

# unesco

Intergovernmental Oceanographic Commission

THE UN OCEAN DECADE OCEAN OUTCOME **AND TSUNAMI EARLY** WARNING **SYSTEMS** 

### EXISTING SERVICES OF THE GLOBAL TSUNAMI WARNING SYSTEM

Intergovernmental Oceanographic Commission of UNESCO 2021 www.ioc-tsunami.org

### The services provided by the US National Tsunami Warning Center are outside the framework of the IOC coordinated tsunami warning systems **CARIBE-EWS NEAMTWS Tsunamis and Other Coastal** North Eastern Atlantic, Mediterranean Hazards Warning System for the and connected seas Tsunami Warning Caribbean and Adjacent Regions and Mitigation System Service provided by Accredited TSPs: PTWC CENALT Pacific Tsunami Warning Center Centre d'Alerte aux Tsunamis IPMA **PTWS** Planned Instituto Portugues do Mar e da Atmosfera INGV Pacic Tsunami Warning Istituto Nazionale di Geofisica e Vulcanologia and Mitigation System KOERI Kandilli Observatory and Earthquake Research NWPTAC/JMA Institute Northwest Pacific Tsunami NOA Advisory Center / IOTWMS National Observatory of Athens Japan Meteorological Agency Indian Ocean Tsunami Planned Warning and Mitigation System PTWC Pacific Tsunami Warning Center InaRTSP Service is provided by the Indonesian Regional Tsunami Service Provider SCSTAC/NMEFC InaTEWS South China Sea Tsunami ITEWC Indonesian Tsunami Early Warning System at Indian Tsunami Early Warning Centre Advisory Center / the BMKG, outside the framework of the IOC-National Marine Environmental JATWC coordinated tsunami warning systems Joint Australian Tsunami Warning Centre Forecasting Center of P. R. China



# 2021 United Nations Decade of Ocean Science for Sustainable Development



The **Thirty-first Session** of the Intergovernmental Oceanographic Commission (of UNESCO) Assembly (14-25 June 2021) approved the establishment of the **Ocean Decade Tsunami Programme**, a Scientific Committee to prepare the Draft 10-Year Research, Development and Implementation Plan and Tsunami Ready Coalition

"...this programme will seek to ensure that a country's ability to prepare for, defend against and recover from the tsunami threat is not dependent on what it can afford."

Alexander Frolov, Jul 2021

## CHALLENGES AND OPPORTUNITIES FOR THE DEVELOPMENT OF THE GLOBAL TSUNAMI WARNING SYSTEM

- Improve data exchange:
  - bathymetry,
  - seismic,
  - sea level,
  - GNSS,
  - Digital Earth Elevation data
- Improve speed of tsunami detection and measurement system on the basis of new technologies (including nearfield and non-seismic tsunamis)
- Scaling the IOC Tsunami Ready programme

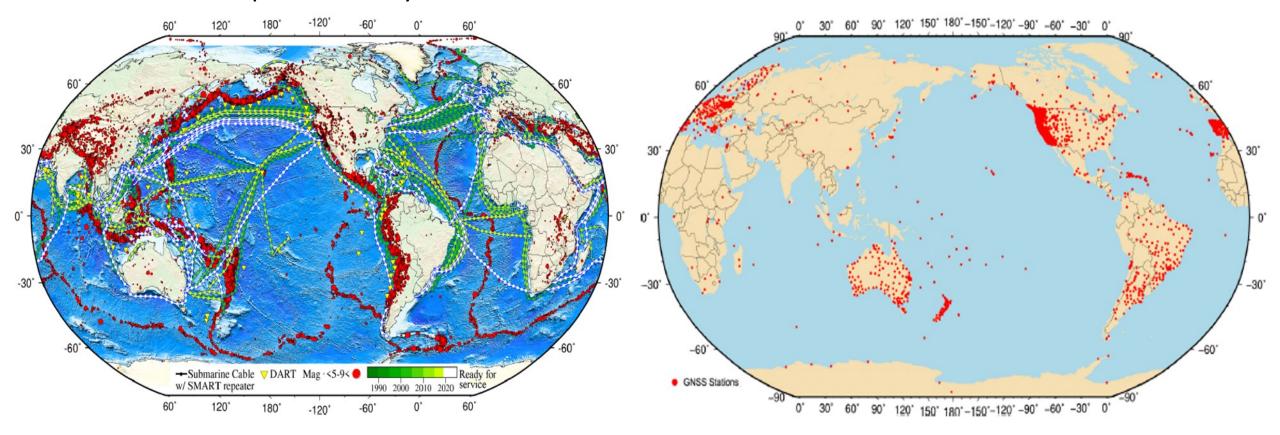


- Increase capacities for tsunami warning and mitigation within SIDS/LDS
- Ensuring interoperability with other components of a global coastal Multi-Hazard Early Warning System (MHEWS)

### NEW POTENTIAL SOURCES OF SEISMIC OBSERVATIONS FOR TSUNAMI WARNING SYSTEMS

Locations and magnitudes of historical seismic events (red), DART tsunami buoys (yellow triangles) and current (green) and planned (white) submarine cables,. SMART repeaters shown every 300 km

The location of 2,260 real-time GNSS stations from public networks around the world



Pacific Northwest Geodetic Array/Central Washington University

### **OCEAN DECADE TSUNAMI PROGRAMME:** Seeking Major Advances in SCIENCE and PREPAREDNESS

New observational and analysis technologies to move from a high-uncertainty assumption-based capability to a low-uncertainty dynamic-based capability

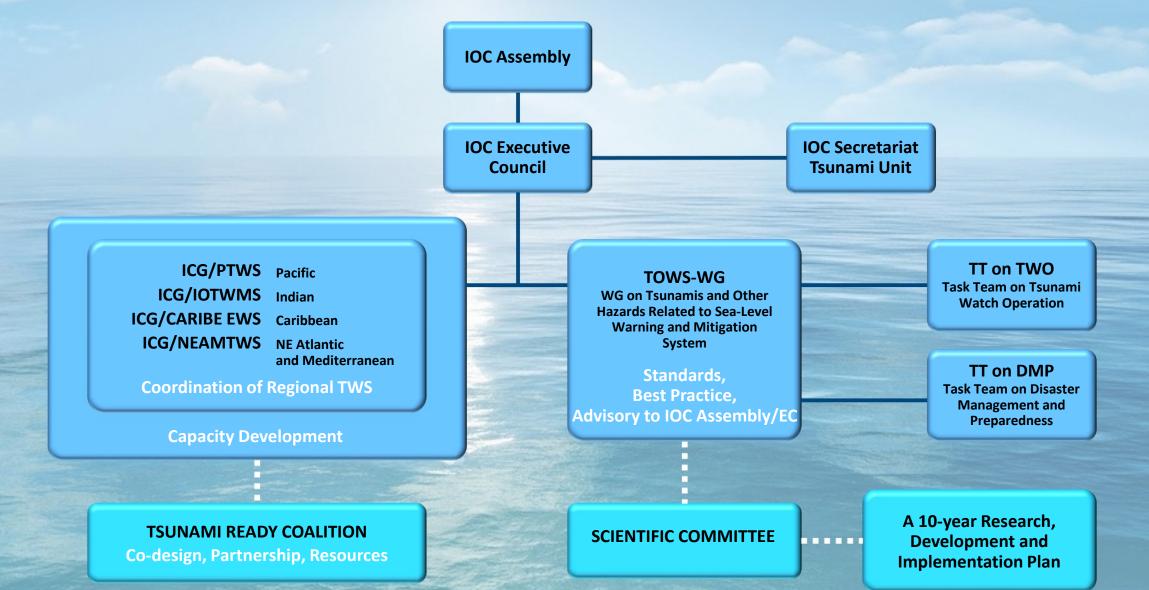
### **RESILIENCE!**

Communities respond to tsunami threats by combining accurate real-time impact forecasts with deep community preparedness. Tsunami disaster impacts are minimized, enabling rapid restoration of critical infrastructure and services Comprehensive institutional & community preparedness and capacity building efforts aimed at achieving **IOC Tsunami Ready** designation across all socio-economic categories



Tsunami Ready

### OVERVIEW OF THE OCEAN DECADE TSUNAMI PROGRAMME PLANNINGS



### OVERVIEW OF THE OCEAN DECADE TSUNAMI PROGRAMME PLANNINGS (CON'ED)

The TOWS-WG will perform Global Steering Committee functions for the programme

> A Scientific Committee with an advisory role for the duration of the programme will be established

A special Coalition for Tsunami Ready will be established in collaboration with other critical stakeholders across the UN structure and national civil protection agencies

The Scientific Committee will be tasked to develop a Draft 10-Year Research, Development and Implementation Plan for the programme for endorsement by the TOWS-WG at its next session The four ICGs will perform regional Steering Committee functions

### **OCEAN DECADE TSUNAMI PROGRAMME:**

# THE MAIN SOCIAL OUTCOME

то маке **100%** 

### OF COMMUNITIES AT RISK OF TSUNAMI PREPARED FOR AND RESILIENT TO TSUNAMIS

<sup>вү</sup> 2030