# Annex I

## Terms of Reference/Work Plan and Budget

ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries

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## A. Overview

<table>
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<th>ORGANIZATION SUBMITTING PROPOSAL</th>
<th>UNDP Asia-Pacific Regional Centre, Bangkok¹</th>
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</table>
| 2 | FOCAL POINT AT ORGANIZATION AND RELEVANT CONTACT INFORMATION | 1. Dr. Nescha TEECKLE, Team Leader  
2. Sanny JEGILLOS, Regional Programme Coordinator  
Crisis Prevention and Recovery Team |
| 3 | PROJECT TITLE | Strengthening Early Warning Systems for Extreme Weather Events to Advance Climate Risk Management in the South East Asian Region |
| 4 | BENEFICIARY COUNTRIES | Cambodia and Timor-Leste |
| 5 | TARGET GROUP / SPECIFIC LOCATIONS | National Warning Centres, National Disaster Management Organizations and Local Disaster Management Officials |
| 6 | TIME FRAME | 1 May 2011 – 30 April 2013 |
| 7 | TOTAL BUDGET (US$) AND BREAKDOWN OF FUNDING SOURCES | ESCAP Tsunami Trust Fund: US$ 381,066.40  
Partner institution contribution: US$ 40,000  
Third party co-financing: US$ 5,000  
Total Budget: US$ 426,066.40 |

¹ Unless specified, "UNDP" in this document refers to the UNDP Asia Pacific Regional Centre (formerly Regional Center in Bangkok) or UNDP-APRC. Within the APRC, the Regional Crisis Prevention and Recovery (RCPR) Team will be responsible for managing this proposed project.
EXECUTIVE SUMMARY

The recent spate of climate related disasters in South East Asia reveals gaps in climate risk assessment, and early warning systems and its utilization for preparedness and response to extreme weather events. In response to these gaps and building on its past experience in DRR efforts including strengthening regional tsunami warning systems, UNDP proposes to work towards strengthening national capacities for managing extreme weather events within the climate change context.

Based on its engagement with several countries in the region, UNDP considers it strategic to target and invest efforts of this project in low capacity countries. Thus the strategy of the project will focus on strengthening capacities to manage extreme weather events in Cambodia and Timor-Leste. These efforts will also contribute to and provide the building blocks for stronger adaptive capacities to the challenges posed by climate change.

UNDP will leverage its existing partnerships with regional and national actors to support the development of regional and national standard operating procedures, forming capacity in vulnerability assessment and conduct series of trainings for strengthening capacities for managing extreme weather events, at both the national and regional levels.
B. Needs Assessment

Capacity building needs. The proposed project builds on the successes of the tsunami early warning systems. This include building on: a) RIMES and its linkages with national organizations; b) methodologies and application of risk analysis at sub national level supported by UNDP; c) training curriculum and multi country drills to test Standard Operating Procedures (see next section for details). This proposal seeks to continue to strengthen early warning system and shall adopt a multi-hazard approach as identified in the Report on Regional Unmet Needs:

"...However, in almost every aspect of tsunami warning – from operation of sea level sensors to institutional frameworks to community awareness initiatives – tsunami warning is most effectively and sustainable addressed through a multi-hazard approach, together with other related hazards. Most initiatives to develop tsunami warning in the region have indeed been adopting such as approach. In this regard, early warning can be considered an important form of climate change adaptation, since climate change is expected to increase frequency and severity of natural disasters."

The proposed project will directly contribute to the following priorities/recommendations as identified in the said Report on page 39:

"Governance and Institutional Arrangements"
4. Support links between institutional arrangements at different levels of government, from the regional to the national, provincial and community levels, including end-to-end SOPs

"Risk Knowledge"
8. Promote capacity development for standardized information storage, system compatibility, data accessibility and their use for disaster risk reduction

"Monitoring and Warning Service"
12. Promote national support for real-time, timely, free and open access to data, analysis, and other information products for (tsunami) warning purposes

"Communication and Dissemination of Warnings"
13. Continue to support development of Standard Operating Procedures (SOPs) from the regional to the national, provincial and local levels"

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2 Tsunami Early Warning Systems in the Indian Ocean and Southeast Asia: Report on Regional Unmet Needs, Tsunami Trust Fund, ESCAP (2009)
What has already been done by UNDP or is ongoing to address the needs?

UNDP through its Regional Crisis Prevention and Recovery (RCPR) team based at Asia-Pacific Regional Centre (APRC) in Bangkok has been supporting development of regional and national capacities for tsunami early warning systems in close coordination with relevant international, regional entities, UN agencies and other key stakeholders. Some of the highlights of UNDP’s work include:

**Governance and Institutional Arrangements:**

Institutional and legislative systems for early warning and disaster risk reduction: Earlier in 2008, UNDP supported national studies on “Institutional and Legislative Systems for Early Warning and Disaster Risk Reduction” in Sri Lanka, Thailand and Indonesia which were published by UNDP in 2009. All the three studies identified that while the legislations in the three countries mark significant milestone, these lack specific legal language on early warning systems. The studies also included review of identification and inclusion of gender issues in the legislation.

Capacity development of National Disaster Management Offices: UNDP has organized a number of regional and national meetings and training workshops in support of developing capacities of national institutions in tsunami-affected countries. All of these events aimed at improving sharing and cross-learning across the tsunami-affected countries and have resulted in positive outcomes. In addition, the UNDP has documented, published and shared several documents capturing lessons learned and good practices from the tsunami-affected countries.

**Risk Knowledge:**

Standardized guidelines for tsunami risk assessment and mitigation: UNDP working with the Working Group on Risk Assessment within the framework of ICG/IOTWS under IOC/UNESCO has supported development of standardized Guidelines for Tsunami Risk Assessment and Mitigation which has been adopted by the ICG/IOTWS - VI and is published by UNESCO. UNDP in collaboration with IOC/UNESCO organized a regional training on tsunami risk assessment and mitigation in November 2009 for the Indian Ocean member countries. Continuing with the collaboration, UNDP together with ICG/IOTWS Working Group organized a National Training Workshop in Sri Lanka using the Tsunami Risk Assessment and Mitigation Guidelines.

Development and institutionalization of disaster loss databases: UNDP supported development and institutionalization of national disaster loss databases in the tsunami affected countries. In addition to the databases established at the government focal organizations in Sri Lanka, Indonesia and in Tamil Nadu, India, a number of provinces

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3 UNDP is currently implemented a regional project (Jan 2010-Jun 2011) on “Building risk knowledge to enhance early warning, preparedness and mitigation in tsunami-affected countries” with support from Multi-donor Voluntary Trust Fund on Tsunami Early Warning Arrangements in the Indian Ocean and Southeast Asia (See Annex I)

in Indonesia\(^5\) have established disaster loss databases realizing its usefulness to help the governments in identifying emerging trends and patterns of risks to better support decision-making for preparedness, response, recovery and disaster risk reduction. These databases have been used to analyze the interface between disaster risks and poverty using a pioneering methodology. National disaster risk and poverty analysis were undertaken in Nepal, Iran, Sri Lanka, Tamil Nadu and Orissa states of India using the disaster and poverty datasets and the results of the studies have been published by UNDP. The analysis generated by the country studies has been used in the 2009 Global Assessment Report on Disaster Risk Reduction to guide policy makers in using disaster risk reduction in poverty alleviation programmes.

**Communication and Dissemination of Warnings**

Development of regional standard operating procedures for regional early warning systems: UNDP has been supporting the development and enhancement of regional SOP for tsunami early warning systems in 2006, 2007 and 2008. In addition to supporting organization of regional SOP training workshop, UNDP also supported a National Training Workshop on SOP in Maldives in June 2009.

**Response Capability**

Support to preparation and conduct of Indian Ocean wide tsunami exercise in October 2009: UNDP provided support to the first Indian Ocean wide tsunami exercise, termed as IO Wave 09, under the framework of ICG/IOTWS with participation of the 28 member countries. The exercise was aimed at evaluating the effectiveness of the IOTWS, regional tsunami watch providers, national disaster management offices and the media. Several national, local government agencies and non-government agencies from Indonesia participated in the exercise and a number of Indian Ocean countries also participated in the exercise.

What other major activities are being undertaken in the area?

**National training on tsunami risk assessment and mitigation in Indonesia**: Led by the National Disaster Management Agency BNPB, the national training was organized during November 2010 and it focused on provinces and districts vulnerable to tsunami hazards along the coast of Indonesia. The organization of the training was based on the minimum standard guidelines developed under the leadership of BNPB who intends to make it obligatory for local governments in all coastal areas to undertake tsunami risk assessment following the minimum standard guidelines.

**Development of case study on tsunami risk assessment in Sri Lanka**: UNDP working with ICG/IOTWS supported the development of a case study “Risk Assessment and Design of Countermeasures for Tsunami Hazard – Case Study for the Port City of Galle” which documents the key steps and results achieved using tsunami risk assessment methodology in Sri Lanka.

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\(^5\) DiBi Java Tengeh (http://dibijateng.sc-drr.org), DiBi NTT (http://dibi.nttprov.go.id), DiBi Yogyakarta (http://dibui.jogjaprov.go.id), DiBi Acheh (http://diba.sc-drr.org) are some of the online provincial disaster loss databases in Indonesia

\(^6\) Assessing the Relationship between Natural Hazards and Poverty: Asia Country and State Case Study Report, UNDP (2010)
Regional SOP development workshop: Given the latest development such as new shake map and GPS aided information and the results of IO Wave 2009 Exercise, the Indonesia Agency for Meteorology, Climatology and Geophysics (BMDK) is planning to organize a regional SOP training workshop in 2011 under the ongoing ESCAP Tsunami Trust Fund supported project implemented by UNDP.

C. Problem analysis and project design

Problem identification within the regular role of the UNDP Asia Pacific Regional Centre: Aligned with the Strategic Plan of UNDP, the Regional Programme Document for Asia-Pacific mandates UNDP to work with and in support of national efforts in planning and supporting disaster risk management efforts. Under this Strategic Plan, a team of specialists are undertaking the implementation of the Regional Crisis Prevention and Recovery Project (RCPR)7 that builds on the progress achieved from a previous project that was completed in 2009 in response to the Indian Ocean Tsunami of 2004 (CBISR)8. During the course of the implementation of these regional projects (CBISR 2005-2009; RCPR 2009-present), UNDP is engaged in promoting capacity development that involves capacity and needs assessments, and analysis of progress in DRR according to HFA commitments and indicators. UNDP is also actively participating in experts’ group meetings such as within the ICG-IOTWS which regularly review progress in EWS. As member of the Crisis Prevention and Recovery (CPR) team based in the region, it also conducts regular country specific needs assessment and support for project formulation in DRR. The Team also works with UNDP’s Environment and Energy Team within APRC who provides policy and technical advice on climate change adaptation including support to the preparation of the Initial National Communication and National Action Programme for Adaptation (NAPA) processes. In addition, there exists a cooperation framework between Regional Commissions and UNDP to promote internationally agreed development goals and to promote coherence and synergies in support of development priorities of national partners.9 Within such roles, and Strategic Plan and existing cooperation framework with Regional Commissions, UNDP is continuously involved in identifying needs and gaps on DRR in consultation with a number of stakeholders. The problem and needs presented below are identified based on the on-going needs assessment being undertaken within the roles listed above.

1. The need to develop regional capacity in early warning systems for multi hazards application.

Organizations consulted: RIMES, ASEAN Secretariat, national disaster management offices, national hydro-meteorological agencies and selected local governments from Cambodia, Lao PDR, Vietnam, Philippines, Indonesia, China and Timor-Leste.

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7 See Annex 2
8 Capacity Building for Disaster Risk Reduction and Sustainable Recovery in countries affected by the Tsunami, funded by the Government of Norway and the EC-AIDCO through the UNISDR until August 2009 (see Annex 3).
9 See Annex 4 on Cooperation Framework between the Regional Commissions and the UNDP
Strengthening Early Warning Systems for Extreme Weather Events to Advance Climate Risk Management in the South East Asian Region

References used: AADMER Workplan, OCHA Situation Reports 2009 and Highlights of “Climate Risk Information - A Regional Dialogue on Supply and Demand”

UNDP has had consultations with RIMES discuss the existing extreme weather forecasting capacity in Southeast Asia and its utilization by countries particularly those events that happened during the last quarter of 2009 in the region. Since Cyclone Nargis in May 2008, RIMES had been providing selected member states forewarning on extreme weather events. Undocumented case studies, discussed with UNDP indicate a high level of accuracy of prediction associated with Typhoon Parma, Ketsana and Mirinae in the last quarter of 2009. Discussions with the participants of the Regional Dialogue further confirmed that regional cooperation can help to bridge the capacity gaps for weather observation, forecasting and issuance of early warning. RIMES has been established by its member countries to bridge the gaps in improving weather forecasting and application. Participants of the Dialogue brainstormed and developed a matrix of on-going and planned activities in each country represented, with the purpose of reducing potential problems of duplication and identify opportunities for synergy of implementation at the country level. Under this project RIMES will be one of the most important partners in the “upstream” EWS.

Under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) ratified by the 10 Member States comprising the ASEAN Committee for Disaster Management (ACDM), ASEAN Secretariat has prepared a work programme to improve the capacities of ASEAN member countries for effective and efficient regional early warning and monitoring, preparedness, emergency response, and DRR in the region by putting in place supportive policies, systems, plans, procedures and mechanisms, and institutional and legal frameworks, at both regional and national levels. Given the recent extreme weather events in the last quarter of 2009 and ratification of AADMER, UNDP APRC and ASEAN have been under discussion to sign an Agreement to develop capacities of the project countries and to synergize with the proposed activities under AADMER work programme. UNDP sees it as a good opportunity to build synergies since the same set of national agencies that are also focal organizations to implement AADMER and the project activities will contribute to developing national capacities in Cambodia and Timor-Leste.

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10 Organized by UNDP APRC in collaboration with RIMES, 1-3 December 2010, Bangkok. See Annex 9 for more details.
11 Regional Integrated Multi-Hazard Early Warning System (RIMES) became an independent and fully functional official body in January 2010 through an International Agreement among 26 countries in the Afro-Asian Region.
12 Technical discussion between UNDP RCB/CPR and RIMES Senior Management and Scientists, February 22, 2010. Note however that during the RIMES Council meeting in Feb 2011, new evidence were presented confirming the high level of reliability of these RIMES forecasts (TC Ketsana, Parma, Mirinae) although public uptake continue to be a problem.
13 See Annex 9
14 Upstream- roughly means regional monitoring, detection, prediction and sharing of information to the National Hydro-meteorological agencies. Downstream systems include formulation of national early warning messages, dissemination, communication and immediate emergency response.
2. The need to focus on Cambodia and Timor-Leste on the urgent issue of EWS and emergency response to extreme weather events within the climate change context.

Organizations consulted: The National Committee for Disaster Management in Cambodia, the National Directorate for Disaster Management and National Meteorological Services in Timor-Leste. Processes: HFA Reporting and individual consultation in association with RIMES (for Cambodia) and project formulation mission in Timor-Leste.


CAMBODIA:

An assessment of NCDM’s (National Committee for Disaster Management) capacity (APDMC 2002) identified that while the NCDM has reasonable capacity for dealing with immediate relief and response, it is limited in its ability to coordinate with key line ministries, local governments and communities for broader disaster risk management. Recent response to Typhoon Ketsana highlights some of the fundamental areas for reform in Cambodia’s emergency response and disaster risk reduction systems. Cambodia’s early warning system need to be improved with appropriate national capacities to make it efficient and at the same time the capacities of Provincial Committees for Disaster management (PCDMs) and District Committee for Disaster Management (DCDM) and Commune Committee for Disaster Management (CCDM) are focused on primarily post-disaster response and not on disaster risk reduction\textsuperscript{16}. None of these committees is ready to respond to disasters such as Ketsana Typhoon in 2009. Forecast and early warning information usually reaches provincial levels but not at the commune level. During Ketsana Typhoon, the reported losses were high due to the fact that the affected provinces could not communicate in a timely manner with the authorities and residents of their communes. Based on Official 2009 HFA Reports, there is lack of national and local risk assessment in Cambodia. Human resources, mechanisms and systems to collect regularly, maintain, as well as utilize data and information on hazards, vulnerabilities and exposure are limited. Emergency relief continues to be accorded priority by national and local authorities when compared to DRR. Further, EWS and forecasts do not reach the end users at community levels in the country, as the links are either not established or not functional. Adequate resources and systems need to be put in place to strengthen the entire EWS.

TIMOR-LESTE:

During the recent programming mission to Timor-Leste by UNDP aimed at developing capacities of national and district authorities for disaster preparedness and management in Timor-Leste, it was ascertained that the majority of the activities of NDMD (National Disaster Management Directorate) are related to providing

\textsuperscript{15} Annex 8

\textsuperscript{16} Discussion with Ross SOVANN, National Committee for Disaster Management (2009)
relief and supporting community recovery. A National Disaster Operations Centre and 2 District Disaster Operations Centres were recently established with support from UNDP, but these do not have skilled personnel and facilities critical for early warning, disaster monitoring and reporting. There were shortcomings identified in the existing communication systems during the recent extreme weather events. The NDMD receives severe weather warnings temporarily from Australian Bureau of Meteorology; Tsunami Watch Information is available through Japan Meteorological Agency in coordination with the Pacific Tsunami Warning Centre.\textsuperscript{17} UNDP had completed a capacity assessment of NDMD in 2009, but the implementation of the recommendations had been slow due to lack of funding. Timor-Leste’s national hydro meteorological services are increasing its capacity, but still limited to weather monitoring and observation. Important capacity in early warning such as in analysis, prediction, forecasting and warning dissemination for extreme weather events and seasonal variability (ENSO) is almost nil\textsuperscript{18}. While improvements are planned under the new national DRM Policy, the commitment and capacities for comprehensive DRR are limited in relation to the commitments under the Hyogo Framework of Action (HFA). Given that the country is young with new institutional arrangements being established, the current focus as indicated in NDMD’s Strategic Plan is limited to 2 out of 5 recommended priority actions of the HFA-i.e. HFA Priority no. 5: \textit{Strengthen disaster preparedness for effective response at all levels and Priority no. 2: Identify, assess and monitor disaster risks and enhance early warning. These suggest that in other important priority actions, Timor-Leste has shown “minor progress with few signs of forward action in plans or policy” (HFA Priority 1: Ensure that disaster risks reduction is a national and local priority with a strong institutional basis for implementation; HFA Priority 3: Use knowledge and education to build a culture of safety and resilience at all levels; and HFA Priority 4: Reduce the underlying risk factors).}

3. **The need to understand risk in a changing climate**: Two processes form the basis for supporting activities that will help countries modify existing DRM practices as demanded by changing climate.

   \textit{Process 1: Establishment of national disaster loss data bases, analysis of relationship between disaster risk and poverty as UNDP’s contribution to Global Assessment Report 2009.}

UNDP’s APRC has helped establish national loss data bases in a number of countries and took the lead role in the Asian region to develop and apply the methodology for analyzing the relationship between disaster risk and poverty. These data bases are able to provide analysis of trends of crisis events for the past 30 years and provide information disaggregated at the lowest administrative bodies. The analysis of these trends in a number of countries have helped establish the evidence that classify risks into two categories- intensive risk (less frequent catastrophic events) and extensive risk (low intensity and more frequent events). The result of such capacity development effort is a direct contribution of UNDP to global advocacy through the Global Assessment Report 2009. The result of this process indicates the following findings relevant to establishing the need for this project: The

\textsuperscript{17} For further analysis and findings, see Annex 8: UNDP Timor-Leste Mission Report (2010)

\textsuperscript{18} Missions discussion with Director of the Meteorology Department and opinion obtained from RIMES (Thailand)
nature of extensive risk that would appear to be characterized by large numbers of frequently occurring but highly localized events, such as landslides, flash floods, fires and storms, mainly associated with climatic hazard, affecting specific groups of people and economic assets spread over extensive areas. When these losses are accumulated, extensive risk adds 30% in mortality and 100% in housing damages. This project therefore is planned to address improvement of warning and response that will address extensive risk and will benefit local emergency response organizations.

**Process 2: Lessons learned from extreme weather events in the last quarter of 2009 in Southeast Asia.**

Climate change will require modification of existing DRM practices due to uncertainty and unpredictability. As a case in point, the Philippines, Vietnam, Cambodia and Lao PDR suffered unprecedented and heavy damages during the successive extreme weather events in the last quarter of 2009. Tropical Storm Ketsana swept across Manila and parts of Central Luzon. **Philippines** on 26 September 2009, bringing new historic rainfall recorded in a 12-hour period. Rainfall in Manila was 450mm, a rare occurrence even in a country visited by an average of 20 tropical cyclones each year. On 3 October, Typhoon Parma made landfall in Northern Luzon, reversing track twice and bringing heavy rains over an area much larger than initially anticipated. Parma was followed by Typhoon Mirinae on 31 October, the third typhoon within a period of just over a month. After devastating most of Luzon Island in the Philippines, the same sets of tropical cyclones brought heavy rains in **Vietnam**. Typhoon Mirinae was exceptional as the extreme weather event resulted in new historic volume of rainfall in Northern Vietnam. Similar to the case in the Philippines, the capital of the country, Hanoi, was affected heavily with 700 mm of rainfall recorded over a 24-hour period. After leaving a trail of devastation in the Philippines and Vietnam, Typhoon Ketsana hit **Cambodia** on 29 September 2009. Kampong Thom and Siem Reap provinces were severely affected, with heavy damages to infrastructure and agriculture. In **Lao PDR**, Lao Red Cross identified six southern provinces hard-struck by Ketsana. Up to 155,500 persons were directly affected, and 37,500 displaced. The national society reported 16 dead, 143 missing and 120 injured. The flooding in the country exceeded the floods that occurred in August 2008.

The extreme weather events in Southeast Asia during the last quarter of 2009 were considered exceptional - with historic amounts of rainfall and damaging effects from successive cyclones in a short span of time, and destructive impacts on several communities (in at least four countries). UNDP was involved in facilitating a lessons learned workshop in the Philippines, which generated discussions and recommendations to improve Early Warning Systems (EWS) for extreme weather events. Anecdotal comments from officials of National Disaster Management Offices (NDMOs) in these countries indicate that the characteristics of disasters had been exceptional. Observations included the following:

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28 ReliefWeb and IFRC Appeal
30 Rising Above & Beyond O.P.S.: Ondoy-Pepeng-Santi Lessons-Learned Workshop
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- Forewarning of the intensity of rainfall was virtually absent and the total magnitude of the flash floods occurring in a short period stretched emergency management systems and traditional community coping mechanisms in Vietnam and in the Philippines.22
- Communities in affected areas in Cambodia and Lao PDR23 were caught unprepared. This especially since the southern provinces of Laos and the northeastern provinces of Cambodia were not previously regarded as “hot spots” or flood prone provinces.
- All three tropical cyclones were considered by weather forecasters as “erratic” each with characteristics that made their intensity, magnitude and movements difficult to predict by the national hydro meteorological services.24

Most communities suffered from compounded or accumulated effects of more than one cyclone occurring within one month period, hence the impact were “extreme”. Historical flood levels were exceeded, the duration of flood inundation was more than the average period, and the total number of affected population by percentage and absolute number were unprecedented. While the sum of economic impact for four countries are yet to be tallied, a report from the Post Disaster Needs Assessment (PDNA) in the Philippines25 suggests that with more than US$ 4.3 billion in economic damages, the cost of these extreme weather events in the Philippines are comparable to the economic impact of the Indian Ocean 2004 Tsunami in Aceh. The PDNA also recognizes the specific protection needs of women, children, elderly and the disabled. It highlights the need for building capacity of relevant local and central government institutions in disaster preparedness and monitoring of longer-term impacts in order to improve the response to future disasters.

D. Target group

At regional level, the project will utilize the technical capacity available with Regional Integrated Multi-Hazard Early Warning System (RIMES), established in Thailand and composed of 26 Member States. Both Cambodia and Timor-Leste have participated in the establishment of RIMES. Established in January 2010, RIMES has been engaged in providing localized severe weather information, seasonal climate outlook, capacity development activities for member states. While leading the proposed project activities, RIMES will develop additional capacities (training course curriculum, capacity development for member countries, downscaling weather information) to meet the needs of its member states.

ASEAN Secretariat will be involved in the project activities to ensure that there is synergy between the proposed project activities and AADMER (ASEAN Agreement on Disaster management and Emergency Response) work plan agreed by 10 member states as the same set of national agencies from Cambodia and Timor-Leste are involved with RIMES and AADMER.

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22 UNDP-NDCC Philippines Lessons Learned Workshop, December 2009
23 Situation Reports from OCHA and IFRC, November-December 2009
24 Discussions with Dr. P.D. NILO (PAGASA) and Ian WILDERSPIN (UNDP-Vietnam)
25 http://pdf.ph/ Downloaded February 17, 2010
At national level, training will be imparted to the officials of national hydro-meteorological agencies and national disaster management offices on various aspects of weather forecasting and standard operating procedures for early warning systems.

In addition, stakeholders representing national, local government and community organizations in each country will be trained in using standard operating procedures for early warning systems. Although minimal efforts have been undertaken so far on standard operating procedures, such as the involvement of Timor Leste in UNDP supported regional training events on tsunami EWS, this project will build on existing work already undertaken in both Cambodia and Timor Leste. The focus will be to ensure that reliable and timely early warning messages are received in time by the local government and its vulnerable communities and actions as per agreed SOP are undertaken by key stakeholders.

Furthermore, 2 staff from national hydro-meteorological services in each country will be on secondment to RIMES for a period of 2 months to undertake technical training with the goal of developing national capacities in Cambodia and Timor-Leste.

E. Project strategy

Overall strategy:

This project will be undertaken to build the urgent and mandatory capacity required for managing extreme weather events within the climate change context. It will address both intensive risks (extreme event/s with extreme impact) and extensive risks (extreme impact due to recurring weather events, climate variability and losses accumulated over time). The project will directly benefit Timor-Leste and Cambodia, selected due to their limited capacity to manage extreme weather events, and are already struggling with current climate change issues with very high adaptation deficit. Initially, the coastal areas from these countries will be targeted for support who are likely to suffer from the most devastating impacts of climate change related extremes and which will be superimposed upon the long-term sea level rise. This project shall consist of the basic steps that will lay the foundation for a regional capacity for managing extreme weather events in the climate change context. This will be undertaken by supporting RIMES in developing official and region wide SOPs for early warning within its multi hazard mandate and linking these with developing country level capacities for national warning systems and emergency response. The project will utilize the infrastructure and capacity of RIMES established to function as Regional Tsunami Watch Provider in improving provision of climate risk information. This will also involve working with the ASEAN in support of the AADMER work plan. It is important to note that the scope and design of the proposed project were determined as part of a larger regional plan/strategy that UNDP is formulating. The regional plan involves undertaking similar capacity development efforts in other countries in the Southeast Asian region that are exposed to extreme weather events (i.e. Philippines, Vietnam, Indonesia, and Lao PDR). The plan will also include forming a regional mechanism on knowledge management for extreme weather events and connecting existing climate change centres that can create and disseminate guidelines, methodologies, and overseeing their applications.
Why focus on “extreme weather events”?

Depending on the context, physical extremes may or may not bring along extreme impacts; likewise, some extreme impacts may follow from events which in purely physical terms and in isolation from social context would not be defined as extreme. For example, the vast majority of disasters registered annually in particular disaster databases are not associated with extreme physical events as defined probabilistically but many have important and even extreme impacts for local and regional societies (GAR, 2009\(^\text{26}\)). It is widely believed that climate change may affect the frequency and magnitude of extreme events in the region and the consequences of those events. In general, these systems face changes of two types: 1) chronic, gradual, long-term changes such as trends in climate averages, sea level rise, and shifts in ecosystems and 2) changes in the frequency and character of extremes of weather and climate such as droughts, floods, and storms (IPCC 2007).

Why coastal areas?

The most devastating impacts of climate change related extremes are likely to be associated with extreme sea levels due to tropical storms, which will be superimposed upon the long-term sea level rise. The impacts will be more severe for deltas, coastal wetlands and small island states, as well as poorer large urban centres. In the Southeast Asian region, population pressure is also highest in coastal areas where marginal fishing activities and fish/shrimp farms attract cheap labor and associated migration. More so, many of the region’s capital and centre of trade and commerce are built in these areas. Major economic impacts are also expected as a result of disruption to coastal tourism.

Why Cambodia and Timor-Leste?

On top of being classified as LDCs, recent HFA Reports and Capacity Assessments undertaken by UNDP in these countries clearly indicate the low capacities for disaster risk management in these countries. Regional reports on climate change adaptation capacities that compare different countries in the SEA region further provide evidence that these countries ranked lowest in adaptive capacities. During recent missions associated with this project formulation- UNDP has determined that the national meteorological services in these countries have not even achieved the minimum capacity required for the entire range of monitoring, observing, analyzing, developing warning messages and disseminating these. The NDMOs of these countries are very weak in the basic functions of developing and implementing standard operating procedures for emergency response involving other agencies at national and local levels. Noting these inadequacies, however, both the NCDM in Cambodia and the NDMD in Timor-Leste are focusing its efforts in developing EWS SOPs in association with RIMES and UNDP.

\(^{26}\) UNDP’s Regional CPR Team is the lead in this advocacy through its work in establishing national loss data bases and pioneering efforts for developing and applying methodology for analyzing disaster risk and poverty. UNDP’s efforts become the basis for highlighting “extensive risk” along with similar efforts in Latin America.
Utilizing existing institutional infrastructure and capacities established for tsunami early warning system.

This project builds on regional institutional capacity and infrastructure established after the 2004 tsunami disaster. On one hand, the mandate and capacity of RIMES allows it to contribute to further development of regional and national capacities for sharing and utilizing climate risk information. To be successful in its regional role, appropriate national capacities for receiving and processing climate information as per agreed regional standard operating procedure are to be developed in the region. UNDP in close partnership with RIMES will fully utilize the existing capacity with RIMES. In addition, UNDP APRC has been closely associated Intergovernmental Coordination Group (ICG) of the Indian Ocean Tsunami Warning System (IOTWS) in supporting development of regional tsunami early warning system, including SOPs for regional early warning system and Development of Guidelines for Tsunami Risk Assessment and Mitigation for Indian Ocean Countries. UNDP APRC has supported BMKG of Indonesia in supporting development of regional SOPs for early warning system.

Building blocks on national level capacity development within climate change context.

This project builds on existing and ongoing efforts at the national and regional levels in reducing impact from multiple hazards and differential vulnerabilities. At the national level, support to national meteorological services will immediately result to improvement in personnel skills, IT capacity enabling them to access reliable and timely weather information from various global and regional sources notably from RIMES. EWS and downstream capacity for emergency response shall be improved through SOPs and convening national level multi-agency actions which will is expected to timely actions to support communities at risk already struggling from adaptation deficit. These among other UNDP support at the national level shall strengthen the DRM sector within the National Action Programme for Adaptation (NAPA).

Building blocks for a regional mechanism for knowledge management in addressing extreme weather events within climate change context.

As the resource will allow, UNDP shall implement similar capacity development efforts in other countries in the region that are exposed to extreme weather events. This proposal therefore is part of a bigger regional project that involves other countries in the region, forming a regional mechanism for knowledge management, connecting existing climate change centres that will create, develop and disseminate guidelines and methodologies necessary for effective measures addressing extreme weather events. This knowledge management mechanism shall also address current gaps including the need for better climate risk analysis and robust decision making capacities to address wide uncertainties.
F. Results Framework

Project Activities

1. Development of weather forecasting capacities in project countries supported by functional regional Standard Operating Procedure for early warning systems

1.1 Review of early warning systems in project countries to ascertain gaps in weather forecasting capacities and to develop strategy for building minimum national capacities

A review of the existing institutional capacities for receiving, processing and disseminating early warning and weather forecasting capacities will be undertaken by UNDP and RIMES in Cambodia and Timor-Leste. Efforts will be made to define minimum standard capacity in the context of each country with the view of supporting development of the defined minimum capacities under this project. The review will provide the project a basis for developing strategy for bridging the gaps and for supporting development of minimum national capacity in Cambodia and Timor-Leste.

Performance indicator:
- Identification of capacity gaps for weather forecasting and early warning systems for extreme weather events in Cambodia and Timor-Leste and a strategy for developing minimum national capacities for receiving, processing and disseminating early warning messages and utilization of time scale weather forecasts

1.2 Development of curriculum for regional training on improving collection and sharing of reliable forecasts to national agencies and to develop regional SOP for early warning system

Based on the assessment and country strategy, RIMES and UNDP will develop curriculum for a regional training for the participants of the national hydro-meteorological services and national disaster management offices of Cambodia and Timor-Leste on key aspects of seasonal outlook, monthly and real-time forecasts and their interpretation. The training will also emphasize on the importance of collection of reliable weather data and it’s sharing for improvements of regional weather forecasting models. Regional Standard Operating Procedure (SOP) to support regional early warning will be developed with the goal of training key national institutions. Special emphasis will be given on supporting the decision-making based on the uncertainties associated with the time, location and other parameters associated with individual extreme weather events.

Performance indicator:
- Curriculum for regional training incorporating SOP is developed
- Regional SOP is developed
1.3 Organization of regional training to improve collection and sharing of reliable data and for sharing seasonal, monthly and real-time forecasts for extreme weather events as per agreed SOP

On the basis of identified capacity gaps, RIMES and UNDP will conduct regional training for the participants of the national hydro-meteorological services and national disaster management offices to impart training on key aspects of seasonal outlook, monthly and real-time forecasts and their interpretation and dissemination of early warning as per agreed SOP. The training will also emphasize on the importance of collection of reliable weather data and it's sharing for improvements of regional weather forecasting models.

Performance indicator:
• One regional training for the hydro-meteorological agencies and national disaster management agencies is conducted to impart training to at-least 8 participants from each project country

2. Strengthening of national and local preparedness and response capacities for utilization of seasonal forecast for extreme weather events

2.1 Vulnerability and exposure profiles for Cambodia and Timor-Leste is developed to identify potential areas vulnerable to extreme weather events

Vulnerability profile will provide the necessary information on the typology of vulnerabilities for various populations in different locations of the country and at different period of the year (spatial and temporal). This will help to provide a basis of providing forecast at an appropriate resolution and scale27 for Cambodia and Timor-Leste to assist in preparedness and response planning. Efforts will be made to establish and institutionalize disaster loss database in Cambodia and Timor-Leste to ensure that the governments are able to keep track of the occurrence and impacts of disaster events at national, district and sub-district and use the analysis for improving planning for preparedness, response, recovery and risk reduction.

Performance indicator:
• Vulnerability profile for Cambodia and Timor-Leste country is developed. The profile will identify population exposure on temporal and spatial scale (who, where, when).
• Disaster loss database in Cambodia and Timor-Leste is developed and established within designated institutions

2.2 National SOPs for early warning systems are developed in Cambodia and Timor-Leste

To ensure that designated early warning agencies in each country disseminate early warning messages to all key stakeholders in a timely and

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27 High resolution useful for local level planning is planned using RIMES real time monitoring (3km grid) in Sihanoukville, Cambodia.
coordinated manner and appropriate action is taken by each agency to
effectively prepare and respond to events, national SOPs will be developed
clearly outlining the roles and responsibilities of key agencies and
stakeholders at national, sub-national and local levels. BMKG of Indonesia
will be engaged to share its expertise and experience on SOP development
for tsunamis.

Performance indicator:
• SOPs are developed for at-least 1 national agency, 1 local government
  and 1 vulnerable community

2.3 National training on SOPs is conducted in each project country

To ensure effectiveness of early warning messages, national training on SOPs
will be developed in each project country. The training will include national
agency, local government unit and a community, all from areas identified as
highly vulnerable under the report. Additional expertise from BMKG of
Indonesia will be shared in development and implementation of SOP for
tsunamis. The participants of the national training in both Cambodia and
Timor-Leste will be made aware of the uncertainties associated with the time,
location and other parameters associated with individual extreme weather
events.

Performance indicator:
• At-least 25 officials from national, sub-national and local levels are
  trained in using the SOP each in Cambodia and Timor-Leste

2.4 Annual, seasonal, monthly and real-time forecasts are disseminated to
relevant agencies in Cambodia and Timor-Leste for preparedness
planning, response and risk reduction supported by minimum standard
capacity to utilize the forecast and early warning

Reliable and timely forecasts as per agreed timescale and resolution will be
provided to each country to ensure that the forecasts and early warning
messages are received and acted upon by relevant stakeholders at national,
sub-national and local levels. The project will ensure that the minimum
standard capacity exist in both Cambodia and Timor-Leste to interpret and
utilize the forecasts and act upon them as per SOPs.

Performance indicator:
• Provision of seasonal climate outlook, monthly and real-time forecasts to
each project country.
• Secondment of 2 staff each from Cambodia and Timor-Leste to RIMES for
  2 months to receive technical training
• Provision of basic equipment to relevant agencies in Cambodia and
  Timor-Leste to develop institutional capacities
2.5 Regional review meeting conducted to assess the delivery and utilization of weather forecast by project countries

One regional review workshop will be organized jointly by UNDP and RIMES in the last quarter of the project to review the regional, national and sub-national functions and to identify what has worked well and where the gaps for further improvement are in the entire chain from issuance of early warning to receiving by early warning messages at the local levels in each project country. Experiences and lessons learned from the recent tsunami disaster in Mentawai, Indonesia on functioning of tsunami early warning system will be shared with the participants.

**Performance indicator:**
- Regional review meeting with at-least 10 participants from each project country is conducted to assess the functioning of the system for receiving and utilization of weather forecasts and early warning messages and preparedness and response capacity of stakeholders at national, sub-national and community levels.

**Capacities developed**
The project will develop capacities at different levels to ensure the monitoring, collection of weather information in processed in a systematic manner and timely forecast is provided to designated national agencies and utilized to support preparedness, response and risk reduction at community levels.

At regional level, the project will develop the following capacities at RIMES enabling them to:
- Develop and obtain official approval of regional SOP and conduct of regional SOP training to ensure adherence to SOP by designated national agencies
- Organization of training on sharing and utilization of reliable and timely weather forecasts

At national level, each project country will have the following capacities:
- Official adoption of SOP for the designated national agency for early warning systems
- Trained staff in implementing their roles within the SOP and updating them as and when needed

At sub-national level, the project will develop the following capacities:
- SOP development capacity at local government unit to support preparedness, response and risk reduction
- SOP development capacity at community level supported by local NGO and/or Red Cross

The project will ensure that the capacities developed under the project are institutionalized to ensure sustainability.

At regional level, RIMES will use the capacity to continue with its mandated role of generating forecasts and issuing early warning messages to its member countries.
At national level, the designated national focal agencies will utilize the capacity to continue to perform their mandated roles of processing weather forecasts and disseminating relevant early warning messages to key stakeholders as per agreed SOP.

At sub-national level, the identified local government unit will utilize the early warning message as per agreed SOP and disseminate relevant early warning messages to communities likely to be affected. Selected communities will use their capacities to organize themselves to respond to potential extreme weather events.

G. Organizational capacity

UNDP, through the Bureau for Crisis Prevention and Recovery (BCPR) has been engaged in developing capacities of countries in Asian region to support preparedness, response, mitigation, EWS, recovery and DRR. UNDP undertakes a holistic view of risk and develops and implements programmes at global, regional and national levels. In addition, UNDP supports building national and local capacities to effectively and efficiently respond to natural disasters.

Most recently, after the 2004 tsunami disaster, BCPR/UNDP developed and implemented a Regional Programme for Building Capacity for Sustainable Recovery and Risk Reduction for the Tsunami Affected Countries during November 2005 – December 2008. The Programme working closely with UNDP Country Offices and stakeholders in the Maldives, Sri Lanka, India, Thailand and Indonesia focused on developing national and local capacities for: 1) Building risk knowledge; 2) Enhancing the end-to-end Early Warning System; and 3) Capacitating national institutions in Disaster Risk Reduction.

Building on the achievements of the Regional Programme and working in line the mandate of UNDP Asia-Pacific Regional Centre (APRC) in Bangkok to provide technical support and services to UNDP Country Offices in the Asian region, the scope of the Regional Programme was increased in 2009 to include conflict and gender issues to look at risk in a more holistic manner and implement activities to address the underlying issues in a more integrated and holistic way. The Regional programme now provides technical support and services to UNDP Country Offices in the entire Asian region.

BCPR/UNDP through a team of experts at the UNDP APRC in Bangkok provides emergency assistance by mobilizing expertise and resources to respond to natural disasters to all countries in the region. The Team also works with UNDP’s Environment and Energy Team within APRC who provides policy and technical advice on climate change adaptation including support to the preparation of the Initial National Communication and NAPA processes. In addition, all high-risk countries in the region have programmes aimed at developing capacities of national and local institutions to reduce disaster risks.

A brief overview of UNDP’s on-going work in the two proposed countries viz. Cambodia and Timor-Leste is described below:
CAMBODIA:

UNDP Cambodia has been working with the Kingdom of Cambodia to support the government to meet the Cambodia Millennium Development Goals through the United Nations Development Assistance Framework (UNDAF) and Country Programme Action Plan (CPAP). The focus of UNDP assistance has been on building capacity of Cambodian institutions, which have suffered from several decades of isolation and conflict.

Cambodia is prone to annual river flooding during the monsoon period. The flooding in the basin of Mekong river and Tonle Sap lake affects large populations. In addition to annual flooding, Cambodia is also prone to tropical storms and drought. These natural disasters lead to reductions in the pace of sustained economic development of the country. Cambodia is considered highly vulnerable to climate change due to its high levels of poverty and lack of infrastructure, but by increasing society’s capacity to respond and adapt well, the impacts of climate change can be minimised. However, climate change is not only about impacts and threats - how Cambodia responds to climate change also presents opportunities that lead to healthy economic and social development. Ensuring Cambodia’s responses are timely and effective poses a major development challenge for the government and its development partners. To address this challenge, UNDP’s climate change work in Cambodia focuses on strengthening the capacity of government to respond to climate change, creating opportunities for knowledge sharing and building partnerships, as well as supporting research into the impacts of climate change on the country’s economic and human development. UNDP signed a project document in 2010 establishing Cambodia Climate Change Alliance (CCCA), a multi-donor initiative. CCCA is a comprehensive and innovative approach to address climate change and disaster risk reduction in Cambodia. It aims at developing and strengthening institutional capacities by preparing for and mitigating climate change risks and by helping vulnerable communities enhance their resilience to climate change and other natural hazards. On DRR matter, recognizing the need for building capacity of NCDM, UNDP supported a three-year project designed to assist the government in building an integrated institutional framework for disaster management encompassing disaster preparedness and mitigation, emergency response, and post-disaster rehabilitation. Since then however, there were no UNDP supported national projects on DRR, but selected national government staffs of NCDM attended UNDP’s regional training events on DRR. This proposed project was conceived in consultation with a senior NCDM staff recently.

TIMOR-LESTE:

UNDP, in collaboration with the international community, has been supporting national efforts in crisis management and recovery since 2002. In the area of DRM, the UNDP’s support has been focused on the development of basic Standard Operating Procedures and tools for the National Disaster Operations Centre (NDOC in Dili) and the two new District Disaster Operations Centres under the Ministry of Social Solidarity, whose mandate includes Disaster Risk Management coordination. Other support has included damage observation and risk assessment procedures and ICT tools to support these Centres.

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28 Ross SOVANN, Deputy Secretary General and Head of National Emergency Coordination Centre (NECC), National Committee for Disaster Management
In the area of climate change adaptation, UNDP supports the process for developing the NAPA with expected completion in the last quarter of 2010. The NAPA would evaluate climate change risks and identify prioritized adaptation activities across a range of sector working groups, including the National Disaster Management Directorate. The sectoral working groups address food security and agriculture, water quality and accessibility, forests coastal ecosystems and biodiversity, human health, human settlement and infrastructure, and natural and human-induced disasters.

H. Contribution to regional coordination and/or cooperation towards the establishment and functioning of a regional early warning system for tsunamis and other hazards in the Indian Ocean and Southeast Asia region

At regional level, the project will directly work with RIMES which has been established by the 26 member countries from Asia and Africa and is mandated by the member countries to:

- Facilitate establishment and maintenance of core regional observation and monitoring networks and ensure data availability for early warning purposes.
- Provide Regional Tsunami Watches within the framework of IOC/UNESCO
- Provide Research and Development support to National Meteorological and Hydrological services for providing localized hydro-meteorological risk information within the framework of the WMO
- Enhance capacities of national systems to respond to early warning information of different lead-time at national, sub-national, local and at risk community levels within each National Early Warning framework.

Given that RIMES is mandated by the governments in the region, the project will directly contribute to the common goal of providing reliable and timely weather information to the project countries and the project will ensure that the forecasts are utilized by the countries and are shared with key stakeholders in improving preparedness, response and risk reduction. The training materials developed under the project will remain with RIMES and be used for imparting training to other member countries in the future.

The project partners at regional level i.e. RIMES and other national project partners have been working together under existing regional cooperation and coordination mechanisms (AADMEIR and ICG mechanisms). These mechanisms are all intended to contribute towards the establishment and functioning of a regional early warning system for tsunamis and other hazards in the Indian Ocean and Southeast Asia region.

I. Knowledge Management

The regional programme will be active in knowledge networking by actively seeking opportunities to document programme practices and interventions such as in developing and conducting training activities, building and using risk knowledge, promoting end-to-end EWS, supporting efforts for public awareness and community-level vulnerability reduction, and their effective dissemination through the UNDP corporate knowledge networking efforts and other means.
This project will take a strong knowledge management approach, specifically in two areas:

- **Knowledge capture/generation**:
  
  a. Develop a training curriculum and regional SOP for early warning systems to strengthen regional capacities for improving collection and sharing of reliable forecasts to national agencies.
  
  b. Based on capacity needs and response strategies in the two project countries, develop national training curriculum (building on the regional curriculum) and national SOP for early warning systems to strengthen national capacities for improving collection and sharing of reliable forecasts to national agencies.
  
  c. Towards the end of the project cycle, lessons from both project countries will be documented.

- **Knowledge sharing and dissemination**:
  
  a. Through the conduct of regional and national level trainings, the project will ensure that the training curriculum are disseminated to relevant persons and agencies that are able to apply them to their work in collecting and sharing reliable forecasts.
  
  b. From time-to-time, relevant findings/ update/ analysis/ results from the project will be widely shared within the region through DRM-Asia Community of Practice\(^{29}\) and CPRP-Net\(^{30}\).
  
  c. The end of project cycle regional review workshop will also provide the opportunity for lessons across both countries to be shared, and to allow for cross-country learning.

**J. Sustainability**

At regional level, RIMES is already mandated by the member states to perform regional functions related with early warning and national capacity development, hence the products and services provided by RIMES fall under its mandate and will be sustained by RIMES through its own budget and programmes.

The national agencies in Cambodia and Timor-Leste are designated focal organizations for both RIMES and the implementation of AADMER work plan. Therefore, the activities under the project will directly help them fulfil their mandated roles and functions and sustainability will be achieved through the continuation of technical support from RIMES and budgetary support from donors and national budgets.

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\(^{29}\) UNDP APRC maintains DRM-Asia which includes about 250 members from key organizations (including UN Agencies and non-UN agencies) involved in disaster risk reduction in the Asian region.

\(^{30}\) CPRP-net is UNDP’s global platform to exchange knowledge and experience around crisis prevention and recovery issues and it has a large community across the world including practitioners from UNDP and other UN agencies.
K. Gender

UNDP/BCPR has a strong commitment to gender equality and women’s empowerment in crisis settings, which includes promoting gender equality in DRR by supporting women and men to build back better, incorporating women’s unique needs, preventing increased vulnerability of girls and women, and by promoting them as leaders in recovery processes.

The project recognizes gender as an organizing principle in all societies and in all settings, as it shapes the capacities and resources of individuals to minimize harm, adapt to hazards and respond to disasters. In this way, women and men experience different risk factors from disasters. Evidence from past disasters reveals that gender intersects with other socio-economic factors making low-income women and those who are marginalized due to marital status, physical ability, age and social stigma, especially vulnerable. On the other hand, women are often well positioned to manage risk due to their roles as both users and managers of environmental resources, as economic providers, and as caregivers and community workers.\(^{31}\)

The set of activities proposed in this project will feature these aspects in its analysis, stakeholder consultations and activities. It will identify and use gender-differentiated information, such that the risk reduction strategies are targeted at the most vulnerable groups and are effectively implemented through the roles of both women and men.

L. How will the project address potentially adverse impacts?

The project has taken into account the following risks, and prepared appropriate contingency measures into its planning, such that potential adverse impacts to the implementation of this project could be minimized.

**Potential Risk 1:** Weak support from the regional watch providers i.e. RIMES and ASEAN under Agreement on Disaster management and Emergency Response.

**Contingency Measure:** As both of these are regional bodies composed of numerous Member States, ownership is not vested on single entities or individual. Thus, the risk of weak support from these organizations is negligible. However, UNDP shall ensure that support for this project is unanimous among Members through a proper communication and visibility strategy, attendance to all relevant ASEAN and RIMES functions (ACDM Meetings, RIMES Council Meetings, etc).

**Potential Risk 2:** Lack of/not the right level and type of participation from the stakeholders (both government and non-government) and communities in activities of the project.

**Contingency Measure:** The project will engage UNDP Country Offices in both countries to ensure the right kind of participation from relevant persons and agencies. The UNDP COs will also be part of facilitating the participation of the relevant persons for the consultation, monitoring and reporting of each project activity.

\(^{31}\) Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters
Potential Risk 3: Data on hazards, exposure and vulnerability is unavailable in the project countries and/or is not shared with the project.

Contingency measure: If local data is unavailable, the project will use regional and global data sets as proxy.

M. Partnerships

The project will build on existing and foster new partnerships at the regional, national and local level in order to successfully implement the project activities. Some of these partners are mentioned below:

Regional Partners:

➢ The Regional Integrated Multi-Hazard Early Warning System (RIMES):

In 2009, RIMES\(^{32}\) became an official body through an International Agreement among 26 countries in the Afro-Asian Region, and in January 2010, an independent and fully functional organization. Under this project RIMES will be one of the most important partners in the “upstream” EWS.\(^{33}\) In accordance with its objectives as outlined in its Charter/International Agreement, (registered with the Secretariat of the United Nations on 14 September 2009), RIMES will be part of this project in the following role:

- Facilitate establishment and maintenance of core regional observation and monitoring networks and ensure data availability for early warning purposes.
- Provide support to the development of the regional SOP and training curriculum, and conduct of the training to the two project countries.
- Support the capacities of national systems to respond to early warning information of different lead-time at national, sub-national, local and at risk community levels within each National Early Warning framework.

RIMES will lead the project activities related with weather forecasting, regional training, regional SOP development and capacity development of countries.

\(^{32}\) Annex 5 and 6: Agreement on Cooperation on Regional Integrated Multi-hazard Early Warning System for AFRO-ASIAN Region - APR 2009 and Certificate of Registration No S8230 - Agreement on Cooperation on Regional Integrated Multi-hazard Early Warning System for AFRO-ASIAN Region - April 2009

\(^{33}\) Upstream- roughly means regional monitoring, detection, prediction and sharing of information to the National Hydro-meteorological agencies. Downstream systems include formulation of national early warning messages, dissemination, communication and immediate emergency response.
The ASEAN Committee for Disaster Management (ACDM):

In December 2009, the 10 Member States comprising the ACDM, ratified recently a landmark agreement called the ASEAN Agreement on Disaster Management and Emergency Response (AADMER)\(^34\). The work plan for AADMER describes its goals, which are relevant to the objectives of this project. To this end, its specific role in this project will include:

- Foster closer partnerships and more collaborative initiatives on disaster preparedness and response, DRR and recovery and rehabilitation with partner organizations, international organizations, civil society organizations, academia, military, and UN specialized agencies.
- Support community based approaches in disaster management and enhance disaster consciousness of the people in ASEAN to instill a culture of safety and resilience.
- Facilitate policy mechanisms to facilitate a Regional Early Warning System and the timely sharing of alerts, notifications and expected impact assessments.

National Partners:

This will include national warning agencies, national and provincial disaster management organizations, the media, and key women's organizations in participating countries.

National and local media (TV, radio and amateur radio associations), women's organizations and unions, civil society groups, local government officials, and other emergency response organizations involved in communicating and disseminating relevant information will also be partners and stakeholders at different stages of the project.

In addition, UNDP Country Offices in project countries will be consulted and involved throughout the implementation of the project. This will not only avoid duplication of efforts but also develop synergies with ongoing and planned projects and activities.

Local Partners:

This will include local government representatives from both countries who will be part of the regional and national SOP development and training.

N. Expected counterpart contributions (in-kind and cash)

Counterpart contributions in each activity are specified in the budget and line items applicable. These include partial salary costs, regional events, and mission costs.

\(^{34}\) See Annex 7
O. Monitoring, evaluation and audit

UNDP APRC will prepare bi-annual progress reports and convey these reports to ESCAP by 30 November (covering the period to 31 October) and 31 May (covering the period to 30 April) each year. UNDP APRC will also prepare and convey to ESCAP a final project report within two months of the end date of this Letter of Agreement. The reports will be prepared according to a standard template, which ESCAP will provide to UNDP APRC, and should contain a substantive section and a statement of financial expenditures following the breakdown in the Activity Work Plan.

UNDP will arrange an independent evaluation of the project by the end date of this Letter of Agreement and convey this evaluation report to ESCAP within one month of its completion. Based on the Results Frameworks under Section F above, UNDP will be able to clearly show the achievements of results using a baseline appropriate to the project activities.

In addition to the above, UNDP will routinely plan, monitor and evaluate the project using its programming policies and procedures laid down for results-based management. As this project falls under the CPR Practice, it will get added to existing CPR monitoring process. An Annual Report will be prepared by the Project Manager which, at the minimum, will include Atlas standard format for the QPR covering the whole year with updated information on each element of the QPR as well as a summary of results against pre-defined annual targets at the output level.

The Annual Review Report will also include potential opportunities and demand from countries and their articulation to ensure that the project activities are meeting the needs of the countries and where possible the activities will be tuned to respond to meet the critical needs in the region.

P. First Payment

An initial payment of US$ 157,920 will be provided by ESCAP upon signature of the Agreement by both to start the activities 1.1, 1.2, 2.1 and 2.4 as indicated in the attached Activity Work Plan.

Subsequent payments will be provided upon approval by ESCAP of a written request for payment from UNDP RCB, together with the relevant progress reports containing both substantive and financial sections, and will take into account the progress of the project and projected liquidity needs, as contained in the Activity Work Plan (Section Q).

Q. Activity Work Plan