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Strengthening tsunami early warning in the North-west Indian Ocean region through regional cooperation

Phase 2c

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*Regional Working Group for the North West Indian Ocean
Intersessional Meeting, 22 July 2024*

Introduction

- The project is funded by the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness.
- UNESCO has a long-standing relationship with ESCAP.
 - Since 2010 many UNESCO-IOC projects have been supported by its Tsunami Trust Fund.
- The current project involves capacity building for tsunami resilience in India, Iran and Pakistan with Oman and the United Arab Emirates participating on a self-funded basis.
 - This is the 3rd UNESCO-IOC project funded by the TTF that focuses on tsunami in the Makran region of the North-west Indian Ocean

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Strengthening tsunami early warning in the North-west Indian Ocean region through regional cooperation

Phase 1: 2019-2021

- 1) Better understanding of the tsunami risk knowledge to inform and underpin warning and mitigation systems in the NWIO to enable appropriate and effective community responses to the tsunami threat.
- 2) Improvement of warning services at NTC level and the organization of the national warning chains to assure timely warnings.

Phase-2a: 2022

Finalisation of some Phase-1 remaining activities in tsunami risk knowledge and strengthening of national tsunami warning chains

Phase-2b: 2022

Gap analysis and development of guidance on tsunami inundation mapping and evacuation planning in the NWIO region

Phase-2c: 2023-2024 (12 months)

Training in development of 1) tsunami inundation maps and 2) Tsunami evacuation plans to facilitate effective community responses to the threat from near-field and far-field tsunamis.

Phase-3: To be proposed

Implement Tsunami Ready Recognition Programme (or similar national initiative) in NWIO countries.

Objective of Phase 2c




Capacity development training in tsunami inundation maps and evacuation plans to facilitate effective community responses to the threat from near-field and far-field tsunamis.

➤ Pilot communities



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Outputs of Phase 2c

1. **Regional training workshop for members of the NWIO Regional Working Group on Tsunami Inundation Modelling and Mapping (RWG-TIMM).** 
2. **Regional training workshop for selected participants from the National Working Groups on Tsunami Evacuation Planning (NWG-TEPs) of the member countries to build the required capacities to facilitate and provide technical expertise for evacuation planning processes at local level.** 
3. **Implementation and backstopping during the evacuation planning and implementation processes in pilot communities to help strengthen capacities of the national facilitators, and to assure quality in the processes and outputs.**  *ONGOING*

Activity Output 5.1 Regional training workshop on tsunami inundation mapping

Development in inundation mapping capabilities.

Three (3) day regional training workshop during 21-23 April 2024.

Hosted by the Directorate General of Oman Meteorology of the Civil Aviation Authority in Muscat.

Attended by participants from India, Iran, Oman, Pakistan and UAE, facilitators, trainers, and UNESCO consultants (international & national).



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Activity Output 5.2 Regional training workshop on tsunami evacuation planning

Development Tsunami Evacuation Plan capabilities.

Four (4) day regional training workshop during 22-25 April 2024

Hosted by the Directorate General of Oman Meteorology of the Civil Aviation Authority in Muscat.

Held back-to-back with the Tsunami Inundation Mapping workshop including 2 days with the participants from both events.

The joint events were attended by around 40 in-person and 25 online participants including trainers and facilitators.



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Outcomes of the Muscat Workshops



- Review of existing tsunami inundation maps & development of plans for enhanced inundation maps utilizing the North-west Indian Ocean Probabilistic Tsunami Hazard Assessment.
- Capacity building in tsunami evacuation planning in the project pilot areas:
 - Kerela, India
 - Chabahar & Jask, Iran
 - Gwadar & Karachi, Pakistan
 - Al Hail North, Oman
 - Fijairah, UAE
- Participants commented that sharing of experiences in tsunami inundation and evacuation mapping among neighboring communities was valuable for refining their implementation processes in-country.

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Activity Output 5.3 National Implementation and backstopping during the evacuation planning processes in pilot communities

Backstopping support during the national evacuation planning processes in pilot communities and systematization of experiences feedback for possible adaptations of the methodology.

Translation of UNESCO-IOC manual and Guides to Farsi and Urdu:

- MG 74 (Tsunami Ready)
- MG 82 (Preparing For Community Tsunami Evacuation)

UNESCO International Consultants (2)

- International Consultant backstop national inundation mapping
- International Consultant backstop national evacuation planning

UNESCO National Consultants (India, Iran, Pakistan)

- National Facilitators/Consultants/Technical Assistants
- In country travel and organisation 1 national meeting each



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Activity Output 5.3 National Implementation and backstopping during the evacuation planning processes in pilot communities

Backstopping support continued.



UNESCO National Consultants (India, Iran, Pakistan)

- National Facilitators/Consultants/Technical Assistants
- In country travel and organisation of 1 national meeting each

The UNESCO national consultants, including Ms Naghma Firdaus (India), Mr Mehdi Masoodi (Iran), and Ms Ghazala Naeem (Pakistan) are organising follow-up stakeholder consultations to finalise the community tsunami evacuation maps.

The evacuation maps will be tested and refined through community evacuation exercises to be held in August 2024.

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Activity Output 5.3 National Implementation and backstopping during the evacuation planning processes in pilot communities

India: In Kerela, pre-planning meetings have been held in 9 villages and the development of tsunami evacuation plans and maps is underway. In parallel, preliminary meetings were held in Gujarat and the identification of pilot areas is expected soon.

Iran: In Jask, community tsunami evacuation maps are being constructed. The city has been divided in four zones. Two assembly areas have been selected in addition to several vertical evacuation shelters. The map approval process by LDMO and NDMO is underway. Following this, signs will be prepared.

Pakistan: In Gwadar, the evacuation maps are being improved based on information gathered during a site visit. The criteria for vertical evacuation building is being assess via consultation with government departments.



The community evacuation maps will be tested and refined through community evacuation exercises to be held in August 2024.

Activity Output 6

Project Monitoring and Evaluation

UNESCO Consultant to conduct and report on the end-of-project evaluation.

- Travel: If required 3 days to Perth, Jakarta, India, Iran, or Pakistan.



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Schedule

Implementation Plan Schedule NWIO UNESCO Project Phase 2c Activities

Objectives	2023			2024								
	Oct	Nov	Dec	Jan	Feb	March	April	May	Jun	Jul	Aug	Sept
5. Training in development of tsunami inundation maps and evacuation plans to facilitate effective community responses to the threat from near-field tsunamis.												
5.0. Engage International and National Consultants:												
Engage International: Inundation Modeling					3rd week							
Engage National Consultants: Inundation Modeling					3rd week							
Engage International: evacuation planning					3rd week							
Engage National Consultants: evacuation planning					3rd week							
5.1. Regional training workshop on Tsunami Inundation Modelling and Inundation Mapping												
Virtual coordination and meetings with Regional Working Group TIMM (RWG-TIMM)												
Regional Workshop on Tsunami Inundation Modelling and Mapping in UAE or Oman							1st week					
Prepare inundation maps for Pilot Areas												
5.2. Regional training workshop for evacuation planning processes at local level												
Virtual coordination and meetings with National Working Groups Tsunami Evacuation Planning (NWG-TEP)												
Regional training workshop on evacuation planning in Oman							1st week					
5.3 National implementation and backstopping during evacuation planning processes in pilot communities												
Engage Consultant for translation MG74 (Tsunami Ready) and MG 82 Tsunami Evacuation					3rd week							
Contracting for translation layout and printing of MG74 and MG82								3rd week				
Evacuation plans prepared for Pilot Communities												
Tsunami drills for Pilot Communities (To be discussed and agreed with National Stakeholders)											Drill	
6. Project Evaluation												
Engage consultants									1st week			
Complete NWIO Project Phase 2a 2b 2c evaluation report												
Project Reporting												
6 month reporting to ESCAP												

	Project work and preparation activities
	Virtual Coordination Meeting with National Working Group
	Preparation for Consultant solicitation
	Contractual engagement with Consultant
	Consultant working period
	Workshop Preparation
	Events: Workshops (Date to be decided)
	Backstopping Period
	Project Reporting

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Future Plans

The project work of Phase 3 will contribute towards the adoption of the UNESCO-IOC Tsunami Ready Recognition Programme in more Indian Ocean communities.

The ICG/IOTWMS Secretariat and IOTIC will implement similar trainings for the other Member States of the Indian Ocean Tsunami Warning and Mitigation System.

- Tsunami Evacuation Maps, Plans and Procedures training workshop for Indian Ocean Member States
~ *proposed for 2025 in Hyderabad* ~

As a result, more at-risk coastal communities will be better prepared for and resilient to tsunamis by 2030.

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