



Regional Bureau for Science in Asia and the Pacific: Science Support for Disaster Risk Reduction

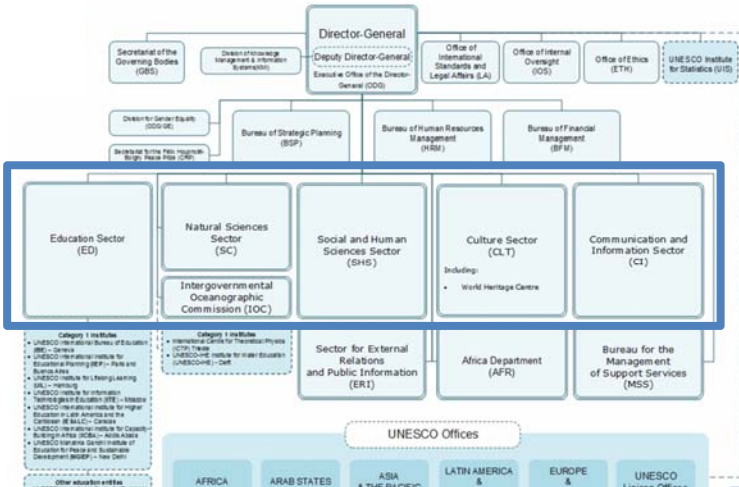
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UNESCO Office Jakarta



REGIONAL WORKSHOP ON
CAPACITY FOR ACCELERATING SCIENCE AND TECHNOLOGY (FAST)
TO FOSTER THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS
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Disaster Risk Reduction – UNESCO's role

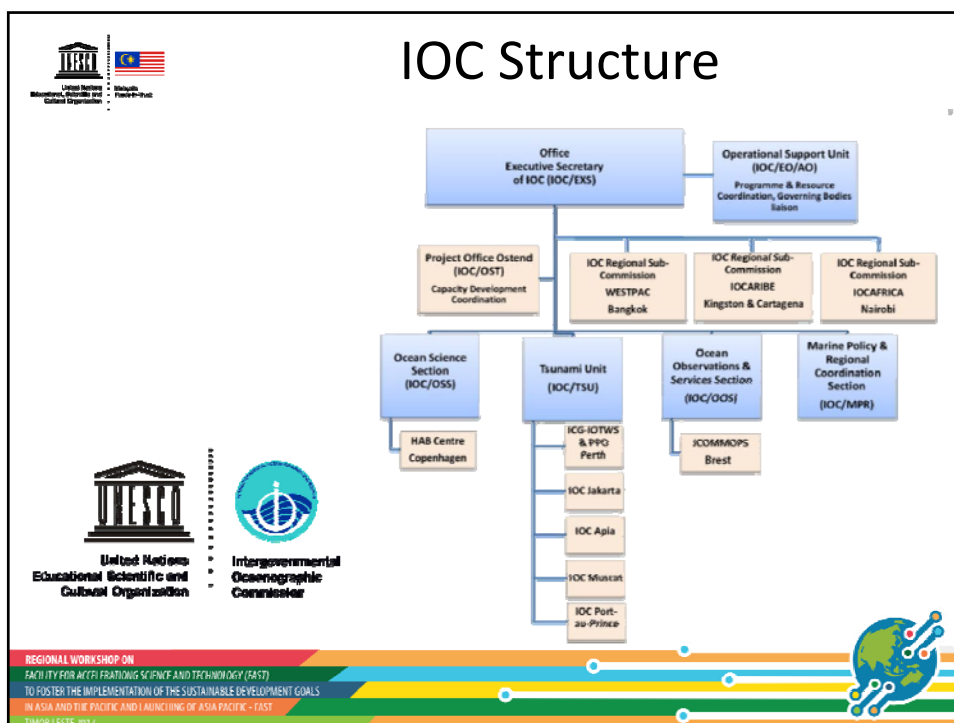
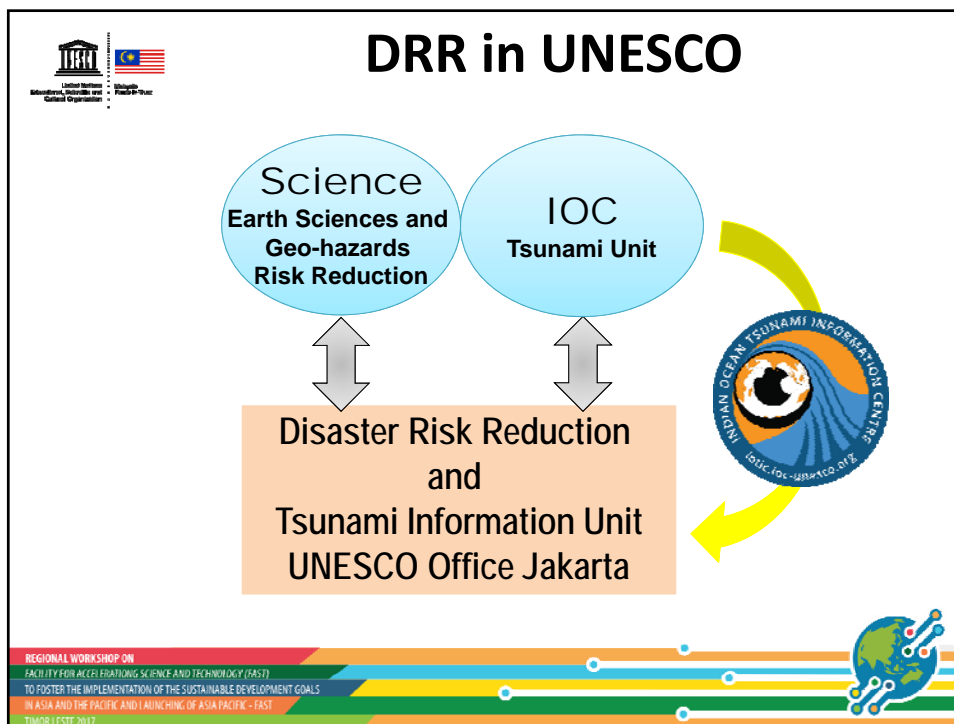



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AFRICA ARAB STATES ASIA & THE PACIFIC LATIN AMERICA & THE CARIBBEAN EUROPE & NORTH AMERICA UNESCO Liaison Offices


 More than 50 field offices


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  **IOE High Level Objectives**


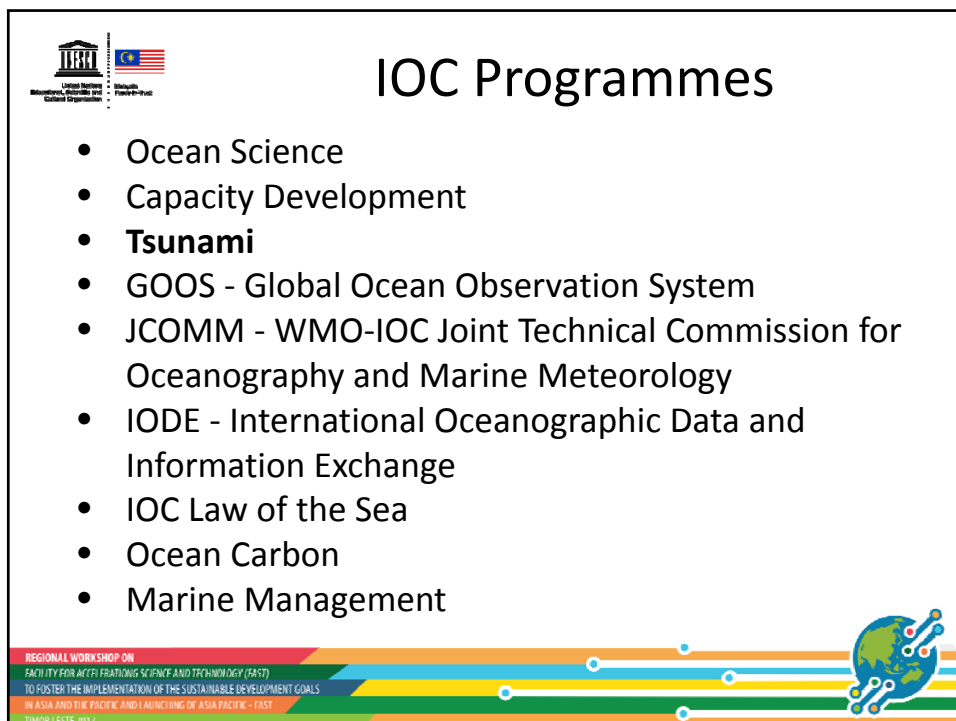
 **HIGH LEVEL OBJECTIVE 1**
Healthy ocean ecosystems and sustained ecosystem services



 **HIGH LEVEL OBJECTIVE 2**
Effective early warning systems and preparedness for tsunamis and other ocean-related hazards

 **HIGH LEVEL OBJECTIVE 3**
Increased resiliency to climate change and variability and enhanced safety, efficiency and effectiveness of all ocean-based activities through scientifically-founded services, adaptation and mitigation strategies

 **HIGH LEVEL OBJECTIVE 4**
Enhanced knowledge of emerging ocean science issues


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  **IOE Programmes**

- Ocean Science
- Capacity Development
- **Tsunami**
- GOOS - Global Ocean Observation System
- JCOMM - WMO-IOE Joint Technical Commission for Oceanography and Marine Meteorology
- IODE - International Oceanographic Data and Information Exchange
- IOE Law of the Sea
- Ocean Carbon
- Marine Management

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IOC SDG Focus

#14: Conserve and sustainably use the oceans, seas and marine resources




#11: Make cities inclusive, safe, resilient and sustainable






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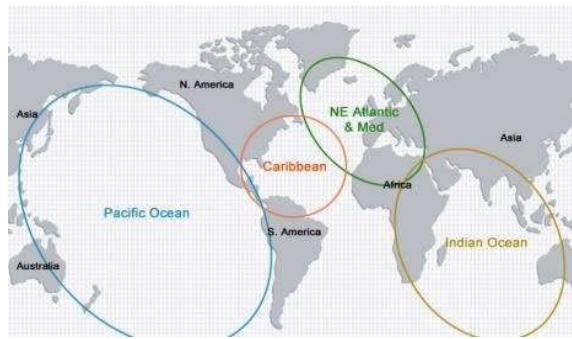


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IOC- UNESCO Tsunami Monitoring and Warning System




Pacific (and Asia):

- Pacific Tsunami Early Warning System – Hawaii
- Japan Meteorology Agency



Indian Ocean (Asia and Africa):

- BOM – Australia
- INCOIS – India
- INATEWS - Indonesia

- Support the Development of National Tsunami Warning and Mitigation System
- Sea Level Monitoring System and Sharing of Data
- Standard Operating Procedures
- Mitigation, Preparedness, and Education




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UNESCO-IOC in the Indian Ocean Region

Indian Ocean Tsunami Information Centre (IOTIC)

The IOTIC is an IOC UNESCO entity housed in UNESCO office Jakarta that serve as information resource to support the Indian Ocean member states in capacity building, education, awareness and preparedness for an effective tsunami warning and mitigation system in the region.



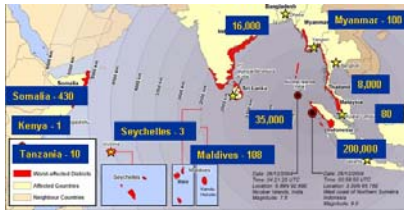
**Intergovernmental
Oceanographic
Commission**

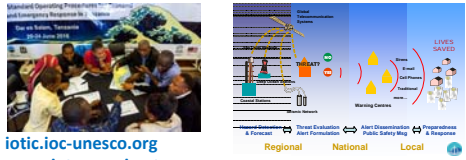


**Indian Ocean
Tsunami Information
Centre**


Programme: Education, Awareness, and Preparedness

1. Indian Ocean Tsunami Ready Programme
2. Tsunami Risk Reduction Policies
3. TEWS Standard Operating Procedures
4. Coastal Hazard Risk Assessment (Tsunami)
5. Tsunami Evacuation Map, Plan, and Procedures
6. How To conduct Plan, and Implement Tsunami Exercises
7. Preserving Past Tsunamis for Future Preparedness








iotic.ioc-unesco.org
www.iotsunami.net
www.iotsunami.info
www.iotsunami.org



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DRR in UNESCO's Medium-Term Strategy for 2014-2021



UNESCO will maintain a major focus on **disaster risk reduction (DRR)**, as the most cost-effective means to mitigate the effects of disasters and save lives, heritage and infrastructure. Emerging areas of DRR competence for UNESCO include the **remote sensing** of emergency groundwater resources in drought-affected countries; **national floods forecasting** and **water resource management**; **DRR education** including through radio and other media; as well as the global expansion of **Tsunami Early Warning Systems**.

UNESCO's disaster response strategy will focus on **access**, including access to fresh water, to education, to disaster risk reduction information, to hazard assessments, and to capacity building for multi-hazard disaster early warning systems and resource management.



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UNESCO's Activity by Sector Culture

Strategy for Reducing Risks from Disasters at World Heritage Properties

- Training Workshops
- International Technical Assistance
- Emergency Response
- Awareness-raising and Education



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World
Heritage
Convention









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UNESCO's Activity by Sector Education

Comprehensive School Safety Framework




Identifies three overlapping pillars:



1. Safe Learning Facilities,
2. School Disaster Management, and
3. Risk Reduction and Resilience Education

with the following goals:

- To protect learners and education workers from physical harm in schools;
- To prevent interruption of the provision of education when faced with hazards;
- To safeguard education sector investments;
- To strengthen climate change adaptation and mitigation competencies and disaster resilience through education




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The Earth Sciences and Geo-hazards Risk Reduction - Natural Science of UNESCO

VISUS: Visual Inspection for defining the Safety Upgrading Strategies



HAZARDS


Earthquake	Flood
Volcano	Tsunami
Landslide	Fire
Wind	Wildfire

Pillar 1 Save Learning Facilities of the Comprehensive School Safety:
UNESCO-VISUS parameters:


Global structure,
 Local structure,
 Site location / situation,
 Operational aspects, and
 Non-structural elements

VISUS Adaptation Programme

- Adaptation of the methodology and survey tools to local Context (building typology, hazards, construction method, language, etc.)
- Transfer of scientific knowledge through capacity building of local engineers, decision makers, and surveyors;
- Training on VISUS for Decision Makers
- Pilot VISUS Methodology in Schools and School's individual and collective reports;
- Geo-referenced national inventories of schools in mapping platforms such as Open Street Map and Disaster Management Platform





2015: 60 Schools in Bandung and Pangandaran



2016: 100 Schools in Ambon and North Moluccas


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Regional Science Bureau for Asia and the Pacific Support Strategy

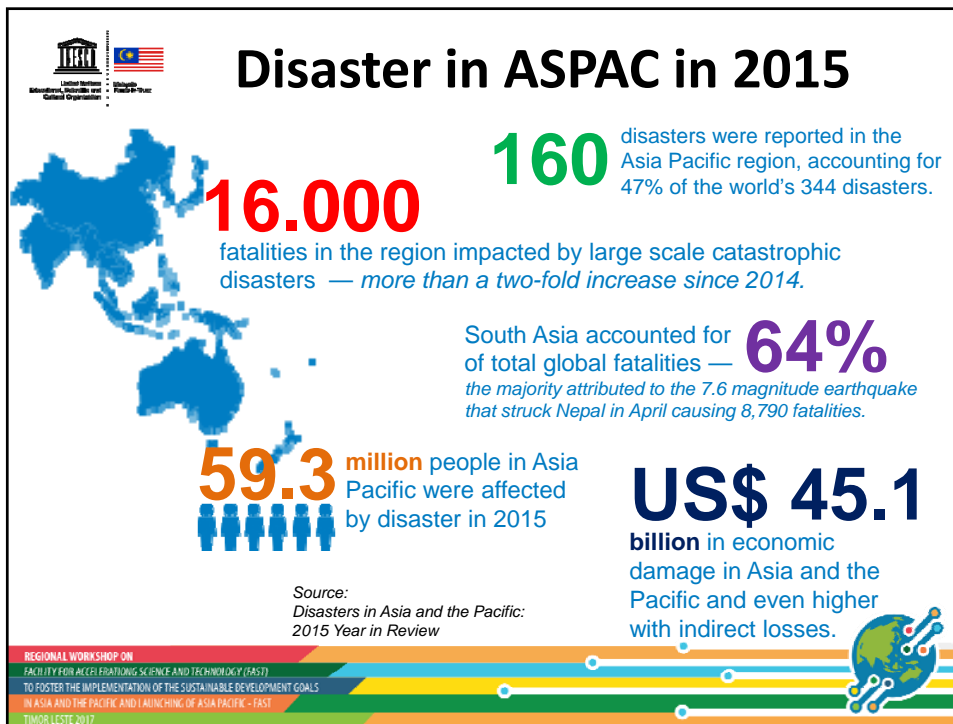
Science, Engineering, Technology, and Innovation for Disaster Risk Reduction

2017 - 2021



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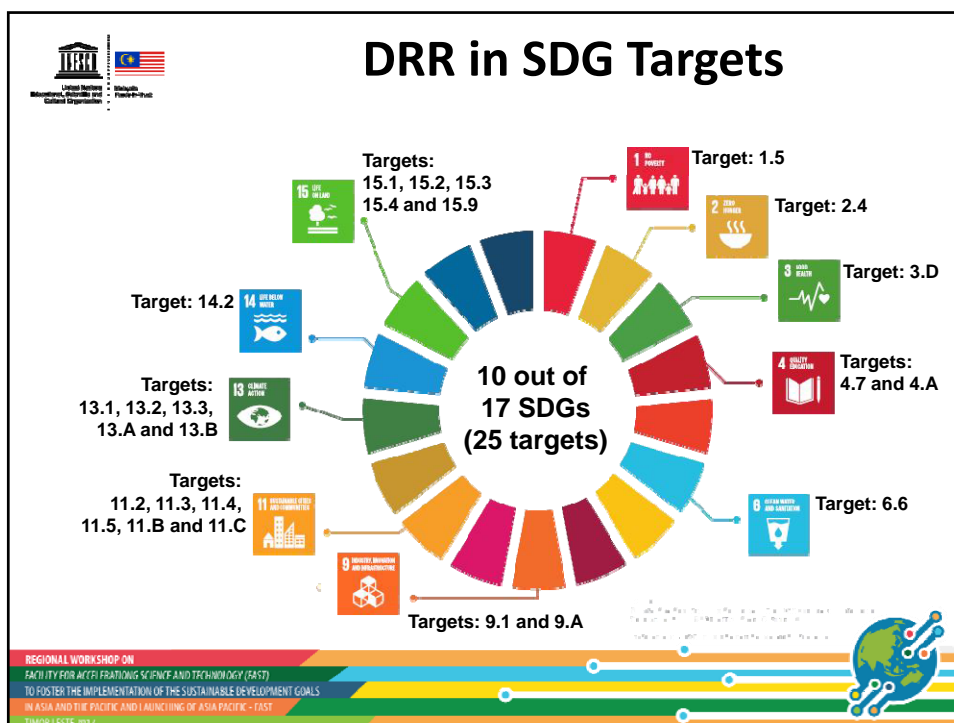
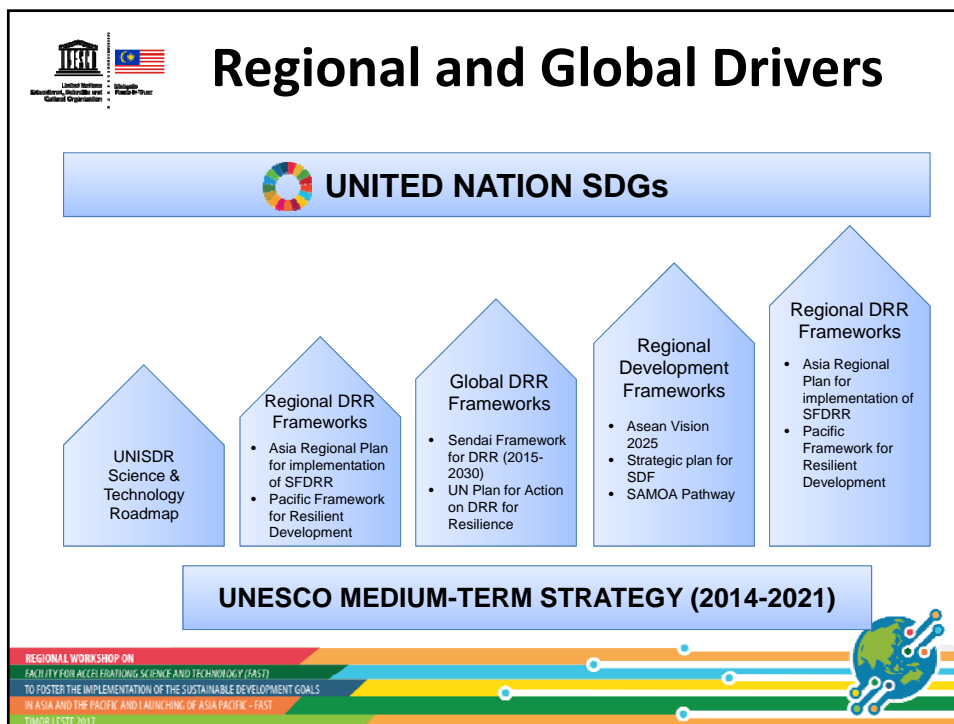
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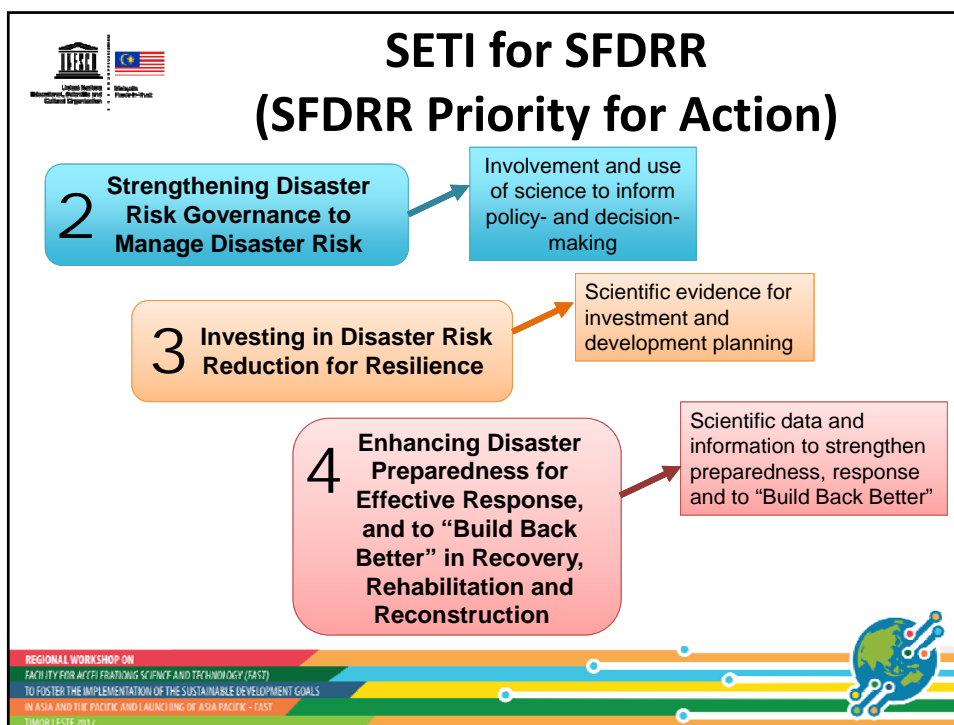
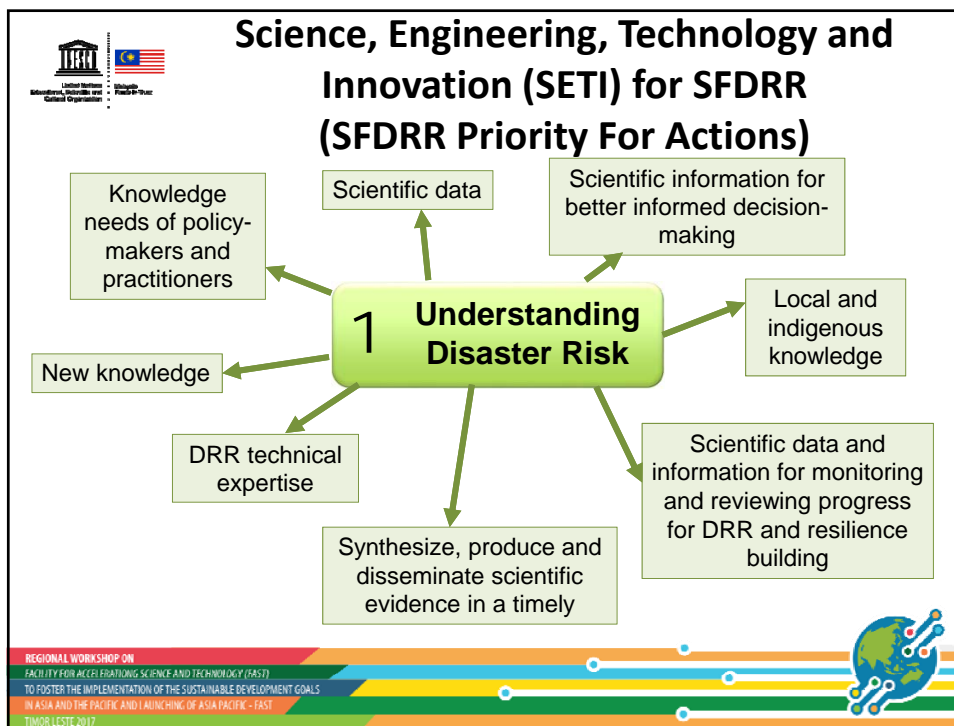


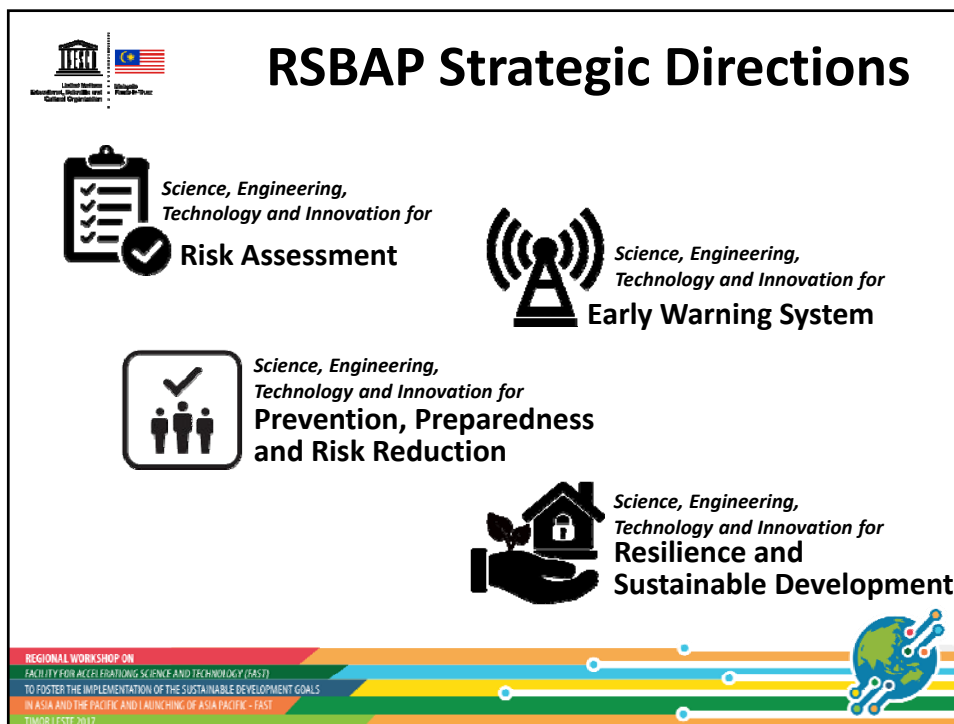
Mission

To advance the use of science, engineering, technology, and innovation (SETI) to mitigate disaster risks and strengthen the resilience of societies through better understanding the hazard and risk, prevention and risk reduction, preparedness, and early warning.


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RSBAP Strategic Directions

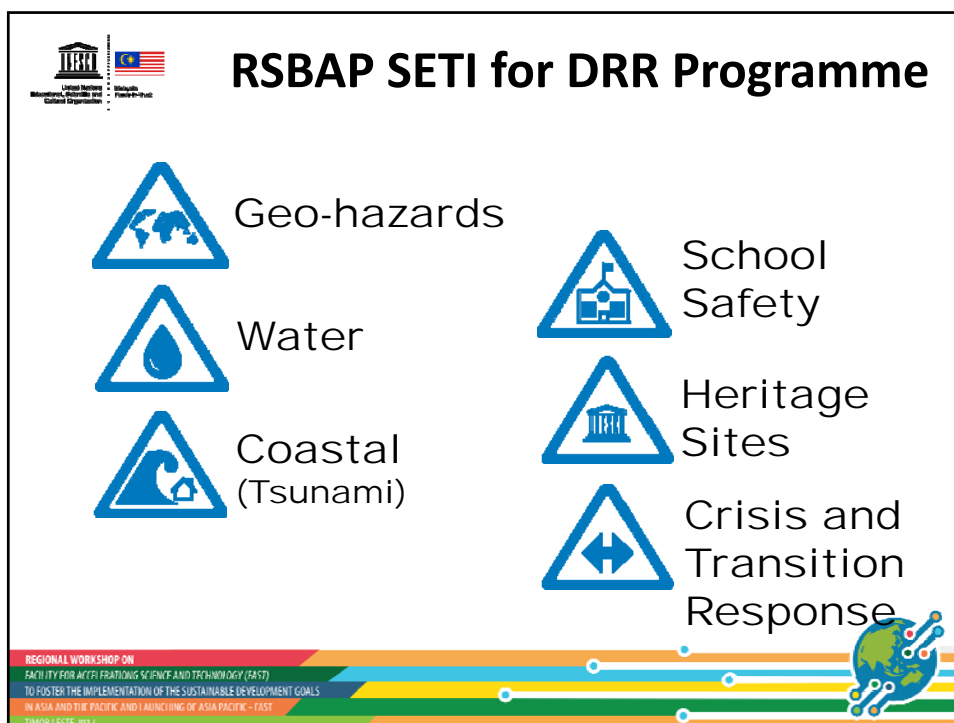

Risk Assessment
Science, Engineering, Technology and Innovation for


Early Warning System
Science, Engineering, Technology and Innovation for








Prevention, Preparedness and Risk Reduction
Science, Engineering, Technology and Innovation for


Resilience and Sustainable Development
Science, Engineering, Technology and Innovation for



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RSBAP SETI for DRR Programme

- 
Geo-hazards
- 
Water
- 
Coastal (Tsunami)
- 
School Safety
- 
Heritage Sites
- 
Crisis and Transition Response









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Prioritisation

-  **SETI Application**
-  **Transboundary**
-  **UNESCO Competitive Advantage**
-  **UNESCO Programme Priority**
-  **Resource (Funding)**
-  **Partnership**
-  **Cross Cutting Issues**
-  **Contribution to Global Frameworks**

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Support by RSBAP

-  **Tools and Guidelines**
-  **Coordinate Regional Cooperation in DRR Research**
-  **Coordinate Policy Development for SETI to support DRR**
-  **Establish and Strengthen Cooperation with Partners**
-  **Promote Public Awareness on SETI for DRR**
-  **Coordinate with scientific community on SETI for DRR**
-  **Assistance on technical studies and capacity building**

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Examples of SETI for DRR

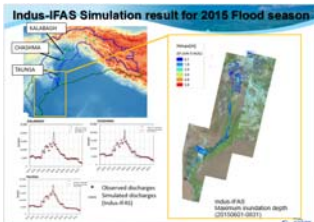
FLOOD TECHNOLOGY & DISASTER RISK REDUCTION





Strategic Strengthening of Flood Warning and Management Capacity in Pakistan

Following the 2010 Pakistan floods, UNESCO with the aid of the Government of Japan supported the Flood Warning and Management Capacity of Pakistan' project.


The project focused on strengthening the country's capacity to deal with floods and watershed management in a holistic manner by developing 3 inter-related pillars; strategic augmenting of flood forecasting and hazard maps; data sharing platforms; and capacity development.



- Establishment of the technical foundation for sustainable capacity development on the flood management, forecasting, early warning and flood hazard analysis in Pakistan agencies.
- Technical studies to promote strengthening of cooperation with Indus river basin countries for transboundary flood management and transboundary data sharing.
- Capacity building and education to community on flood management for proper utilization of flood hazard information and tools



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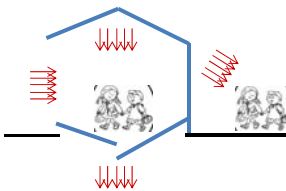

Examples of SETI for DRR




VISUS (Visual Inspection for defining the Safety Upgrading Strategies). Multi-hazard school safety assessment methodology and tools through science-based information




The VISUS methodology is based on a technical engineering approach that can be used by engineering students and building construction vocational students to assist the government to better prioritize safer school programs in their region.


The method aims to help policy makers in deciding where to focus their risk reduction efforts and interventions based on available resources and scientific-evidence information.

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UNESCO Examples of SETI for DRR


Mobile Application for Preparedness

TANAH and SAI FAH are prime examples of educational gamification for disaster risk reduction. The mobile apps provide integral lessons on, and reinforces the importance of, disaster preparedness, through exploring potential situations that may occur. Offered as platform-based games with various levels, users are provided with key survival lessons for all phases of disaster in an interactive manner.


While SAI FAH disseminates information on flood preparedness and survival, TANAH teaches users how to prepare, respond to and recover from tsunamis and earthquakes. Both succeed in their underlying objectives of delivering quality, interactive, and accurate material in an organic way to a wide audience.











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UNESCO Examples of SETI for DRR

Protecting People from Marine Hazards: Tsunami

UNESCO, through the Intergovernmental Oceanographic Commission (IOC/UNESCO), works with the Member States to build sustainable tsunami early warning and mitigation systems.

- Tsunami risk assessment includes the evaluation of the hazard and the levels of vulnerability of coastal communities.
- Development and coordination of tsunami early warning and mitigation systems based in the Indian Ocean
 - IOC/UNESCO established Indian Ocean Tsunami Information Centre (IOTIC) to support on public education, awareness and building tsunami ready community





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Thank you

