Grant Application Form

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

A. Overview

1	ORGANIZATION SUBMITTING PROPOSAL	ESCAP/WMO Typhoon Committee Secretariat (TCS)
2	FOCAL POINT AT ORGANIZATION AND RELEVANT CONTACT INFORMATION	**Mr. YU Jixin** Secretary of Typhoon Committee Avenida de 5 de Outubro, Coloane-Macau, China Tel: +853 88010531; Fax:+853 8801 0530 Email: yujx@typhooncommittee.org info@typhooncommittee.org
3	PROJECT TITLE	SSOP Phase II: Implementation of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System
4	BENEFICIARY COUNTRIES	16 Countries in TC and PTC region: Bangladesh; Cambodia; China; India; Islamic Republic of Iran; Lao PDR; Malaysia; Maldives; Myanmar; Oman, Pakistan; Philippines; Sri Lanka; Thailand, Timor-Leste and Viet Nam.
5	TARGET GROUP(S)	• National Meteorological and Hydrological Services (NMHSs) / National Tsunami Warning Centers (NTWCs) • National Disaster Management Offices (NDMOs) • Government sectoral agencies
6	TIME FRAME	18 months: expected period From 1 May 2016 to 31 October 2017
7	TOTAL BUDGET (US$) AND BREAKDOWN OF FUNDING SOURCES	ESCAP Trust Fund: US$498,000

Executive Summary

As it is known that, the most nations in the regions of ESCAP/WMO Typhoon Committee (TC) and WMO/ESCAP Panel of Tropical Cyclones (PTC) are less developed countries, and are the most disaster prone regions in the world due to impacts of many types of natural disasters. Also the most countries have shortage on end-to-end disaster early warning system (EWS) which should be a fundamental component of nations' disaster risk reduction strategies, enabling governments from the national to the local levels, as well as communities, to take appropriate actions to reduce the loss of lives and livelihoods in anticipation of a disaster.

To assistant the countries in TC and PTC regions to identify the specific gaps and needs for making the existing EWSs fully operational for the use in multi-hazards context, ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asia Countries funded TC in 2012, in cooperation with PTC, for conducting the project on Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System.

Under the great support and guidance from ESCAP and WMO, and the close cooperation from a series of international/regional organizations, beneficiary countries and targets groups, the project of SSOP conducted successfully the proposed activities and achieved the expected outputs including compiling the Manual/Handbook of Synergized Standard Operating Procedures for Coastal Multi-Hazards Early Warning System.

The successful SSOP-I project is regarded as an excellent example on the cooperation on promoting the capacity building of multi-hazards early warning among two regional bodies. However, due to the limitation of budget and time, TC and PTC could not extent the results and achievements of SSOP-I project to all their Members deeply and widely.

Therefore, it was suggested very strongly at the 3rd joint Session of TC and PTC (TC 47th Session and PTC 42nd Session) to request the Members, after the Manual is complete, to consider ways to make the best use of it, and to develop a proposal for SSOP Phase II, based on the successful completion SSOP-I project, and submit to ESCAP for funding consideration.

The proposal of SSOP Phase II for Implementation of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System will be mainly focused on the training on how to establish an appropriate standard operating procedure (SOP) based on the published SSOP Manual and on promoting the TC and PTC Members' capacity building on Multi-hazards Risk early warning based on existing technical achievement for National Meteorological and Hydrological Services (NMHSs) in the 16 beneficiary countries (including Bangladesh; Cambodia; China; India; Islamic Republic of Iran; Lao PDR; Malaysia; Maldives; Myanmar; Oman, Pakistan; Philippines; Sri Lanka; Thailand, Timor-Leste and Viet Nam) beneficiary countries, and also on enhancement of mutual support between TC and PTC through the continuation of the project.

SSOP-II also will consider providing resources and opportunities to involve social scientists, DRR experts and warning experts from National Tsunami Warning Centres (NTWCs), National Disaster Management Offices (NDMOs), and Government sectoral agencies including national level, local level and community level to improve the training and capacity building on social science aspects of EWS, such as risk and impact assessment, warning communication strategies, partnership/stakeholder engagement, society response capability, etc..

SSOP-II will focus on training the "mechanism" of preparing and implementing synergized standard operating procedures for coastal multi-hazards early warning system in beneficiary countries with the goal of promoting the capacity on coastal community resilience to coastal multi-hazards through extending the achievement of SSOP-I.

B. Needs Assessment

It has been pointed out in Early Warning Systems in the Indian Ocean and Southeast Asia - 2011 Report on Regional Unmet Needs prepared by ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asia Countries that the ESCAP/WMO Typhoon Committee (TC) and WMO/ESCAP Panel on Tropical Cyclones (PTC) regions are the most disaster prone regions in the world due to impacts of many types of natural disasters. Also the report indicated that, an end-to-end disaster early warning system (EWS) should be a fundamental component of nations' disaster risk reduction strategies, enabling governments from the national to the local levels, as well as communities, to take appropriate actions to reduce the loss of lives and livelihoods in anticipation of a disaster.

ESCAP approved the project on Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System submitted by the ESCAP/WMO TC and the WMO/ESCAP PTC in August 2012 to enhance:

1. Cooperation between TC and PTC in collaboration with other agencies to create synergies to support the EWS among TC and PTC Members for different types of coastal hazards. These synergies can be achieved through a multi-hazard and multi-agency approach; and

2. TC and PTC collaboration as a part of ESCAP strategy to deepen regional cooperation mechanism and strengthen the capacity of high risk TC and PTC Members to meet the challenges of hazardous weather. In this regard, the SSOP project was an innovative idea that ESCAP funded utilizing the provisions of the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in the Indian Ocean and South East Asia.

The goal of the project of SSOP-I was to promote community resilience, including vulnerable and special needs individuals, to coastal hazards through effective, synergized SOPs for multi-hazards EWS. The goal was to be met through the preparation of this manual and the development of a cooperative mechanism between TC and PTC on coastal multi-hazards EWS.

It was envisioned that improved SSOPs could further enhance ongoing efforts of the TC and PTC Members to support sustainable, socio-economic development of the high economic growth areas of coastal zones. By building upon existing SSOPs and information of TC and PTC Members for coastal hazards, especially those relevant to end-to-end EWSs and community-based disaster risk management, improved SSOPs could be developed. The connections between aspects of SSOPs and socio-economic implications are important to provide policy guidance to those involved in various aspects related to multi-hazard EWS.

The project was mainly focused on the meteorological and hydrological services of the TC and PTC regions. However, one agency or organization cannot develop all of the needed SSOPs for an effective multi-hazards EWS in isolation. Coordination, collaboration, support, and assistance are needed not only horizontally with other agencies at the same level of government, but also vertically to involve all levels of government, citizens, and media. An effective EWS must provide the required information to the people at risk so they in turn can perform the correct actions to save their lives and property regardless of whether they live in a large city or a rural, coastal location. Thus, the intended target readers or users of the manual are those involved in the enhancement of EWS services through a multi-hazard, multi-agency SSOP approach.

To fully use the SSOP Manual (Annex 1 and 2), certain definitions are needed for a common understanding of its content. These are:

Synergy

- To create SOPs through a cooperative development, sharing, review, analysis, and documentation process in a multi-hazard and multi-agency way so the whole is greater than the sum of its parts.
- Through this process, the overall EWS will be improved and the overall efficiency increased.

Standard Operating Procedures

- To identify, coordinate, integrate and document, in a logical order or sequence, a standard set of steps to be followed to ensure tasks are performed in the same way and to the same standard each time.
- Since these are done before a hazardous event occurs, the standard steps can be created in the most efficient and effective method to prepare, review, and release warnings in coordination with other agencies.

Multi-Hazards

- To identify and incorporate similarities of hazards into SSOPs.
- Hazards are different, occur on different time scales, and effect different geographical areas, but some elements of EWS for these hazards are similar. For example, this may include:
  - ✓ Processes involved in monitoring and observing;
  - ✓ Stages of alerts and warnings, for example, green, blue, yellow, red levels or other standard colours or levels;
  - ✓ Coordination among agencies; and
  - ✓ Processes of issuing and disseminating warnings.
- This approach can make a EWS and supporting SSOPs more sustainable because they would be used more frequently than stand-alone, single hazard methods. Single hazard SSOPs, if infrequently used, can produce operational, coordination, and communications problems when activated.

Integration

- To coordinate and integrate different agencies' inter-related roles and responsibilities into each other's SOPs to avoid conflicting information.
- This can be accomplished through a systematic review of the roles and responsibilities assigned to all agencies within a country involved in the EWS.
- This includes agencies at each level of government and also among different levels of government (national, sub-national, and local communities) involved in the warning chain.

Sub-National

- Levels between the national level and the community level. This would include provinces, territories, states, regions, divisions, governorates, prefectures, districts, and planning areas.
- Thus it will be used to describe all forms of government between the national level and the community level.

Time-line Concept

- Tasks listed in chronological order of how they are to be performed.

In a EWS, several levels of documentation usually exist and should be strongly considered for incorporation.

1. National, high-level policy document(s) which provides a comprehensive and integrated management approach encompassing all stages of disaster management. These documents

define the roles and responsibilities of citizens, public representatives, ministries, departments, agencies, private sector, insurance sector, corporate sector, and non-government organizations (these will differ for different PTC and TC Members). They often specify at a high level the "who" (responsible agency) and "what" (roles and responsibilities) and many times the "when" and "why" of agencies' roles and responsibilities in the EWS.

2. Memorandums of Understanding (MOUs). MOUs helps to ensure different agencies and organizations understand each other's roles and responsibilities and how they can perform in an integrated manner as partners. MOUs can either be bilateral (between two agencies) or multilateral (among multiple agencies). An MOU identifies the parties involved; defines the subject matter and objectives; and establishes agreed upon roles and responsibilities.

3. SSOPs. There are effectively two levels of SSOPs. The "higher level" SSOPs are the ones that specify the "who", "what", "when", "where", "why", and "how" tasks or activities associated with natural disasters to support the national level policy documents and are the main focus of this Manual. Modules 6 and 14 focus on this level of SSOPs and provide synergy ideas of what may be needed. The lower level procedures, sometimes referred to as operational directives or checklists, specify the more detailed "how to" and are internal to a particular workplace or agency. These are not shared or synergized because of their specific, internal nature**.**

A large amount of research and operational experiences by countries worldwide have shown the benefits and purposes of SSOPs in a EWS to save lives and protect property. Some of the vital benefits SSOPs can provide in a EWS are to:

- Ensure tasks are preformed within the country's documented EWS;
- Describe and document EWS roles and responsibilities;
- Incorporate concepts of synergy through multi-hazards, multi-agencies, and integration methods;
- Consider vulnerable and special needs individuals;
- Ensure tasks are integrated with other agencies and with all levels of government, especially local communities;
- Follow an identified process for formulation, review, testing, and approval before commissioning and implementation;
- Include a regular, robust, sustainable process for reviewing and updating after implementation; and
- Incorporate training and education programs at all levels for maximum effectiveness.
- Removes red-tape, border/territorial issues and allows free and open dialogue as well as collaborative partnerships between responsible RSMCs and all regional Members.
- Pooling of resources, thus ensuring cost-effective exercise to governments

In addition to these benefits, well written SSOPs can serve valuable purposes, such as to:

- Ensure tasks are performed in the same way and to the same standard each time;
- Provide specific, approved direction;
- Produce predictable, reproducible results;
- Maintain high quality and consistent service in hazard situations;

- Develop and implement the most efficient and effective method to perform tasks before an emergency occurs;
- Improve cooperation and integration of different tasks among agencies involved in EWS; and
- Reduce training time.

The Manual of SSOPs consists of 15 Modules divided into six Parts to highlight the linkage between ongoing efforts with existing SSOPs and the need to improve them into SSOPs for a multi-hazards early warning system of coastal areas. The six parts are: Technical Background; Strategic Framework of SSOPs; Formalization of SSOPs; Towards an Effective and Sustainable Process of Improvement; National Meteorological and Hydrological Services (NMHSs) Activities in EWS; and Operationalizing Duty SSOPs. The templates for creating SSOPs and checklists are found useful for creating new SSOPs as well as evaluating existing ones. The manual also includes critical guiding principles for contextual use and application, and strongly recommends the consideration of national policies and frameworks, including existing MoUs and arrangements. Such guidance makes the nature of the manual inclusive as well as flexible to adopt the different needs of users. The Manual on SSOPs was tested in the hands of training missions of consultants to 3 PTC (Bangladesh, Maldives, Myanmar) and 3 TC countries (Cambodia, Lao PDR and the Philippines).

The evaluation report of SSOP-I project (Annex 3), which was submitted by independent evaluator, assessed the key outcomes, outputs and lessons learnt from the perspective of relevance, effectiveness, efficiency and sustainability. The report pointed out that, in order to fully achieve both outcomes of SSOP in the 13 beneficiary countries, including Bangladesh, Cambodia, China, India, Lao PDR, Malaysia, Maldives, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam, a SSOP Phase II is advisable.

The 3rd Joint Session of TC and PTC (42nd Session of PTC and 47th Session of TC), which was held in UN Conference Centre of ESCAP from 09 to 13 February 2015, took note of the progress and achievement of the project and requested the Members of TC and PTC to consider ways to make the best use of the Manual. In order to enhance the cooperation mechanism of two regional bodies and promote the capacity of Members on costal multi-hazards early warning, the Session also decided to pursue the following joint activities (Annex 4):

- To develop a mechanism for holding Joint PTC/TC Sessions more frequently and regularly.
- To develop a proposal for SSOP Phase II, based on the successful completion SSOP project, and submit to ESCAP for funding consideration.
- To request ESCAP and WMO to provide funding and expertise support for extension of TC on-going project of real-time Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) to PTC Members, starting from organizing a joint workshop on implementation of OSUFFIM for selected pilot cities in TC and PTC Members in 2015
- To facilitate PTC and TC Members to participate in each other's annual sessions and workshops/seminars, and to encourage PTC Members to seek funding through ESCAP or WMO to attend training courses and workshops offered by TC Members.
- To coordinate and undertake joint expert mission in assessing the damage caused by tropical cyclones and related disasters with the support from ESCAP.
- To invite two to three tropical cyclone forecasters from PTC Members to the RSMC Tokyo attachment training every year with the support of ESCAP, and to request ESCAP to make financial and logistic arrangements for the PTC participants in cooperation with RSMC Tokyo.

- To invite one or two tropical cyclone forecasters or researchers from PTC Members to the TRCG Research Fellowship Scheme of KMA every year if possible with the support of WMO/ESCAP or other donors. To request WMO/ESCAP to make financial and logistic arrangements for the PTC participants in cooperation with KMA.
- To invite TC members to join the initiatives of RSMC New Delhi on Forecast Demonstration Project on land falling cyclones over Bay of Bengal, Severe Weather Forecast Demonstration Project and coastal inundation modelling with the involvement of PTC member Countries.
- To invite TC members to participate in the annual bi-weekly training and short term weekly/ bi-weekly training programmes on specific themes such as Satellite Meteorology, Radar Meteorology, and NWP currently conducted by RSMC New Delhi/IMD for the benefit of PTC countries. While RSMC New Delhi provides only training support, it requests extra-budgetary resources to support air fare and DSA for the participants from PTC and TC member Countries.
- To strengthen data sharing between TC and PTC Members including satellites data, noting that by the end of 2016 EUMETSAT will terminate the operations of Meteosat-7.

C. Problem Analysis

The project activities of SSOP-I have alerted the TC and PTC beneficiary countries on the advantages in adopting a standardized way of drafting their SSOPs. However, some gaps were pointed out. One of the survey results indicated that though implementation arrangements were effective, mobilizing support and involvement of multiple actors and agencies at regional and national levels for planning purposes were challenging and took time. Similarly, the trainings conducted under the project needed more practical examples from disaster events, and that the incorporation of mock drills could have enhanced the overall value of the training package.

The project of SSOP-I contributed to warning knowledge and practices by discussing the concept of SSOPs. This is not yet adopted in many countries. Activities have contributed to better knowledge on how to save time for making decisions in case of a hydro-meteorological disaster. If utilized properly, the Manual of SSOPs can further contribute to enhancing the capacity of relevant government departments that deal with monitoring and forecasting of hydro-meteorological hazards.

For multi-agency SSOPs to be comprehensive and fully effective, the engagement and commitment of NMHSs, NDMOs, media, and key government agencies is necessary. However, during some of the missions during SSOP-I, it was found that the NMHSs, disaster management offices, and the media did not coordinate well and seldom met jointly. At this state, the project of SSOP-I has partly achieved its expected outcomes as more training and development needs to be done. On a positive note, a number of countries involved in the project of SSOP-I have made significant progress in developing SSOPS (both internally and externally), especially during the final phase of the Project.

The TC and the PTC budgets are very limited and designed for supporting their regular activities, such as workshops, training courses, meetings, etc. For this reason, support from other organizations (e.g., ESCAP, WMO) for implementing this cooperation mechanism will be necessary. The project of SSOP generated a great interest in most of the beneficiary counties and alerted the respective NMHSs on the necessity of having well structured SSOPs. As this project involved a great number of countries, the best way to guarantee the exit/ sustainability is ESCAP, PTC and TC Members to support the implementation of the Cooperative Mechanism and prepare the proposed project of SSOP-II.

D. Target Group

The project of SSOP-II aims for the above-mentioned needs and gaps to conduct a series of training courses and workshops. The trainees will be oriented towards National Meteorological and Hydrological Services (NMHSs), National Tsunami Warning Centres (NTWCs), National Disaster Management Offices (NDMOs) and Government sectoral agencies including social scientists, decision makers, warning experts, DRR experts, warning information users and community managers.

The capacity building on coastal multi-hazard EWS is targeted for the following 15 countries in TC and PTC regions: Bangladesh; Cambodia; China; DPR Korea; India; Lao PDR; Malaysia; Maldives; Myanmar; Oman, Pakistan; Philippines; Sri Lanka; Thailand and Viet Nam.

E. Project Strategy

EWS should contain the following three key components:

- **Issuance of warnings** -- adequate and reliable observational data in real time, with timely updated forecasts and warnings based on sound scientific analyses (often, for weather-related disasters in particular, the responsibility rests with the national hydro-meteorological services);
- **Interpretation of warnings** -- good understanding of the risk and vulnerability over a certain target region under different natural disaster scenarios (requiring social scientists DRR experts, warning experts, warning information users in specialized fields with substantial LOCAL knowledge, e.g. hydrological assessment for flood forecasting given the varying intensity and distribution of rainfall over a river basin or catchment area); and
- **Communication of warnings** -- efficient information flow, an operation increasingly automated through the use of computers and information technology, between forecasters and key decision-makers, among stakeholders and operational units, as well as to user communities at risk (in most cases coordinated by a body comprising government departments, emergency response agencies and NGOs).

The Manual on SSOPs was prepared with the purpose of promoting community resilience to coastal multi-hazards. The aim was to improve policy and institutional arrangements at national, district, and community levels through integrated, effective standard operating procedures for multi-hazards EWS. The manual is extremely useful in improving existing SSOPs and in creating new ones as it provides detailed guidance with relevant examples and references.

In order to ensure effectiveness and sustainability of the process of improvement, it is necessary to ensure commitment of top leadership and participation of all key stakeholders using strategic planning and management concepts. The key factors of strategic planning and management would include the following:

- Complete commitment of top leadership to integrating EWS into the socio-economic development and resilience;
- Translation of the complete commitment into a shared vision for all key stakeholders;
- Establishment of performance indicators to ensure effective implementation and an appropriate system of accountability; and
- Development of an effective program of support for the implementation.

SSOP-II is the continuation of the project of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System which has been close in May 2015. The purpose of SSOP-II is to extend the achievements among 16 beneficiary countries (including Bangladesh; Cambodia; China; India; Islamic Republic of Iran; Lao PDR; Malaysia; Maldives; Myanmar; Oman, Pakistan; Philippines; Sri Lanka; Thailand, Timor-Leste and Viet Nam), and transit the existing technical methodologies on costal multi-hazards early warning into productive forces so that to promote the capacity on disaster risk reduction.

The activities of SSOP-II will be mainly focused on the training the mechanism on how to establish and prepare an appropriate standard operating procedure (SOP) based on the published SSOP Manual and on promoting the TC and PTC Members' capacity building on Multi-hazards Risk early waning based on existing technical achievement for National Meteorological and Hydrological Services (NMHSs) in the beneficiary countries, and also on enhancement of mutual support between TC and PTC through the continuation of the project.

SSOP-II also will consider providing resources and opportunities to involve social scientists and warning experts from National Tsunami Warning Centres (NTWCs), National Disaster Management Offices (NDMOs), and Government sectoral agencies including national level, local level and community level to improve the training and capacity building on social science aspects of EWS, such as risk and impact assessment, warning communication strategies, partnership/stakeholder engagement, society response capability, etc.

F. Results Framework

- **Goal (positive impact)**

  The goal of the Project of SSOP-II is to promote the capacity on coastal community resilience to coastal multi-hazards through extending the achievement of SSOP-I in TC and PTC regions by conducting a series of training courses and workshops on the "mechanics" of preparing and implementing synergized standard operating procedures for coastal multi-hazards early warning system in beneficiary countries, aiming at the problems and gaps mentioned in the PART C.

- **Outcomes**

  Expected Outcome 1: Promotion of society response capacity building in TC and PTC regions focusing on the "mechanics" of preparing and implementing SSOPs

  Activity 1: *Conducting the training courses/workshops on mechanism of establishing and preparing SSOP for coastal multi-hazards EWS, focusing on social scientists, DRR experts and warning experts from NTWCs, NDMOs, and Government sectoral agencies to improve capacity building on social science aspects of EWS, such as risk and impact assessment, warning communication strategies, partnership/stakeholder engagement, society response capability, etc.*

  1.1 Conducting Training Course on establishment of SSOP for coastal multi-hazards EWS mainly for social scientists with participation of DRR experts and warning experts from 16 beneficiary Countries of TC and PTC (3days in RTC, Nanjing)

  Indicator: about 50 participants joining the training course

  1.2 Conducting Training Course/workshop on performance of SSOP of coastal multi-hazards EWS mainly for warning experts with participation of social scientists and DRR experts from 16 beneficiary Countries of TC and PTC (3 days in UNCC Conference Centre of ESCAP, BKK) (linked with TC 3rd TRCG Forum and 12th IWS in 2017)

  Indicator: about 50 participants joining the training course/workshop

  Expected Outcome 2: Promotion of capacity building on science and technology of early warning for severe weather in beneficiary Countries of TC and PTC

Activity 2: *Conducting training courses/workshops on radar/satellite information utilization for Tropical Cyclone EW (tentatively)*

2.1 Conducting Training Course on satellite and radar image interpretation and applications, including intensity assessment, structure analysis, high wind and rainstorm nowcasting, etc. (4 days in Japan)

Indicator: about 23 participants joining the training course

2.2 Conducting Training Course on storm surge/tsunami monitoring (3 days in Hong Kong, China)***Indicator:*** about 25 participants joining the training course

Expected Outcome 3: Promotion of capacity building on science and technology of early warning for urban flood risk EW in beneficiary Countries of TC and PTC

Activity 3: *Conducting training courses/workshops on real-time operational Urban Flood Forecasting and Inundation Mapping (OSUFFIM)*

3.1 Conducting Workshop on Innovative Technology for Urban Flood Risk EW (2 days in Bangkok, Thailand)

Indicator: about 35 hydrologists participating in the workshop

3.2 Conducting Training Course on Real-time Operational Urban Flood Forecasting and inundation Mapping (OSUFFIM) (3 days in SYS University, Guangzhou, China)

Indicator: about 15 hydrologists from selected pilot cities in TC and PTC joining in the training

- **Outputs**

Main output 1: Established pool of accredited and competent experts to administer the MHEWS, in appropriately resourced facilities, nationally and regionally.

Main output 2: established real-time EWS in selected 2-3 pilot cities.

Main output 3: established real-time OSUFFIM in selected 2-3 pilot cities.

G. Contribution to Regional Coordination/Cooperation

The closed SSOP-I project was regarded as an every good example on enhancing the cooperation of two regional bodies of TC and PTC. The One of achievements of the closed SSOP project is the established regular communication and cooperation mechanism between TC and PTC on coastal multi-hazard early warning.

The 3rd Joint Session of TC and PTC recommended to develop a proposal for SSOP Phase II, based on the successful completion of the SSOP project, and to submit to ESCAP for funding consideration as one of measures to deepen and enhance the cooperation mechanism of two regional bodies.

The proposed activities for SSOP-II will play a positive role in improving the society response capacity, the technical support capacity of costal multi-hazards early warning. The experts from NHMSs, NTWCs, NDMOs, and Government sectoral agencies including national level, local level and community level will be trained on how to prepare SSOP, interpret the information of coastal multi-hazards early warning so that enhance the capacity of disaster risk management.

The proposal of SSOP-II will definitely contribute to regional coordination/cooperation mechanism on costal multi-hazards early warning and enhance the mutual support between TC and PTC through implementation of the proposed activities for SSOP-II.

The strategy of SSOP-II accepted the idea to provide resources and opportunities to involve social scientists and warning experts to improve the training and capacity building on social science aspects of EWS, such as risk and impact assessment, warning communication strategies, partnership/stakeholder engagement, society response capability. The proposal of SSOP-II based upon this strategy would be of great benefit to both TC and PTC and also to a wider audience in other areas.

H. Gender Considerations

The proposed activities of SSOP-II will incorporate gender dimensions and widely encourage females from decision-makers, warning issuers, warning users and local community managers to be involved in the training courses and workshops.

TC will enhance sustainability of the gender-related project activities by integrating them into its on-going and future female training programmes in line with its annual strategic goals.

I. Partners

Following partners will be involved in the implementation of the project of SSOP-II and play their specific:

- ESCAP and WMO: will provide supervise and guidance for implementation of proposed SSOP-II;
- ABU, GAATES, IOC of UNESCO, UN-Women, RIMES; UNDP Asia-Pacific Regional Centre, IRIDeS and ADPC, ADRC: used to be partners of SSOP-I, may provide potential resources persons for SSOP-II;
- RSMCs in Tokyo, New Delhi and Honolulu, Shanghai Typhoon Institute (STI), etc.: may provide resource persons and technical support for SSOP-II;
- NMHSs, NTWCs, NDMOs of capable Members such as China; Hong Kong, China; Japan and Public of Korea: may provide resource persons and technical support for SSOP-II;
- WMO Nanjing Regional Training Centre (TC Training Centre), SYS University: may provide facilities for training courses and workshops of SSOP-II;
- The Secretariats of and PTC (PTCS): in cooperative with TCS, will take the responsible for the provision of secretariat support for implementation of SSOP-II.

J. Capacity

During the implementation of SSOP-I project, Steering Committee composed of Secretaries of Tc and PTC, the technical advisor/project manager and Task Force composed of Working Group Chairpersons provided strong support on expertise and displayed immense courage and wisdom in coordination for success of SSOP. This capacity formed in the practice could ensure the smooth progress of SSOP-II.

The consultant team and resource persons formed in SSOP-I played very active and import role for success of Project in the past years. The expert team already involved with SSOP-I

understand very well about the situation of coastal multi-hazards early warning in the regions of TC and PTC, and this team can be the potential candidates for implementation of SSOP-II as resource persons.

The resource persons for training courses and workshops are available from RSMSs in Tokyo, New Delhi and in Honolulu as well as National Meteorological and Hydrological Services (NMHSs), National Tsunami Warning Centres (NTWCs), National Disaster Management Offices (NDMOs) and Government sectoral agencies of capable Members such as China; Hong Kong, China; Japan and Public of Korea, etc.

Through SSOP project, TC and PTC established close cooperation relationship with GAATES, IOC of UNESCO, UN-Women, RIMES; UNDP Asia-Pacific Regional Centre, IRIDeS. Those organizations would be available to provide support and cooperation for SSOP-II.

The Secretariats of TC (TCS) and PTC (PTCS) will take the responsible for the provision of secretariat support for implementation of SSOP-II. And TCS and PTCS could further explore with working groups on possible collaborations and activities related to this aspect for SSOP-II.

K. Knowledge Management and Results Dissemination

The Manual of SSOP has been published with ESCAP logo with mention of the ESCAP Trust Fund, following approval from ESCAP. It has been delivered to related organizations/agencies such as ESACP, WMO as well as technical advisor/project manager, consutabants, evaluator, etc. And it is also avaible at ***http://typhooncommittee.org/SSOP/FINAL_MANUAL.html***. The hard copies will distributed to Members of TC and PTC as the main material for the training courses and workshops of SSOP-II.

This project of SSOP-II will also provide visibility for the ESCAP Trust Fund for Tsunami Disaster and Climate Preparedness in certain ways:

- Since both TC and PTC are regional bodies affiliated to ESCAP, the Project will need to be conducted under the supervision of ESACP DRR.

- During the implementation of the project, the activities related to the workshop and training courses are expected to be conducted jointly by TC, PTC and ESCAP.

- The Summary Reports and Results from training courses and workshops will be disseminated among Members of TC and PTC via websites with ESCAP logo and mentioning of the ESCAP Trust Fund, following approval from ESCAP.

L. Sustainability

The project of SSOP-I is sustainable in terms of approach. The project has established a cooperative mechanism through discussions and negotiations, which will serve as the basis for future actions. Countries have indicated that they would like to continue technical transfer as well as trainings at country levels for refinement of SSOPs. The main output 2 of the project (Regular communication and cooperation mechanism between TC and PTC on coastal multi-hazards early warning system, particularly southern countries in the region) is expected to contribute to sustainability.

The SSOP-II will play very important role through training courses and workshops on promotion of capacity building of costal multi-hazards risk early warning, which will be great benefit the beneficiary countires on sustainable development of society and economy.

The trainees in SSOP-II will work as trainers after the completion of SSOP-II in their home countries to promote the whole capacity of regions in aspect of costal multi-hazards early warming and disaster risk reduction and management.

The results and experiences the proposed project will be benefit TC and PTC to update their Strategic Plan in furtue. It would be very important for two regional bodies in long-term sustainable development.

M. Counterpart Contributions

Expertise on coastal multi-hazards risk reduction and the facilities for trainings/workshops from partners of SOP-II will be available towards the project as an in-kind contribution.

N. Monitoring, Evaluation and Audit

The project provides for in-house monitoring through Steering Committee, as well as an end of project review, along with an independent evaluation and audit budgeted under the Programme Management heading of the Activity Work Plan.

Typhoon Committee Secretariat (TCS) shall submit to ESCAP biannual progress reports, together with cumulative financial reports within the duration of the project, following a progress reporting template provided by ESCAP.

An independent end of term evaluation would be commissioned by the Typhoon Committee Secretariat in consultation with ESCAP. The evaluation process should aim at facilitating learning.

TCS will arrange an independent audit of the project funds at the end of the project and will submit to ESCAP with agreed timeframe.

O. Annexes

Table of Contents

Annex Number	Annex Name
1	Manual on Synergized Standard Operating Procedures (SSOPs) for Coastal Multi-hazards Early Warning System
2	Quick Reference Guide of SSOP Manual
3	End of Term Evaluation Report: Synergized Standard Operating Procedures for Coastal Multi-hazards Early Warning System
4	The Report of 3rd Joint Session of TC and PTC (draft)

P. Budget and Payment Schedule.

An initial payment USD255,500.00 (costs of activity 1.1, 2.1 and 3.1) will be provided by ESCAP upon signature of the Agreement by both to start the activities 1 as indicated in the attached Project Budget and Payment Schedule

Subsequent payments will be provided upon approval by ESCAP of a written request for payment from the Typhoon Committee Secretariat, 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 Budget Payment Schedule and-Expense Report.