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**Consultancy to Strengthen Regional and National Capacities for improved forecasting and Multi-Hazard Early Warning Systems**

**Partner country and procuring entity.**

Southern African Development Community (SADC)

**Contracting authority**

Southern African Development Community Secretariat (SADC Water, DRM, and climate sections)

**1.1. Background of vulnerability in SADC region**

SADC Member States[[1]](#footnote-2) are prone to a wide range of natural disasters such as torrential rains, floods, strong and devastating winds, tropical cyclones and tropical depressions, droughts and earthquakes. Hydro-meteorological extreme events such as Tropical Cyclone Dineo in 2017, that traversed and affected several countries stretching from Madagascar all the way to Botswana going through Mozambique, South Africa and Zimbabwe. Similarly in 2019 Tropical Cyclones Idai and Kenneth affected Comoros, Madagascar, Malawi, Mozambique, South Africa, and Zimbabwe. In early 2023, Tropical Cyclone Freddy the longest lasting tropical system in history, affected Madagascar, Malawi and Mozambique with Malawi bearing the heaviest brunt of its impacts.

El Nino driven droughts in the periods (1982–1984, 1991–1993, 2014–2017, 2019-2021 and 2023-2024) have had devastating human, social, economic and environmental impacts. Coastal countries, including South Africa, Angola, Namibia, Madagascar, Mauritius, Mozambique, and Seychelles experience frequent extreme climate events ranging from drought, floods, tropical cyclones, storm surges, coastal inundation and coastal erosion, including sea level rises. Landlocked countries like Botswana, Eswatini, Lesotho, Malawi, Zambia and Zimbabwe, also experienced frequent mild to severe droughts.

While a significant part of the region experienced severe drought conditions (e.g., South-western SADC), some parts of the region (e.g., North-eastern SADC and the region’s island states) experienced a lot of rainfall in the year 2023/24. The heavy rains in parts of Madagascar, Mozambique, Malawi, and Tanzania caused flooding which displaced populations and caused damage to property and infrastructure. In Tanzania, heavy rains in Manyara and Dar es Salaam region caused landslides and damage to crops and critical infrastructure. Malawi reported flooding in Nkhotakota district in central region and Karonga district in the north, displacing about 7,000 people and damaging crop fields. In southern Mozambique 48,000 people were affected by Severe Tropical Storm Filipo in mid-March, while further flooding occurred in southern Mozambique in late March due to continued heavy rainfall.

**1.2. Current Situation in the Sector**

The SADC region is highly susceptible to a range of natural hazards, including floods, droughts, cyclones, and disease epidemics. These events have significant socio-economic impacts, necessitating robust Multi-Hazard Early Warning Systems (MHEWS) to mitigate adverse effects.​

Currently, the implementation of MHEWS across SADC member states is inconsistent and faces several challenges. While some countries have established early warning systems, many of these are hazard-specific and lack integration into a comprehensive, multi-hazard framework. A study by Maripe et al. (2022) highlighted that although all member states possess some form of early warning systems, these are predominantly managed by meteorological agencies and are not fully multi-hazard or people-centered. The study emphasized the immediate need for developing frameworks that align with the Sendai Framework for Disaster Risk Reduction and the Africa Plan of Action

Despite the frequency of these disasters across the region, the region’s National Meteorological and Hydrological Services (NMHSs) lack capacity to carry out effective flood and drought forecasting as well as deliver multi-hazard early warning services. Studies by WMO and the World Bank confirm this capacity gap in SADC in the region’s NHSs and RBOs for flood forecasting and early warning (World Bank, 2021; WMO, 2021). The establishment of a technical taskforce of SADC meteorological, hydrological and DRM agencies would support strengthening such capacities.

Early warning systems enable countries and economies to anticipate and prepare for shocks emanating from disaster events. Yet, in the region, there are gaps in the quality and scope of available early warning information. They do not provide actionable intelligence to support preparedness planning and have not been used for anticipatory actions; mostly they contribute to a reactive approach through disaster response and economies to anticipate and prepare for shocks emanating from disaster events.

For drought monitoring and early warning services, there is a need to strengthen the capacity of meteorological, hydrological and agricultural institutions, and the data-sharing protocols between them, in order to address adequately meteorological, hydrological and agricultural droughts.

All SADC Member States have institutions responsible for hazard monitoring and detection and delivery of early warning services - Meteorological Services, Hydrological Services, Geological Services, Wildfire Management Services, Epidemiology Management Services, and Food Security monitoring agencies, among others. A listing of the countries’ NMHS and disaster management agencies is available in Annex 1. These institutions do communicate alerts and early warnings of different kinds; however, different Member States have different EWSs, and varying capacities and resources. The existence of different EWSs and the varying degree of capacities within Member States makes it a challenge for Member States to develop multi-hazard early warning systems and delivery timely and accurate services. Considering this through a regional lens allows for economies of scale in capacity enhancement, systems development and in improvement of services’ quality.

**1.3. Rationale and elaboration of similar/relevant activities**

The initiative is in line with the SADC Regional Disaster Preparedness and Response Strategy and Fund 2016-2030, the Regional Resilience Framework 2020-2030, the Maputo Declaration on Commitment by SADC to bridge the time gap between Early Warning and Early Action. It is also in response to the call by the United Nations Secretary-General, António Guterres, in 2022 for a global effort to ensure that early warning systems protect everyone on Earth by 2027.

In relation to flood and drought risk management, capacity strengthening of the region’s meteorological and hydrological practitioners of SADC Member States and shared watercourse institutions (River Basin Organisations and River Basin Authorities) remains the main challenge. For impact, flood and drought forecasting, preparedness, early warning and early action should primarily follow a river basin approach, focused on four major river basins namely Inkomati, Maputo, Limpopo and BUPUSA River Basins can be considered for this action. These river basins have tended to exhibit bigger response function(s) to regional El Nino and La Nina conditions.

The SADC-Climate Services Centre provides seasonal climate forecasts (through the SARCOF process), but these are not effectively utilised by the regional water sector, due to lacking capacity to translate these products into hydrological forecasts or outlooks.

**SADC Secretariat and relevant centres/institutions:**

The SADC Secretariat, based in Gaborone, Botswana, as the central administrative body for the SADC, drives regional integration and development initiatives among its member states. Its mandate encompasses promoting sustainable economic development, enhancing regional cooperation, good governance, and facilitating social and political stability within the SADC region. A core aspect of its mandate is implementing the Regional Indicative Strategic Development Plan, which prioritizes collaboration to enhance disaster preparedness and management. The Secretariat oversees various initiatives focused on early detection, early warning, and mitigation of disaster impacts, including the Climate Services Centre and the Agricultural Information Management System, the Regional Remote Sensing Unit, and the Regional Vulnerability Analysis and Assessment Unit. Within this framework, the SADC Climate Services Centre (SADC-CSC), provides operational, regional climate-related information and services, integrating climate data into decision-making processes for agriculture and disaster risk management.

The SADC Secretariat is implementing activities within the Regional Climate Resilience Program, which is a programmatic framework (structured as a series of projects or SOPs), funded by the World Bank. The Project Development Objective (PDO) of the RCRP is to improve the management of water-related climate hazard impacts in Eastern and Southern Africa, and, in case of an Eligible Crisis or Emergency, for early response. . The first project within this program, RCRP1 supports Madagascar, Mozambique, South Sudan, Comoros, and two regional organizations: SADC, and the Eastern Nile Technical Regional Office (ENTRO), while the second project (RCRP2) supports Malawi and the African Union. The SOP allows for scalability (countries can join at different times) and economies of scale. It supports catalytic medium- to large-scale investments to reduce people’s exposure to climate shocks, with a focus on protective, multi-benefit infrastructure; risk adaptation and mitigation via improved early warning systems and planning; and scaling up adaptive safety nets and decentralized resilience building activities. A key priority of the program is to support management of water-related disaster and climate impacts in the participating countries, in particular management of hazard from increased rainfall variability and extremes, droughts, floods, and cyclones affecting the region.

**2. OBJECTIVE, PURPOSE & EXPECTED RESULTS**

**2.1. Overall Objective of the Assignment**

The project aims to enhance regional and national multi-hazard early warning systems and forecasting capacities in the SADC region through a harmonized regional approach that strengthens national systems and promotes interoperability of early warning systems and timely information dissemination.

**2.2. Specific Objectives**

The specifically the consultancy will undertake two main tasks:

(1) provide technical assistance to SADC Member States National Multi-Hazard Early Warning Systems (NMHEWS) through a comprehensive assessment of capacities and support for development of a regional platform for MHEWS. The assessment will evaluate the types, status, and barriers to interoperability of these systems. This will enable the Secretariat to identify strengths, weaknesses and gaps in all Member States early warning systems. Through the project the Secretariat intends to build the capacities of Member States early warning systems to ensure they have the necessary capacity to undertake early warning and disseminate early warning information for saving lives and protect infrastructure and property. It is anticipated that through the project Member States early warning systems will be strengthened and harmonized to enable the seamless sharing of early warning and other related information between Member States, the SADC Humanitarian and Emergency Operations Centre (SHOC), SADC-Climate Services Centre, and global, continental and national EWS.

(2) develop standardized knowledge products, and training material on flood risk management, vulnerability mapping, and deliver required capacity strengthening in selected SADC River Basins and Member States on flood and drought preparedness including modelling and prediction.

Work conducted as part of Task 1 will build upon institutional mandated EWS across SADC countries (see Annex 1). Work conducted under Task 2 will build upon the Southern Africa Drought Resilience Initiative (SADRI) project, which laid the foundation for a more coordinated response to drought resilience among a diverse set of stakeholders in SADC Member States and strengthened SADC’s capabilities as a convener and institutional anchor for regional efforts on drought resilience.[[2]](#footnote-3)

# **3. RISKS AND ASSUMPTIONS**

## **3.1. Scope of Work**

## The consultancy will be implemented over 18 months, and will cover all SADC Member States and selected River Basin Organisations (RBOs) for EWS and forecasting capacity development in line with the scope outlined in tasks 1&2 above.

## **3.2. Geographical area to be covered**

For Task 1, the Service Provider will work closely with the SADC Secretariat DRR Unit and the SHOC (with the advisory support of the climate centre and water division of SADC), and the assignment will cover all SADC Member States.

For Task 2, the assignment shall be coordinated by the Senior Programme Officer of the SADC Water Division with the advisory support of the DRR Unit, Climate centre and the RCRP Project Coordinator. Task 2 will cover primarily three RBOs, and Basin States of river basins including Inkomati, Maputo, Limpopo and BUPUSA. For the rest of SADC Region, all SADC Member States and RBOs will participate in regional training.

SADC will provide the Consultant with focal points in Member States/RBOs for each task and facilitate overall communication and coordination.

Consultations with the Member States and stakeholders are expected to be conducted virtually and face-to-face, to achieve the objectives of the assignment. At least one in person regional workshop and training delivery is expected for each task.

**3.3. Target groups**

SADC Secretariat DRR Unit, SADC-CSC, SADC development sectors, SADC Humanitarian and Emergency Operations Centre (SHOC), SADC Water Department, and Member States of the SADC and vulnerable communities.

## **3.4. Specific Work**

Towards the achievement of the above-mentioned objectives, the following tasks are involved in this consultancy:

**TASK 1 – Improving Early Warning System and related capacity**

1. Preparation of a deep-dive assessment – using a comparative methodological schema for benchmarking (as indicated in Annex 2) - of the early warning systems in SADC countries through comprehensive desktop review (including of partners’ reviews such as by WMO and others) and stakeholder consultations. Information gathered will cover the four pillars of the EWS and the institutional and governance aspects (see Annex 3 for previous assessments and benchmarking details).
2. Provision of recommendations for each Member State to (a) improve national early warning systems and services; and (b) measures for implementing mechanisms for sharing of data and information. This task includes the provision of good practice examples being implemented or planned in the respective countries, from which SADC countries could learn from and build upon.
3. Development of templates for developing and disseminating Early warning information materials and products; and
4. Development of standardised data and information sharing formats and procedures at the national level, including standard warning templates and protocols for climate risk identification systems. Consideration should be given the Common Alerting Protocol (CAP) developed by WMO and ITU for warning dissemination.
5. Develop a regional platform (MHEWS ICT/digital portal) for sharing real time and near real time MHEWS data, products, and learning at the regional level to derive scale efficiency in addressing critical capacity challenges and to facilitate linkages to SHOC, and global, continental and other early warning systems. This will build on and link with existing digital platforms/portal and other systems.
6. Train the SHOC (and related regional teams) and Member States through a consolidated training program. This includes training materials and training modules for SADC member States and delivery of at least one training session to all SADC countries (Participation of countries to the training sessions will be financed by SADC under the RCRP grant). Training at regional level on usage of disaster response equipment training to be coordinated with procurement of equipment.
7. Presentation of the data/findings/results to regional multi-stakeholder dialogue forums and other meetings with Member States and regional stakeholders.

**TASK 2 –** **Improving flood and drought forecasting and related capacity**

1. Diagnostic on the status of drought and flood forecasting in SADC Member States. This diagnostic should use existing methodologies such as the [Country Hydromet Diagnostics](https://alliancehydromet.org/country-hydromet-diagnostics/) and/or the [benchmarking survey](https://alliancehydromet.org/wp-content/uploads/2021/07/Road-Mapping-and-Capacity-Development-Planning-for-National-Meteorological-and-Hydrological-Services-A-Guidebook.pdf).
2. Reviewing forecasting products of regional NMSs and SADC-CSC and chain of information flow to identify key bottlenecks (building on World Bank 2021 study)[[3]](#footnote-4).
3. Flood vulnerability risk mapping study – for hotspot basins (Inkomati, Maputo, Limpopo & BUPUSA).
4. Identify or develop a rainfall-runoff-based methodology for preparation of hydrological forecasts and outlooks using SADC-CSC products and SARCOF seasonal forecast.
5. Pilot model application in hot-spot RBs (in Inkomati).
6. Develop training material on flood forecasting, preparation of hydrological outlooks, including how to use SARCOF seasonal forecasts.
7. Deliver required training to SADC Member States NMS hydrologists and SADC RBOs through regional training workshop(s).
8. Presentation of the data/findings/results to regional multi-stakeholder dialogue forums as knowledge exchange.

## **3.5.** **Assumptions and Risks underlying the project.**

**Table 1: Assumptions and Risks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | **Risks** | **Risk level.**  **(H/M/L)** | **Mitigating measures** | **Assumptions** |
| 1. | Low participation of  Member States’s and regional early warning stakeholders critical for the assignment | M | Share information on the assignment in advance ensuring collective awareness of the important engagement actions and, on the roles, and responsibilities for Member States and DRM stakeholders. | Member States DRM, Climate Change and Meteorology cadres are fully engaged in the DRMSS Project and the consultancy assignment. |
| 2. | Insufficient information received to inform sector specific risks and early warning aspects | M | Ensure timely dissemination of the overall objective of the assignment and assignment plans with Member States DRM, Climate Change and Meteorology cadres. | Member States, sector specific projects, development partners and ICPs provide information to inform the Member States needs assessment report |
| 3 | Regional internet connectivity to facilitate virtual collection of data and information for the assignment | M | Ensure that the necessary stakeholders have connectivity and have data online | Member states and the consultant agree on alternative ways for the provision of data and information |

# **4. QUALIFICATION AND EXPERIENCE**

## **4.1. Service providers.**

The assignment is expected to be undertaken by a Consultancy Firm with the necessary expertise to include at least the experts below. The firm is allowed to propose additional expertise if deemed relevant for the assignment. The following are the minimum qualifications and time input for Consultant’s key personnel required to carry out the services:

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Key Personnel** | **Minimum Qualification** | **Minimum Professional Experience** |
| 1. | **Team Leader (combined role with the Hydrological Expert or the Meteorological and Climate Services Expert)** | Master’s or PhD in the field of disaster risk management, natural resources, Gender, environment management, or related field | 1. At least 15 years’ experience in the relevant field with over five years at the Managerial level; 2. Good project management skills; 3. Expertise with different early warning systems, hydrometeorology (meteorology and/or hydrology) 4. Disaster risk management experience, with an understanding of the early warning, humanitarian response and development nexus will be an added advantage;   e) Demonstrated experience in working with governments, partners, and other stakeholders in public policy development, especially around hydromet and Disaster Risk Management;  f) Experience in conducting assessments; and  h) Demonstrated experience in similar assignments will be a plus  **General Professional Experience:**  (a) Must be result-oriented, a team player, exhibiting high levels of enthusiasm, tact, diplomacy, and integrity.  (b) Demonstrate excellent leadership, interpersonal and professional skills in interacting with government and development partners.  (c) Excellent report writing and editing capabilities.  (d) Fluent in spoken and written English. Working knowledge of French and/or Portuguese is an added advantage.  (e) Computer literate with good working knowledge of the standard Microsoft Office suite of programmes.  (f) Proven experience with virtual conferencing systems (ZOOM, WEBEX, Microsoft Teams, Google meet etc.)  g) familiarity with web developer technologies and ecosystems |
| 2. | **DRM and EW expert** | Master’s in the field of economics, disaster risk management, or related field | 1. At least 10 years’ post-graduate experience working on disaster risk and hazard early warning systems meteorology, climate change modelling and early warning systems; 2. Familiarity and experience with regional early warning systems; 3. Disaster risk management experience with an understanding of and knowledge and experience with the humanitarian landscape in the region. 4. Knowledge and experience with early warning systems at the national level; 5. Demonstrated experience dealing with complex engagement as a dialogue facilitator.   f) Demonstrated experience in working with various government partners and other stakeholders in public policy development, especially around Disaster Risk Management.  j) Demonstrated experience in similar assignments.  **General Professional Experience:**  (a) Must be result-oriented, a team player, exhibiting high levels of enthusiasm, tact, diplomacy, and integrity.  (b) Demonstrate excellent interpersonal and professional skills in interacting with government and development partners.  (c) Experience in workshop facilitation and stakeholder engagements.  (d) Excellent report writing capabilities.  (e) Fluent in spoken and written English. Working knowledge of French and/or Portuguese is an added advantage. |
| 3. | **Hydrological Expert (could be in combination with the Team Leader role)** | Masters or PhD in Hydrology, Hydrogeology, Water Resources Engineering or related discipline, with strong transboundary water resources planning skills. | 1. At least 15 years’ experience in water resources management or planning 2. At least 10 Years’ experience in hydrological and hydraulic modelling work 3. Experience in the use of GIS and flood risk mapping 4. Knowledge of drought preparedness plans and their use 5. Experience in climate information interpretation and its use in flood forecasting and early warning information generation 6. Knowledge of SADC Protocol on shared water courses and SARCOF and related products is an added value. 7. Fluency in English. French and Portuguese are added advantage.   **General Professional Experience:**  (a) Must be result-oriented, a team player, exhibiting high levels of enthusiasm, tact, diplomacy, and integrity.  (b) Demonstrate excellent interpersonal and professional skills in interacting with government and development partners.  (c) Experience in workshop facilitation and stakeholder engagements.  (d) Excellent report writing capabilities.  (e) Fluent in spoken and written English. Working knowledge of French and/or Portuguese is an added advantage. |
| 4. | **Meteorological and climate services Expert (could be in combination with the Team Leader role)** | Masters or PhD in Meteorology or Climate Science or related discipline, with experience in water related climate or meteorological products preparation. | 1. At least 10 in the production of regional climate products 2. At least 10 Years’ experience in hydrometeorological modelling and forecasting work 3. At least 5 years’ preparing or using SARCOF products (or other regional products) for early warning systems and advisory to users include the Water and disaster management Sector at country or regional levels. 4. Expertise in developing weather and climate products for use by clients such as water and DRR 5. General appreciation of climate information interpretation and its use in flood forecasting and early warning information generation 6. Fluency in English. French and Portuguese are added advantage.   **General Professional Experience:**   1. At least 5 years general experience in related consultancy work 2. Must be result-oriented, a team player, exhibiting high levels of enthusiasm, tact and integrity. 3. Ability to impart technical knowledge to others through training 4. Excellent analytical skills 5. Excellent report writing capabilities. 6. Fluent in spoken and written English. 7. Good presentation and facilitation skills 8. Working knowledge of French and/or Portuguese is an added advantage. 9. Computer literate with good working knowledge of the standard 10. Experience in interactive modeling platform. |
| 5. | **ICT specialist** | Masters in ICT or related background | 1. At least 10 years of experience in the field of ICT systems used in meteorology and hydrology, and in the dissemination and communication of data and messages, data management and processing 2. At least 10 years of experience in security management and inter-agency information exchange 3. Expertise in developing regional platforms for integration of data and products 4. Familiarity with risk and resilience related databases and systems 5. Demonstrate experience in similar assignments   **General Professional Experience:**   1. At least 5 years general experience in related consultancy work 2. Must be result-oriented, a team player, exhibiting high levels of enthusiasm, tact and integrity. 3. Ability to impart technical knowledge to others through training 4. Excellent analytical skills 5. Excellent report writing capabilities. 6. Fluent in spoken and written English. |
|  |  |  |  |

**4.2. Selection Criteria- after shortlisting stage**

Table 1 provides the selection criteria for the service provider.

Table 1: Selection Criteria

|  |  |  |
| --- | --- | --- |
| No. | Criteria Category | Total Points for Consultancy team (%) |
| 1. | Qualifications (education and professional skills of the team of experts) | 40 |
| 2. | Specific Professional Experience (training and skills development and programming) | 45 |
| 3. | General Professional Experience | 15 |

# **5.0. LOGISTICS AND TIMING**

## **5.1. Start date and period of implementation**

The assignment shall commence on the date of signature of the contract by both parties, and the period of implementation of the contract will be eighteen (18) months from date of signature of the contract.

**5.2. Location**

The assignment will involve traveling to selected Member States.

**5.3. Office accommodation**

None required

**5.4. Facilities to be provided by the contracting authority and/or other parties**

The SADC Secretariat, as the Contracting Authority will provide the following.

* Letters of introduction of the Consultant to stakeholders, Member States and RBOs to facilitate access to information;
* Available reports;
* Costs of participation of trainees for regional training workshops to be arranged (travel, accommodation and meals); and
* Venue for trainings

**5.5 Facilities to be provided by the contractor**

The contractor must ensure is the Team Leader and Technical Expert are adequately prepared and equipped for delivery drafting of deliverables and provision of capacity strengthening as applicable. Moreover, the Consultancy Firm is expected to be fully self- sufficient in terms of international travel associated expenses in the selected Member States with laptop and related device connectivity for projector for this consultancy.

**5.6 Equipment**

No equipment is to be purchased on behalf of the contracting authority / procuring entity as part of this service contract or transferred to the contracting authority / procuring entity at the end of this contract. Any equipment related to this contract that is to be acquired by the procuring entity must be purchased by means of a separate supply tender procedure.

**7. REPORTING REQUIREMENTS AND TIME SCHEDULED FOR DELIVERABLES**

**7.1. Deliverables and Reporting requirements**

The Consultant will report to the Deputy Executive Secretary-Regional Integration through the Acting Head of DRR Unit, with the day-to-day support supervision from the SADC Water Division of the Infrastructure Directorate and RCRP Project Coordinator.

In achieving the above, the service provider is expected to deliver the following (in addition to periodic progress reports):

**TASK 1 - Improving Early Warning System and related capacity**

1. An Inception Report for the assignment detailing the understanding of the Terms of Reference, methodology and approach for the assignment, expected outcomes and detailed delivery timelines in a Gantt chart.
2. A detailed consolidated assessment report highlighting the status of Member States early warning systems’ strengths, weakness, available opportunities for improvement and learning, and major threats and gaps.
3. A roadmap to support capacity strengthening and equipping Member States along the four pillars of an Early Warning System. It should also include a comprehensive and detailed set of recommendations including equipment, standard operating procedures, and human resource capacity enhancement requirements for each Member State.
4. A regional platform for sharing MHEWS knowledge and learning at the regional level.
5. Tools and methodologies for collection, packaging and dissemination of early warning information to inform early action.
6. Training reports and materials.
7. End project report in line with approved road map.

**TASK 2 - Improving flood and drought forecasting and related capacity**

1. Inception report describing the methodology and work plan
2. Flood risk assessment and vulnerability mapping study reports
3. Refining/strengthening hydrological models to use for flood forecasting
4. Training material on flood and drought early warning systems and on use of climate forecast products from SADC-CSC and NMHSs, as well as remote-sensed hydrometeorological data.
5. Report on delivered training on preparation of hydrological outlooks from climate forecast products from SADC-CSC and NMHSs.
6. Presentations on lessons learnt and delivery of presentation to regional multi-stakeholder dialogue sessions (knowledge exchange).

## **7.2. Project management**

The assignment shall be coordinated through a technical working group including the Head of the DRR Unit, the Director of the SADC Humanitarian and Emergency Operations Centre, the Head of the SADC Climate Services Centre and the Head of the Water Department, with support from the RCRP Project Coordinator. Outputs referred to the above activities shall be submitted to the Deputy Executive Secretary responsible for Regional Integration (DES-RI) through the Disaster Risk Reduction Unit for final approval.

Periodic progress meetings will also be held, at which the consultant will make presentations on progress. From time to time, representatives of participating Member States and RBOs and other important stakeholders will also be invited to participate in the project steering meetings. Outcomes and guidance from the meetings will be used to inform the quality of outputs highlighted above.

All activities conducted under this assignment, including studies, stakeholder engagement, training and capacity building, must align with the World Bank’s Environmental and Social Framework (ESF) and its applicable Environmental and Social Standards (ESSs), ensuring that recommendations consider potential environmental and social risks and align with best practices in transboundary water resource management.[[4]](#footnote-5) Work under this consultancy is also expected to incorporate gender-sensitive approaches as relevant.

**7.3. Duration of the assignment**

The proposed deliverables will be expected to be finalized within 18 months.

**7.4. Management Structure**

The Consultant shall report directly to the Acting Head of the Disaster Risk Reduction Unit.

**8.0 MONITORING AND EVALUATION**

**8.1. Definition of indicators**

The indicators to be used are deliverables, timeliness, technical scope and analytical quality of the deliverables as detailed in section 7 above. In addition, assessment of the quality of the deliverables will be based on validation by SADC Member States and effectiveness of capacity strengthening through pre-post training assessments.

**8.2. Special requirements**

The Consultancy Firm must declare any potential conflict of interest between the provision of the requested services, and other activities in which a member of their consortium of group(s), or any expert proposed in their offer is engaged.

**9. FINANCIAL PROPOSAL**

**9.1 Financial proposal**

The financial proposal should include all fees and relevant costs associated with the implementation of assignment and all incidentals.

**9.2. Payment Schedule**

Payment schedule is related to reports and their approvals, as reflected in Table 2.

**Table 2:** **Duration of the Assignment and Schedule of Payments**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Deliverables** | **Months** | **Payment Schedule (%)** |
| **TASK 1. Improving Early Warning System and related capacity** | | | |
|  | Inception Report for Task 1 | 1 | 20% |
|  | Consolidated assessment report and roadmap to support capacity strengthening | 3 | 25% |
|  | Regional platform | 6 | 25% |
|  | Final Report of Task 1 | 8 | 30% |
| **TASK 2. Improving flood and drought forecasting and related capacity** | | | |
|  | Inception Report for Task 2 | 1 | 20% |
|  | Flood risk assessment and vulnerability mapping | 4 | 25% |
|  | Refining/strengthening hydrological models | 8 | 25% |
|  | Final Report of Task 2 | 10 | 30% |

## 

**Annex 1**

**Mapping of institutionally mandated EWS by agency across SADC countries**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **National Meteorological Service** | **National Hydrological Service** | **DRM Service** |
| Angola | National Institute for Meteorology and Geophysics | National Institute for Water Resources | Angola DRM |
| Botswana | Department of Meteorological Services | Hydrology/Surface Water Division, Department of Water Affair | National Disaster Management Office |
| Comoros | Direction de la Météorologie (as part of Agence Nationale de l’Aviation Civile et de la Météorologie de l’Union des Comores) | Limited activity or non-existent | Direction Generale de la Protection Civile, represented by Centre National de Documentation et de Recherche Scientifique |
| DRC | Agence Nationale de la Météorologie et de Télédétection par satellite | Agence Nationale de la Météorologie et de Télédétection par satellite | Direction Nationale de la Protection Civile |
| Eswatini | Eswatini Meteorological Service | Directorate Hydrology: Department of Water Affairs | National Disaster Management Authority |
| Lesotho | Lesotho Meteorological Services | Department of Water Affairs | Disaster Management Agency |
| Madagascar | Direction General de la Météorologie | Direction General de la Météorologie | National Bureau for Disaster Risk Reduction |
| Malawi | Department of Climate Change and Meteorological Services | Department of Water Resources | Department of Disaster Management Affairs |
| Mauritius | Mauritius Meteorological Services | Ministry of Energy & Public Utilities (Water Resources Unit) | National Disaster Risk Reduction and Management Center |
| Mozambique | Instituto Nacional de Meteorologia | Direcção Nacional de Gestão de Recursos Hídricos | Instituto Nacional de Gestão e Redução do Risco de Desastres) |
| Namibia | Namibia Meteorological Service | National Hydrological Services of Namibia, Ministry of Agriculture, Water and Land Reform | Directorate Disaster Risk Management |
| Seychelles | Seychelles Meteorological Authority | Limited activity or nonexistent | Department of Risk and Disaster Management |
| South Africa | South African Weather Service | Directorate: Surface and Groundwater Information, Department of Water and Sanitation | National Disaster Management Center |
| Tanzania | Tanzania Meteorological Authority | Ministry of Water - Directorate Water Resources | Prime Minister’s Office - Disaster Management Department |
| Zambia | Zambia Meteorological Department | Zambia Water Resources Management Authority | Disaster Management and Mitigation Unit |
| Zimbabwe | Meteorological Services Department | Zimbabwe National Water Authority | Department of Civil Protection |

**Annex 2**

**Comparative methodological schema for benchmarking**

For Hydrometeorological and EWS: Please see Annex 5 of the [WMO Capacity Development Strategy and Implementation Plan (WMO-No. 1133)](https://etrp.wmo.int/pluginfile.php/36000/mod_resource/content/1/CDS%20wmo_1133_en.pdf)

For Disaster Risk Knowledge, dissemination and communication, and Preparedness and Response: Please see Appendix 1 of the Multi-Hazard Early Warning Systems (MHEWS) diagnostics (links provided in Annex 3 of the TOR)

Example of a full assessment report: please see [NMA report](https://documents1.worldbank.org/curated/en/099061323094039916/pdf/P1705480a113f00180a0d0010b0710d4989.pdf)

**Annex 3**

**Existing Assessments**

[A Regional Analysis of Weather, Climate, Water and Early Warning Services in Southern Africa: Status Quo and Proposed Actions](https://documents1.worldbank.org/curated/en/974411636364188920/pdf/Regional-Analysis-of-Weather-Climate-Water-and-Early-Warning-Services-in-Southern-Africa-Status-Quo-and-Proposed-Actions.pdf).

Early Warning for All (EW4All) Gap Analysis and Roadmaps for the following countries: *[These can be made available at the beginning of the consultancy work]*

* Comoros
* Madagascar
* Mauritius
* Mozambique
* Seychelles
* South Africa

Multi-Hazard Early Warning Systems (MHEWS) diagnostics for the following countries:

* [Comoros](https://wmoomm.sharepoint.com/:w:/r/sites/XB_Projects/_layouts/15/Doc.aspx?sourcedoc=%7B06E89C3A-9C98-497F-9325-684EB262224E%7D&file=MHEWS%20Diagnostic%20Comoros.docx&action=default&mobileredirect=true)
* [Madagascar](https://wmoomm.sharepoint.com/:w:/r/sites/XB_Projects/_layouts/15/Doc.aspx?sourcedoc=%7BF68C4239-AF1A-468A-85BD-CDD306378A5D%7D&file=MHEWS%20Diagnostic%20Madagascar.docx&action=default&mobileredirect=true)
* [Mauritius](https://wmoomm.sharepoint.com/:w:/r/sites/XB_Projects/_layouts/15/Doc.aspx?sourcedoc=%7B65810CBA-2D97-432D-B49A-5EC857FA4DA4%7D&file=MHEWS%20Diagnostic%20Mauritius.docx&action=default&mobileredirect=true)
* [Seychelles](https://wmoomm.sharepoint.com/:w:/r/sites/XB_Projects/_layouts/15/Doc.aspx?sourcedoc=%7BEFA4A4EA-4BC5-484B-A72F-454803A8EAA3%7D&file=MHEWS%20Diagnostic%20Seychelles.docx&action=default&mobileredirect=true)
* [South-west Indian Ocean region](https://wmoomm.sharepoint.com/:w:/r/sites/XB_Projects/_layouts/15/Doc.aspx?sourcedoc=%7B8EA4720A-8299-45E6-ACC0-69EC40702656%7D&file=MHEWS_Regional-Report.docx&action=default&mobileredirect=true)

Roadmap for Strengthening Hydrometeorological and Early Warning Services in Malawi. *[It can be made available at the beginning of the consultancy work]*

Country Hydromet Diagnostics for the following countries: *[available at:* [*https://alliancehydromet.org/country-hydromet-diagnostics/*](https://alliancehydromet.org/country-hydromet-diagnostics/)*]*

* Comoros
* DRC
* Madagascar
* Malawi
* Mozambique
* Tanzania
* Zambia

1. Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe. [↑](#footnote-ref-2)
2. Heymans,Christiaan; Takeuchi,Ko; Kattan De Soto,Celina; Pérez, Mario López. *SADRI Cities - A Regional Guidance Note for the Southern African Development Community (English).*Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/099105012232218615/P1748560021e33090acb30b9fecab637ee> [↑](#footnote-ref-3)
3. World Bank. 2021. A Regional Analysis of Weather, Climate, Water and Early Warning Services in Southern

   Africa: Status Quo and Proposed Actions. Washington, DC: World Bank. [↑](#footnote-ref-4)
4. Please see here for World Bank Group ESS: <https://projects.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards> and here for World Bank Group ESF: https://www.worldbank.org/en/projects-operations/environmental-and-social-framework [↑](#footnote-ref-5)