practically all its population is spread out along a narrow coastal belt next to the sea and short rivers all of which are subject to sudden large fluctuations in water level.
- Its population has low educational indexes and its road and telecommunications infrastructure is very deficient.
- Governmental institutions are weak in terms of both the available budgetary and human capital resources.

- Furthermore, the project is consistent with São Tomé and Príncipe's international obligations under the Rio Treaties. It is also aligned with a series of policy and strategy documents such as: the UNDAF for STP; the CP for STP; the CPAP; the country's NAPA and others.

ON THE PROJECT DESIGN:

The project design covered several aspects, but in the opinion of the Evaluation Mission, it did not sufficiently take into account the identified risks, mainly with regard to the sustainability of the project, as the underlying logic (inputs purchased, activities leading to outputs, leading to results, etc.) was consistent with the objectives of the component. However, at the time it was designed, the risks identified were not realistically assessed and alternative mitigation measures were not identified. Three key risks were not taken into account with sufficient rigour:

- The first was the support structure for the project. Two different entities (the DGRNE and NIM) deal with meteorological data gathering, analysis and data dissemination. **This duality should have been brought up with the government in order to bring together the hydro-meteorological and the meteorological services prior to the project's inception or early on in its implementation.**

- The second was the lack of a clear "sustainability strategy" that included clear sources of independent financial support that could ensure the continuation of the benefits of the project beyond its duration. An exit strategy with a sustainability plan covering future financial and human resource requirements should have been an integral part of the project design. The sources of extra-budgetary funding from DGRNE and NMI clients should have been identified and the basis for securing such funding should have been established before the start of the project, as it appears that currently the project activities are not continued in several respects due to lack of financial sustainability, as claimed by DGRNE.

- A third referred to a possible change in the responsibilities of the main actors. The project had at its core the CONPREC which under a governmental decree (Decreto-Lei nº 17/2011) was given the responsibility of coordinating all matters referring to national emergencies including the EWS. Later, this was modified by a new law (Lei nº 04/2016) which attributed this task to the Fire Department. To date this has caused confusion for the implementation of the EWS. **A commitment to ensuring stability in the key counterpart structures should have been obtained prior to the project's inception.**

ON THE PROJECT'S IMPLEMENTATION (Efficiency):

While the project is in theory implemented through a national implementation modality (NIM), de facto a great deal of the administrative and coordinating functions were reserved by the UNDP office. This was mainly due to the fact that there was no single counterpart agency. Several Ministries and entities were involved.

ROLE OF UNDP

The UNDP office's role was in general terms carried out correctly. Procurement was made of most of the foreseen equipment as far as the budget allowed. The quality of the equipment and services procured was as foreseen. An MTR was carried out, although the quality of that report left somewhat to be desired, as it did not anticipate the problems that the project faced allowing for timely corrective action. Greater engagement in monitoring the work of the PIU would have been desirable. Proper accounting of project expenditures/disbursements was kept. Financial Tables are provided in Annex 1 of the report. The project was audited by private certified auditors early on in the project's life (2015). Since then, as far as the Evaluation Mission was able to detect, no further audits took place.

ROLE OF THE PIU

In the opinion of the Evaluation Mission, the PIU was the weakest link in the execution of the project. Proper monitoring should have identified some of the problems outlined in the section FINDINGS above. They should have been brought to the attention of both the Government and the UNDP office, so that appropriate and timely corrective actions could be taken. The Operational Protocol (PONC), which was drafted somewhat late in the project's life, already pointed to some of the problems the project was facing, but no remedial action was taken in this regard.

ON THE PROJECT'S LONG TERM SUSTAINABILITY:

As affirmed above, the sustainability of the project is in serious doubt if the problems outlined above are not properly addressed. To this effect, the Evaluation Mission will make a series of recommendations in the following chapter.

ON THE PROJECT'S IMPACT (Effectiveness):

To date the impact of the project has been very limited. The best one can say at this time is that the awareness of the potential hazards that climate related emergencies may cause has been raised in the communities, district governments, the NIM, the DGRNE, the Fire Department, CONPREC/CENOE etc.
However, due to a series of relatively small but significant setbacks identified in the section FINDINGS above, the intended impact of the project, i.e. the establishment of a working EWS, is far from having been achieved.

OVERALL CONCLUSION OF THE EVALUATION MISSION:

In spite of an important investment having been made, for the reasons expressed above, the project has not yet achieved its objective of having a functional and effective EWS system based on accurate meteorological information from throughout the country.

If a serious emergency were to happen TODAY, the system would fail to respond. Therefore, if nothing further were to happen, the rating the Evaluation Mission gives as of today, is reflected in the following table:

TABLE 2 – OVERALL RATINGS

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

Note: Ratings Key is given in Annex VI and Justification of rating is given in Annex V.

IMPORTANT NOTE: This said, the gaps identified can be addressed, as long as there is the will to make the necessary administrative decisions and modest financial resources required to render the system operational and sustainable. Such remedial actions would be key to making this project a successful one and a worthwhile investment of GEF funding.

To this effect, the Final Evaluation Mission makes a series of recommendations below.

OVERALL CONCLUSION OF THE EVALUATION MISSION:

In spite of an important investment having been made, for the reasons expressed above, the project has not achieved its objective of having a functional and effective EWS system based on accurate meteorological information from throughout the country.

If a serious emergency were to happen TODAY, the system would fail to respond.

This said, the gaps identified can be addressed as long as there is the will to make the necessary administrative decisions and modest financial resources required to render the system operational and sustainable. To this effect, the Final Evaluation Mission makes a series of recommendations in the appropriate section below.

PROJECT ACHIEVEMENTS

The project has certainly provided the elements for the establishment of an EWS system.

1. It has purchased and installed 28 weather monitoring stations throughout the country (even though some are not currently operational due to maintenance and communications issues).
2. It has purchased calibration equipment for these stations (even if it is still to be put to use).
3. It has purchased a communication system (even if there are some difficulties due to problems with the signal repeating stations and some equipment has been illegally taken by ex-officers of district government).

4. It has provided local training for technicians, government officials and community leaders and has funded long-term out of country training (even if in the opinion of the Evaluation Mission more training is required if the objective is to be met)

Therefore, it is clear that important advances have been made, but before a full-fledged Weather Monitoring EWS is in place, the sum of problems identified in this report must be addressed and the sustainability of the EWS ensured. The Evaluation Mission cannot simply take into account if equipment has been purchased and installed or distributed or if training has been given. It must judge on the current use being given to that equipment and the effectiveness of the training provided.

<u>As of today, and assuming nothing further were to happen, the ratings the Evaluation Mission gives</u> are reflected in the following two tables:

- **The first refers to the specific Outcomes and Outputs**
- **The second to the overall implementation of the project**

TABLE 3 – Evaluation Mission Ratings per Outcome/outputs

OUTCOMES/OUTPUTS	Evaluation*					
	HS	S	MS	MU	U	HU
OUTCOME 1. Enhanced capacity of national hydro-meteorological (NHMS) institutions to monitor extreme weather and produce sector tailored weather forecasting.			X			
Output 1.1: 12 Automatic Hydro-meteorological stations complete with remote data transmission and archiving and 12 river gauges are installed in São Tomé Island and Principe Island.			X			
Output 1.2: A network of 4 synoptic and 8 climatological automatic weather stations, WMO standard, complete with remote data transmission and archiving are installed and 12 manual WMO standard are rehabilitated to support the establishment of an Early Warning System.			X			
Output 1.3:10 workstations to support, AMESD-SYNERGIE and SADIS systems are installed to strengthen the capacity of São Tomé Airport Forecasting Centre.		X				
Output 1.4: 5 Meteorologists, 5 Meteorological Technicians, 4 Forecasting Superintendent Officers 10 Specialist Superintendent Officers are trained to support EWS data handling and forecasting operations.			X			
Output 1.5: An Integrated Community Based EWS (ICB-EWS) network of 5 pilot sites is established to reduce vulnerability of local fishing and farming communities to flash flooding, stormy weather and develop resilience to drought episodes.			X			
OUTCOME 2. Efficient and effective use of hydro-meteorological information for generating early warnings and support long-term development plans.						
Output 2.1.:15 Meteorologists and 6 Hydrologists are trained in tailored Weather Forecasting, Special and Warning Packaging. (DGRNE, NIM)				X		

OUTCOMES/OUTPUTS	Evaluation*					
	HS	S	MS	MU	U	HU
Output 2.2.: Sector tailored early warning products – based on interagency harmonized agreements and international standards and protocols – are developed and made accessible to Disaster Management structure in STP. (NIM)			X			
Output 2.3.: National capacity and inter-sectoral framework for mainstreaming weather and climate information into national development planning policies, district disaster preparedness and management is built specifically targeting Neves, Santa Catarina, Malanza, Ribeira Afonso and Sundy. (DGA)			X			
Output 2.4.: National (Civil Society and Government) Communication Channels, dissemination and response mechanisms, including "sms" text and pictorial alerts are established. (CONPREC)			X			
Output 2.5.:A Plan for financial sustainability based on cost-recovery service provision to support future EWS operation and maintenance developed and implemented, including the operationalisation of a public-private platform. (DGRNE/NIM)					X	
OVERALL PROJECT RATING:			X			

* Note: HS = Higly Satisfactory; S = Satisfactory; MS = Marginally Satisfactory; MU= Marginally Unsatisfactory; U = Unsatisfactory; HU = Highly Unsatisfactory.

TABLE 4- Evaluation Mission ratings on total project implementation.

Criterion	Comments	Rating
Monitoring and Evaluation		
Overall quality of M&E	Closer monitoring of the project could have identified much earlier the deficiencies identified in this report. The MTR report did not identify and point to solutions to some of these problems.	Marginally Satisfactory (MS)
M&E design at project start up	As above.	Marginally Satisfactory (MS)
M&E Plan Implementation	The M&E Plan was formally followed. However in the process, key deficiencies were not identified and therefore no corrective management actions were taken.	Marginally Satisfactory (MS)
IA & EA Execution:		
Overall Quality of Project Implementation/Execution	The Project was well organized from a procurement and financial accounting/management point. The implementation by the PIU was not up to what could have been expected.	Marginally Satisfactory (MS)
Implementing Agency Execution	As pointed out in this report, although this project was formally implemented using the NIM in practice, procurement, payments and financial accounting were carried out using the DIM approach.	Satisfactory (S)

Executing Agency Execution	UNDP has provided a reasonable level of supervision and backstopping to the Project. A more active role in monitoring the project, with field visits and requesting better and more frequent formal reporting could have helped.	Satisfactory(S)
Outcomes		
Overall Quality of Project Outcomes	The FE mission feels that Overall quality was satisfactory, but that the sustainability of the effort in the current context was not well defined at the design stage, nor corrected during the project's implementation phase.	Marginally Satisfactory (MS)
Relevance	The Project is consistent with the country's international obligation under UNFCCC, with the UNDAF and UNDP CPAP and the Rio Treaties. It is therefore congruent with GEF and national priorities, and remains pertinent.	Highly Satisfactory (HS)
Effectiveness	A review of the outcomes and output as well as the current operational capacity of these outputs shows the overall likelihood that the intended impact is at this time improbable unless remedial actions are taken. Therefore, at this stage, the Evaluation Mission has no choice but to rate the Effectiveness as marginally unsatisfactory. Hopefully, actions to correct these deficiencies will be undertaken in the coming months.	Marginally Unsatisfactory (MU)
Cost-effectiveness (Efficiency)	In terms of financing and procurement, the project design, as originally conceived, has been respected. The project management costs have been kept to a very acceptable level. The co-financing in the form of in-kind contribution materialized as foreseen. From this vantage point, the project has been reasonably well managed.	Satisfactory (S)
Sustainability:		
Overall likelihood of risks to Sustainability	As pointed out, the main risks to sustainability remain the lack of funding to: 1- maintain and renew weather forecasting and communications equipment; 2- to pay adequate salaries to the technicians in order to ensure their permanence in the services; 3- the still present need for further training and sensitization. Therefore, unless corrective measures are taken the Evaluation Mission feels the project's efforts will not be sustainable. .	Unlikely (U)

Financial resources	The Government of STP has very scarce budgetary resources and an EWS comes low in their priority in comparison to other obligations. Therefore, unless action is taken to secure significant extra-budgetary sources of funding for the DGRNE and NIM, it is highly likely that the weather stations provided will deteriorate over time as has been the case in previous efforts and is already noticeable in this one.	Unlikely (U) (as things stand today)
Socio-economic	Stakeholders involved in the project did show some increased awareness linked to Climate Change risk management. The FE Mission feels strongly that more emphasizes should be given to stakeholder training further increase awareness and behavioral changes.	Moderately Unikely (MU) (as things stand today)
Institutional framework and governance	As pointed out, the institutions responsible to the project are still fragmented (meteorology and hydro-meteorology are separate entities) and the roles of CONPREC and Bombeiros in managing emergencies under the EWS are still somewhat blurry.	Moderately Unikely (MU) (as things stand today)
Environmental	As stated, if a weather related emergency were to occur as things stand now, the Evaluation Mission is convinced the EWS would not function.	Unlikely (U) (as things stand today)
Impact:		
Environmental Status Improvement	Undoubtedly the project has made an important potential contribution. Unfortunately, the sustainability of this effort is in serious jeopardy unless significant action are taken.	Marginally Satisfactory (MS)
Environmental Stress Reduction	Until such a time as the country has a fully functional EWS, one cannot speak of a reduction in Environmental Stress.	Marginally Satisfactory (MS)
Progress towards stress/status change	Again, until the outstanding issues related to the project's sustainability are properly addressed, progress must be judged to be marginal, of a temporary nature and probably reversible.	Marginally Satisfactory (MS)
Overall Project Results		Marginally Satisfactory (MS)

RECOMMENDATIONS OF THE EVALUATION MISSION

TO THE GOVERNMENT OF SÃO TOMÉ AND PRINCIPE:

1. **Consideration should be given to merging the hydro-meteorological service into the NIM.** so as to ensure:

    - consistency in the collection, treatment, accuracy, hours and mode of operation of the services, and frequency of the dissemination of climate information.

    - the overall sustainability of both services by the provision of a pool of "client" users of meteorological data and water (such as ENASA, EMAE, ENAPORT, Cervejeira Rosema, shipping companies and others).

2. **Establish the legal and financial measures that will allow the consolidated meteorological services to charge "clients" for their services and create accounts they can manage directly with a view to ensuring the maintenance, repair and replacement of the equipment necessary for the provision of their services.**

3. **Ensure clarity in the Roles of CONPREC and the Fire Department (Corporação de Bombeiros) and their cooperation.**

    - CONPREC should be the center of the EWS, having the power to recommend to the Minister of Defense the declaration of a national or local emergency.

    - the Corporação de Bombeiros should be the operational coordinator and work with other concerned partners such as the District Governments (Cámaras) Red Cross, the Port Authority, the national health services, the police, the army AND MOST IMPORTANTLY the communities and their leaders, TO DESIGN AND UPDATE REGULARLY an Emergency Operational Plan.

4. **The Government should ensure that the Fire Department carry out periodic, regular "emergency simulation exercises"** so as to identify weaknesses in the EWS system BEFORE AN EMERGENCY OCCURS.

5. **The Government should ensure that the Fire Department carry out annual reviews of the assets that can be easily located and mobilized in case of an emergency such as:**

    - TRANSPORTATION – boats, buses, trucks and vehicles in public and private hands that can be used (temporarily requisitioned) in rescue and supply operations.

    - CONSTRUCTION EQUIPMENT -

    - SOURCES OF POTABLE WATER -

    - HEALTH SUPPLIES – Hospital beds, medical equipment, average stock of medicine (in hospitals and private pharmacies) , bandages, disinfectants, etc.

- HEALTH HUMAN RESOURCES – Doctors by specialty, nurses, health technicians.
- AVERAGE STOCK OF FOOD SUPPLIES – In warehouses, with WFP, with others etc.
- OTHER SUPPLIES – Cots, mattresses, blankets, water filters, kitchen supplies, gas containers, portable kitchens and utensils.

After the reviews are finalized, "requisition protocols" should be signed by the Fire Department with the public and private sector owners of such assets. These protocols should spell out the care that the Fire Department will take to return fixed assets in the condition they were requisitioned and the obligation of the Government to pay for damages as well, as to reimburse for the use of fungible items such as fuel, food supplies, medicines etc.

6. **The Government should instruct the Police to recuperate immediately the equipment that this and other projects supplied for EWS purposes (radios, portable saws and motorcycles) that have been illegally appropriated by ex-civil servants of the District Governments (Cámaras).**
7. **The highest authorities of the Ministry of Infrastructure and National Resources with support of NIM should locate where the "calibration equipment" purchased by the project is and make it available to both NIM the DGRNE.**

<u>TO THE UNDP/GEF</u>

8. **Until such a time as Recommendation 2 above is implemented, there is the risk that the investment made may not produce the desired results. Therefore, the Evaluation Mission feels it is important to find from other projects or sources, funds to remedy the deficiencies outlined in FINDINGS 1 and 10 above.**
9. **For future projects, the Evaluation Mission recommends that the UNDP office monitor the work of the project PIUs with greater frequency and depth.**
10. **Again for future projects, the Evaluation Mission recommends that no Project Document be signed until it contains a detailed Exit Strategy. The strategy should contain plans for ensuring the post-project sustainability of the effort. Mainly, a "human resources stability plan", as well as "financial sustainability plan" that preferably relies on sources of extra-budgetary funding.**

ANNEX 1 FINANCIAL TABLES – TABLE 5 – Expenditures by OUTPUT and YEAR

OUTPUT	2014			2015			2016			2017			2018			2019			Total	
	Budgeted	**Actual**	**%**	**Budgeted**	**Actual**	**%**	**Budgeted**	**Actual**	**%**	**Budgeted**	**Actual**	**%**	**Budgeted**	**Actual**	**%**	**Budgeted**	**Actual**	**%**	**Budgeted**	**Actual**
OUTPUT 1	928,180.00	895,142.13	96%	994,028.00	1,078,315.19	108%	174,500.00	331,673.27	190%	166,000.00	193,046.84	116%	63,765.00	41,012.50	64%		17,450.00		2,326,473.00	2,556,639.93
OUTPUT 2	84,600.00	80,901.72	96%	406,500.00	286,758.22	71%	232,100.00	184,059.56	79%	184,000.00	165,855.71	90%	219,229.00	195,392.05	89%				1,126,429.00	912,967.26
ME & PIU	47,820.00	43,637.22	91%	30,000.00	27,222.14	91%	68,000.00	18,357.14	27%	50,000.00	12,037.36	24%		90.86					195,820.00	101,344.72
TOTAL	**1,060,600.00**	**1,019,681.07**	96%	**1,430,528.00**	**1,392,295.55**	97%	**474,600.00**	**534,089.97**	113%	**400,000.00**	**370,939.91**	93%	**282,994.00**	**236,495.41**	84%				3,648,722.00	3,553,501.91

ANNEX 1 – FINANCIAL TABLES

TABLE 6 – SUMMARY OF FINANCING

Sources of Financing	Name of Financer	Type of Financing	Amount Confirmed at CEO Endorsement (US$)	Actual Amount Contributed at Project Completion (US $)	Actual % of Expected Amount
GEF	GEF	Grant (Cash)	3,600,000.00	3,648,772.00	101.3%
UNDP-TRAC	UNDP	Grant (Cash)			
UNDP	UNDP	in-kind (if any)	795,000.00	795,000.00	100%
Government of STP	Government of STP	in-kind	39,500,000.00	39,500,000.00	100%
		T O T A L	43,895,000.00	43,943,772.00	100.01%

Annex 2: TABLE 7 - Summary Evaluation of Project Achievements by Objectives and Outcomes

The present evaluation matrix uses the version contained in the Inception Report.

KEY:
GREEN = Indicators show achievement successful at the end of the Project.
YELLOW = Indicators show achievement nearly successful at the end of the Project.
RED = Indicators not achieved at the end of the Project.
HATCHED COLOUR = estimate; situation either unclear or indicator inadequate to make a firm assessment against.

Project Title: *"***Strengthening climate information and early warning systems in São Tome and Principe for climate resilient development and adaptation to climate change***"*

Project Strategy	Baseline Indicators	End of Project Success Indicators	Final Evaluation Assessment	Achievement Rating	Justification for Rating
Objective[1] To strengthen the climate monitoring capabilities, early warning systems and available information for responding to climate shocks and planning	1.Limited capacity to generate EWS and CI on a national scale for extreme hydro-meteorological phenomena Limited disaster risk prevention capacity on local levels within CONPREC - CP No Standard Operating Procedure (SOP) for alert communication by	. Capacity assessment TARGET score 161 for all combined EWS agencies (NOTE: implicit result expected was a fully functional EWS)	**The Final evaluation relied on its own findings and found that given the breakdown in some of the meteorological and hydro-meteorological stations and the breakdown in the communication of weather data to ALL the communities on a real time basis, the Objective had, as of now, not been achieved.**	**MS**	**There was partial success in having some stations operational and some communities were able to receive weather reports. NIM was producing them daily, but not the DGRNE.**

[1]*Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR*

adaptation to climate change in São Tomé and Principe	CONPREC - CP with the support of NGOs/CSOs Current score: 22 2.Existing budget plans do not have sufficient funds to maintain and operate environmental monitoring infrastructure Current budget: $500,000	2. TARGET: 30% increase in domestic financing for equipment operation and maintenance across all institutions			**The Evaluation Mission saw no evidence that there had been any increase in the budgetary allocations of the NIM and DGRNE. On the contrary, the meager extra-budgetary income of NIM had been halved during the period.**
Outcome 1 Enhanced capacity of national hydro-meteorological (NHMS) and environmental institutions to monitor extreme weather and climate change.	1.Currently, there is <20 % national coverage for climate/weather monitoring with respect to the optimal arrangements defined in NIM/DGRNE feasibility reports and WMO standards. Baseline is 7 AWS, 2 Automatic water level stations and 58 manual	1. Increase to 60 % national coverage to take steps in achieving NHMS optimal monitoring arrangements as defined in feasibility studies Target: 31 AWS, 14 automatic water level stations and 58 manual synoptic/agro/hydrometric stations upgraded	**Only 23 of the 28 new stations are currently operational.**	**MS**	**The target is far from being achieved.**

	synoptic/agro/hydrometric stations needing upgrades 2.Data from manual weather and hydrological stations is collected monthly and transmitted by post.	. TARGET for data transmission frequency: daily			
Outcome 2 Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans.	1. There are existing EWS initiatives for regional drought and famine alerts; however, a national alert system concerned with extreme hydro-meteorological phenomena is not available. There is a limited understanding of technical alert jargon (alerts are not translated into national languages). No mechanism exists for most vulnerable populations to be involved in the alert process to ensure its sustainability. Current access to warnings: 30% men, 20% women	1. Increase to 50% for both men and women who have access to improved EWS/CI Target: 50% men; 50% women	**The coverage is greater than 50% of rural population. No gender data has been kept.**	**S**	**The 50% target has been met.**
	2.Development frameworks do not incorporate any EWS/CI products such as risk maps or climate change predictions into long-term planning	2. At least 2 of the PRSP policy briefs incorporate analyses of risk maps and/or climate change projections influencing long-term planning proposals Target score: 2	**The Evaluation Mission saw no evidence of the use of weather data used in national planning.**	**MU**	**The Indicator was not met.**

	Current score: 0				
	▪				
	3. Sector specific strategies do not include EWS/CI because the quality of weather forecasts and climate predictions are poor and not tailored for specific uses, particularly seasonal forecasts. Current score: 0	3. Development of at least 2 tailored climate products and presentation of market research plan on how to implement mobile phone based fishing and agricultural advisories, both supporting targeted weather/climate service delivery Target score: 2	**Same comment as on previous point.**	**MU**	**Same logic as on previous point.**

ANNEX 3: TABLE 8 – PERSONS INTERVIEWED

No	NAME	TITLE	INSTITUTION	DATE
1	Cosme Dias	National Project Coordinator	INM	06/May
2	Maite Mendizabal	Environment Unit	PNUD	06/May
3	Edlena Barros	Environment Unit	PNUD	06/May
4	Cesaltina Soares	Environment Unit	PNUD	06/May
5	Claúdio Vicente	Environment Unit	PNUD	06/May
6	Aristómenes Nascimento	Director	INM	06/May
7	José Bastos	Director	DGRNE	07/May
8	Chicher Diogo	Director Hidrology	DGRNE	07/May
9	Gilmar Ramos	Technician (Ex-Director)		07/May
10	Américo Ceita	President	District Gov. of Mé- Zóchi	08/May
11	Alírio Cunha	Technician	District Gov. of Mé- Zóchi	08/May
12	Lourenço Monteiro	Director-General	General Directorate of the Environment	08/May
13	Aleixo Pires	Presidente	District Gov. of Cantagalo	08/May
14	Óscar Sousa	Ministro	Minister of Defesa and Public Order	09/May
15	Carlos Dias	Head	CONPREC	09/May
16	Luís Neto Barbosa	Technician	CONPREC	09/May e 13/May
17	Felisberto Bragança	Comander	Fire and Civil Protection Department	09/May
18	Zeferino dos Prazeres	Comisar	Fire and Civil Protection Department	09/May

19	Luisander Carvalho	Senior Staff	Serviço Nacional Cruz Vermelha	09/May
20	Kasia Wawiernia	Resident Representative	PNUD	09/May
21	Osvaldo João	Oversear	District Gov. of Caué	10/May
22	Lourenço Pereira Marcelo	Focal point	Santa Catarina Community	11/May
23	Ilter Branco Diogo	Focal point	Agua Tomá – Neves Community	11/09
24	Orlando Armando	Focal point	Iô Grande Community	10/09
25	Kitlason do E. Santo Neto (esposa)	Focal point	Praia Pesqueira Community	10/09
26	Damião Afonso Mata	Focal point	Rosema-Neves Community	11/09
27	Adérito Santana	Asistant Res. Rep. (Programme)	PNUD	13/May
28	Anacleto Gaspar	Member	Rosema-Neves Community	11/09

Table 9- Evaluation Criteria

Criteria used to evaluate the Project by the Final Evaluation Team

Highly Satisfactory (HS)	Project is expected to achieve or exceed **all** its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as "good practice".
Satisfactory (S)	Project is expected to achieve **most** of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.
Marginally Satisfactory (MS)	Project is expected to achieve **most** of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve **some** of its major global environmental objectives or yield some of the expected global environment benefits.
Marginally Unsatisfactory (MU)	Project is expected to achieve **some** of its major global environmental objectives with major shortcomings or is expected to achieve only **some** of its major global environmental objectives.
Unsatisfactory (U)	Project is expected **not** to achieve **most** of its major global environment objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (U)	The project has failed to achieve, and is **not** expected to achieve, **any** of its major global environment objectives with no worthwhile benefits.

Scale used to evaluate the sustainability of the Project

Likely (L)	There are no risks affecting this dimension of sustainability.
Moderately Likely (ML)	There are moderate risks that affect this dimension of sustainability.
Moderately Unlikely (MU)	There are significant risks that affect this dimension of sustainability.
Unlikely (U)	There are severe risks that affect this dimension of sustainability.

TABLE 10 : PNUD-GEF Audit Trail

PROJECT TITLE: "Strengthening climate information and early warning systems in São Tomé and Principe for climate resilient development and adaptation to climate change."

UNDP PIMS: 4925

As per UNDP/GEF standing instructions, this table is submitted separately.

TABLE 11 – Risks as identified in the Project's design.

1. Risks that could potentially affect the success of the project are included with recommended countermeasures in Annex 1.

RISKS	ASSUMPTIONS
São Tomé and Principe does not have enough government financing to continue monitoring and to cover recurring O&M costs	São Tomé and Principe has enough government financing to continue monitoring and will consider recurring O&M costs for new infrastructure in government budget lines because of the utility of EWS/CI
Poor co-ordination among implementing and executing agencies	There is sufficient political support and capacity within the EWS agencies for successful execution and implementation of the project
The project cannot resolve the lack of coordination between EWS agencies and with EWS-related initiatives to improve the ability to work cross-sectorally	The project will resolve the lack of inter-agency and inter-project collaboration and their ability to work cross-sectorally
New climate infrastructure is not extensive nor reliable enough to support improved forecasts	Forecasts will be improved by local data assimilation collected from new climate/weather monitoring infrastructure
Telecommunication (SMS) communication systems used for data transmission from manual stations will be	Manual equipment rehabilitated with enhanced SMS communication systems will not limit transmission of hydro-meteo data

robust enough to be able to effectively contribute to EWS/CI	
Continuity breaks in National Hydro-meteorological services due to the work required with new equipment installation and other project needs	There is and will continue to be sufficient qualified personnel within the NHMS to handle the new equipment, data transmission/storage/treatment
Lack of qualified personnel within the NHMS to operate and maintain new equipment, data transmission/treatment/storage processes and forecasting models	Ministry of Public Work, Natural Resources, Energy and Environment (MoPWNREE) is able to recruit enough technical personnel for project implementation.
NHMS personnel leave the ministry and are unable to transfer knowledge	TORs mandating that new trained personnel must stay within their agency for 5 years will support knowledge sharing.
Natural disasters damage infrastructure (particularly floods)	Equipment are robust enough or there are sufficient spare parts to handle infrastructure damage caused by natural disasters (e.g., 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)	Data sharing protocols can be agreed upon between information production agencies and the DRM and data can be presented in a sufficiently utilitarian way for local application. Data sharing will not be hindered by lack of coordination between agencies or by technical constraints such as bandwidth issues or local mobile telecommunication networks
Relevant ministries do not have a vested interest to fully integrate EWS/CI into their disaster risk planning and poverty- reduction strategies	The Ministry of Planning and Finance and the Ministry of Interior, Ministry of Public Work, Natural Resources, Energy and Environment (MoPWNREE) will have a vested interest to fully integrate climate information into their poverty reduction strategies and disaster risk management plans due to the utility of EWS/CI for long-term planning cross-sectorally

NHMS does not have enough capacity to tailor climate products to suit vulnerable populations and private sector needs by the end of the project	NHMS will acquire enough capacity to tailor climate products by the end of the project
False alarms	False alarms may occur but enough awareness has been provided to end-users to understand the reality of forecasting uncertainty and to inform them how they can get involved to improve early warnings and tailor CI suited to their needs
Procurement and installation of equipment is delayed due to slow release of funds, lengthy administration processes and deficient data transmission systems locally.	UNDP supervision will ensure that funds are released on time for speedy procurement processes and international and national technical assistance will be in place for equipment installation, testing and operationalisation.
There are not enough AWS transmitting data by the end of the project;andno SADIS/SYNERGIE systems to support forecasting; and not enough trained forecasters capable of producing accurate forecasts.	The technical assistance foreseen by the project will ensure that by the end of the project at least 12 AWS will be transmitting daily weather data and that there will be sufficient supporting facilities (SADIS/SYNERGY) and sufficient number of forecasters properly trained.
Early Warnings do to not reach local radios in the communities and local Radios are not capacitated to receive and broadcast early warnings.	The project foresees capacitance and support to local radios and the identified community radios are willing to be capacitated and cooperate.