2017/SOM1/EPWG/025
Agenda Item: 7.3.2

Institutionalizing Early Warning Systems

Purpose: Information
Submitted by: PDC

11th Emergency Preparedness Working Group Meeting
Nha Trang, Viet Nam
18-19 February 2017

Institutionalizing Early Warning Systems

APEC EPWG
Nha Trang, VN
18-19 Feb 2017

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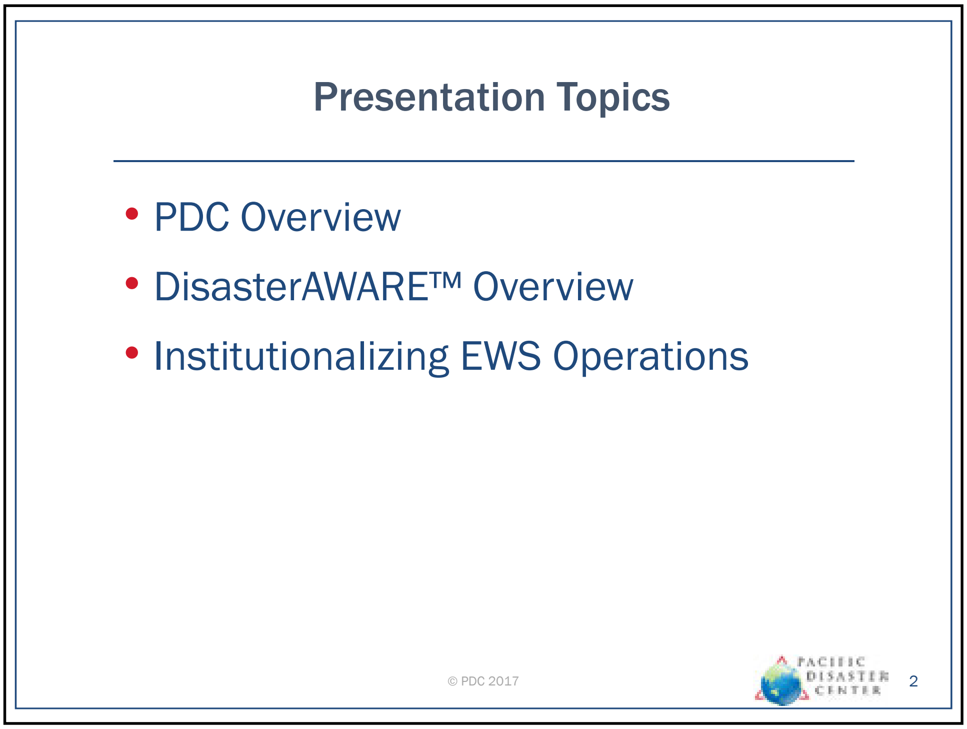

Presentation Topics

- PDC Overview
- DisasterAWARE™ Overview
- Institutionalizing EWS Operations

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PDC Overview

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In Brief, PDC…

- Applies Science and Technology to help
- Executives (and Disaster Managers)
- Reduce Disaster Risks, and better
- Prepare for and
- Respond to Disasters around the World

Operational Since 1996
HQ'd in Hawaii, USA
Managed by University of Hawaii

Risk
PDC Integrated Active
Population Density
Live Cameras
Hazards and Events
Recent Active Events
Recent Earthquakes
Active Volcanoes
Recent Hotspots
USAID

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Challenges and Gaps…

- Inadequate Tools for the Decision Makers
    - Lack Situational Awareness
    - Warnings are Hard to Digest
    - Information is Scattered
    - Risks are not Understood
    - Dissemination is Limited
- Information not easily understood is not particularly useful ….

INFORMATION
Busan Aquarium
MAG
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Overcoming Challenges

- Tools for Decision Makers
    - Simplify, Integrate, & Expedite Processing
    - Understand Exposure
    - Disseminate Early Warning
        - Social Media, Mobile Apps
    - Support Decisions Based on Latest Assessments
- Info for Policy Makers & Planners
    - Assess Socio-Econ Risks & Vulnerabilities
- Capacity for Practitioners
    - Training & Exercise
    - Workshops

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DisasterAWARE™

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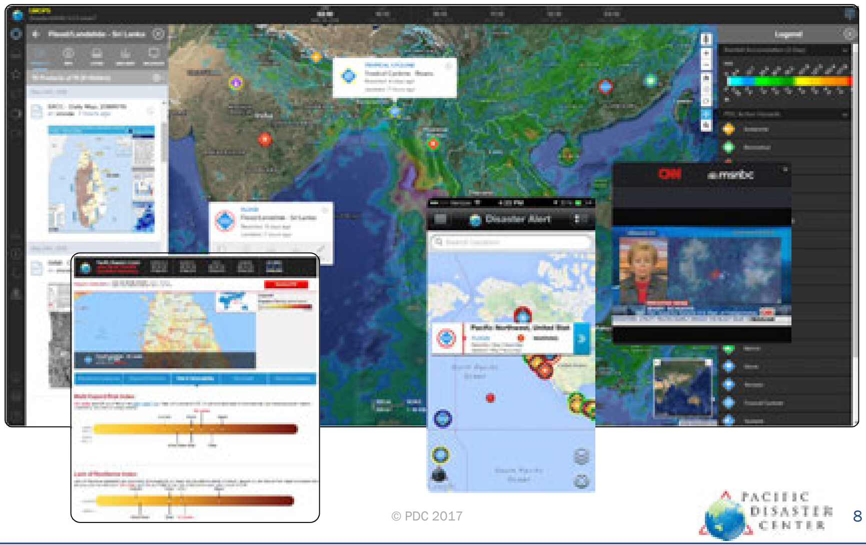
DisasterAWARE™: Internet-Based DSS


Flood/Landslide - Sri Lanka
Legend
Disaster Alert
Pacific Northwest, United States
CNN
msnbc

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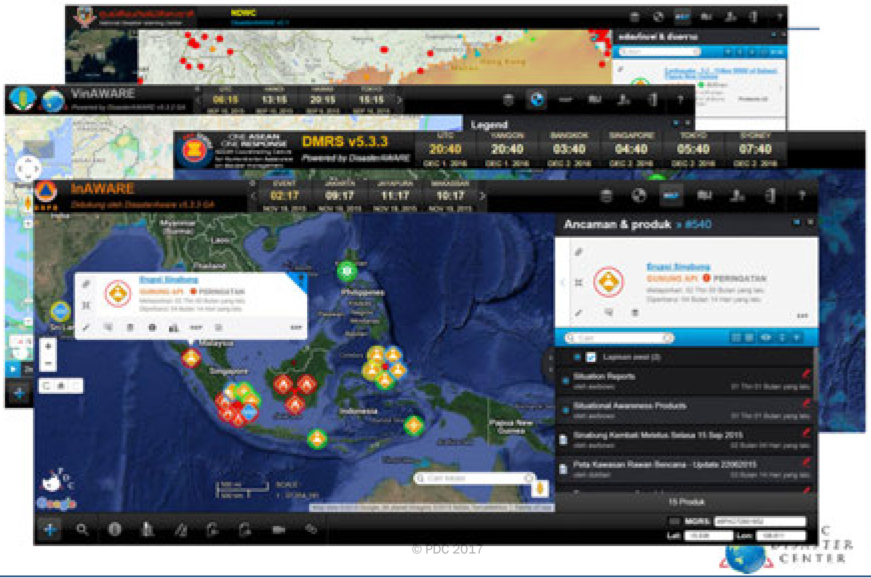
DisasterAWARE in SE Asia

USTDA
USAID


NDWC
VinAWARE
DMRS v5.3.3
InAWARE
Ancaman & produk
Legend

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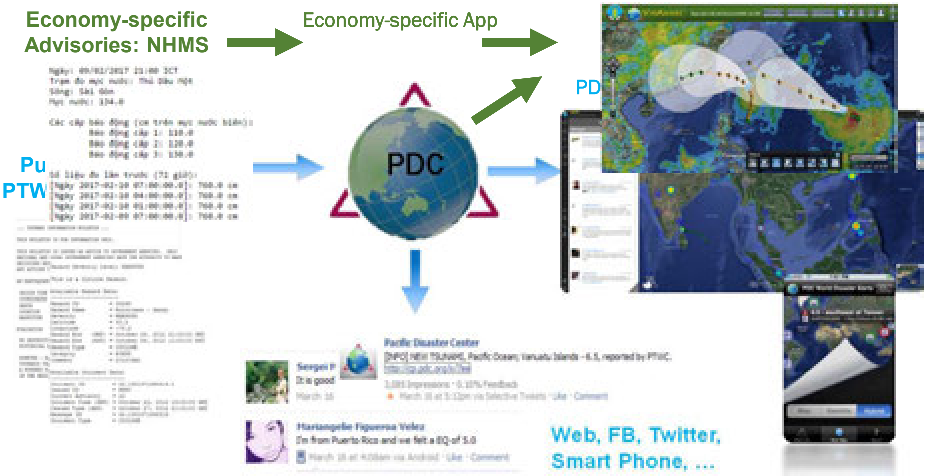
Alerting: From Authoritative Sources to DM Officials and the Public


Economy-specific Advisories: NHMS
Economy-specific App
PD
Pu
PTW
PDC

Pacific Disaster Center
[INFO] NEW TSUNAMI, Pacific Ocean; Vanuatu Islands - 6.5, reported by PTWC.
1,091 Impressions · 0.10% Feedback
March 16 at 5:12pm via Selective Tweets · Like · Comment

Sergei P
It is good
March 16

Mariangelie Figueroa Velez
I'm from Puerto Rico and we felt a EQ of 5.0
March 16 at 4:00am via Android · Like · Comment

Web, FB, Twitter, Smart Phone, ...

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Institutionalizing EWS: DisasterAWARE Illustrations

- **Concept of Operations**
- **Policy Framework**
- **Standard Operating Procedures (SOP)**
- **Staffing Plan**
- **Training and Exercise**
- **Operational Support and Maintenance**

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2016 US-ATAARI– APEC EPWG EWS Study

- Recommendations
  3. Document concepts of operation, decision authorities, and information flows for early warning systems. This activity should incorporate all early warning system stakeholder groups to clarify roles, challenges, and opportunities.
  4. Encourage partnerships with the private and non-profit sectors to augment the capacity, reach, and effectiveness of early warning systems.

USAID

STRENGTHENING PUBLIC ALERT
& WARNING CAPACITY
IN APEC ECONOMIES

August 2016

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Concept of Operations (CONOPS)

- What is a Concept of Operations?:
  - Describes the information flow (collection, storage, dissemination) and the types of decisions made with the information.
  - Outlines organizational structures, procedures, roles and responsibilities.
  - Identifies gaps between the actual and expected performance of the system and recommends strategies for filling the gaps.

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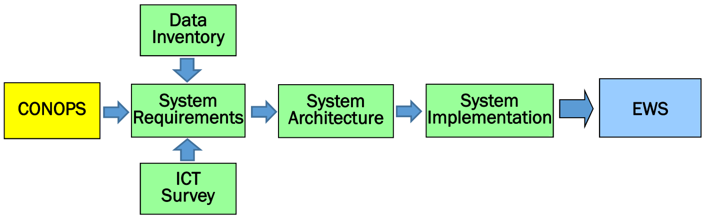
CONOPS Purpose

- Provide guidance for the use of the early warning system (EW) within existing decision making context for natural hazard early warning and response


Data Inventory
CONOPS
System Requirements
System Architecture
System Implementation
EWS
ICT Survey

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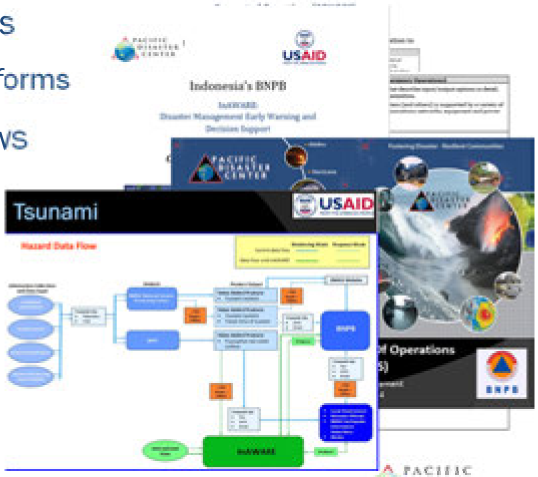
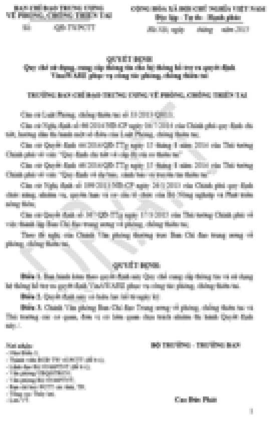
CONOPS Process

- Agency interviews
  - Data collection forms
- Legislative reviews
- CONOPS draft, review and socialize
- Put into practice


USAID
Indonesia's BNPB
InAWARE
Disaster Management Early Warning and Decision Support
PACIFIC DISASTER CENTER
Tsunami
Hazard Data Flow
BNPB
InAWARE
of Operations

Policy Framework

- Purpose
  - Authorize the use EWS by various stakeholders as outlined in the CONOPS
- Contents
  - Which agencies, what information, by what authorities and processes, how maintained & operated, etc.



Standard Operating Procedures (SOPs)

- Provides detailed, step-by-step instructions for using/operating EWS to support monitoring, alerting, decision making and response actions before, during and after a disaster.

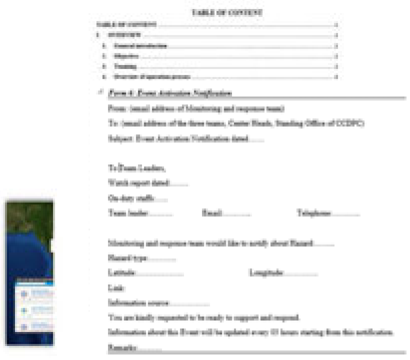


TABLE OF CONTENT

Form 4: Event Activation Notification

From: (email address of Monitoring and response team)

To: (email address of the three teams, Center Heads, Standing Office of CCDPC)

Subject: Event Activation Notification dated……

To Team Leaders,

Watch report dated……

On-duty staffs……

Team leader……　Email……　Telephone……

Monitoring and response team would like to notify about Hazard……

Hazard type……

Latitude……　Longitude……

Link:

Information source……

You are kindly requested to be ready to support and respond.

Information about this Event will be updated every 03 hours starting from this notification.

Remarks……

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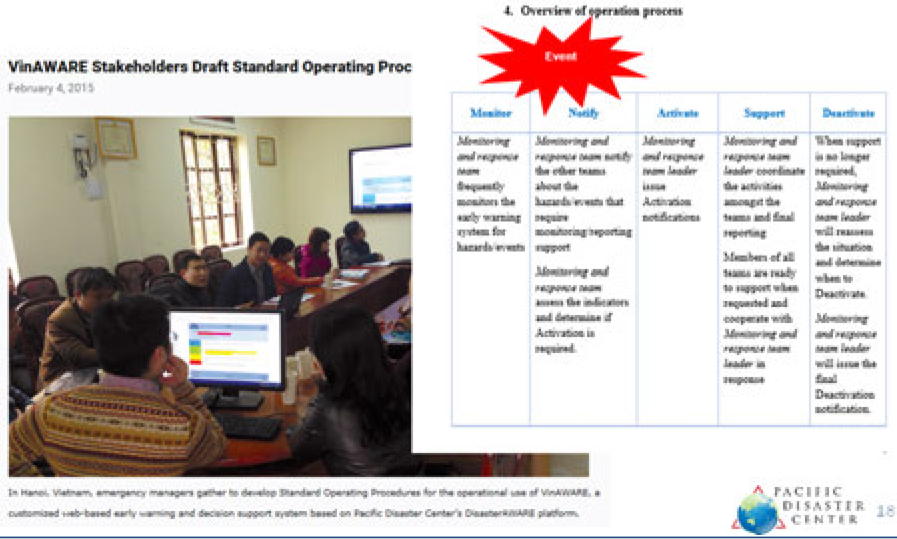
SOP Development



VinAWARE Stakeholders Draft Standard Operating Proc

February 4, 2015

In Hanoi, Vietnam, emergency managers gather to develop Standard Operating Procedures for the operational use of VinAWARE, a customized web-based early warning and decision support system based on Pacific Disaster Center's DisasterAWARE platform.

4. Overview of operation process

Monitor	Notify	Activate	Support	Deactivate
Monitoring and response team frequently monitors the early warning system for hazards/events	*Monitoring and response team* notify the other teams about the hazards/events that require monitoring/reporting support *Monitoring and response team* assess the indicators and determine if Activation is required.	*Monitoring and response team leader* issue Activation notifications	*Monitoring and response team leader* coordinate the activities amongst the teams and final reporting Members of all teams are ready to support when requested and cooperate with *Monitoring and response team leader* in response	When support is no longer required, *Monitoring and response team leader* will reassess the situation and determine when to Deactivate. *Monitoring and response team leader* will issue the final Deactivation notification.

Staffing Plans

- Key positions needed to operate and maintain the EWS
  - Description
  - Skills
  - Duties
  - Estimated Level of Effort

InAWARE St
Administrator
GIS and Hazard Information Analyst
Information Systems
Map Server

Training

- Purpose
  - Build skills and develop experience and confidence to use system during actual emergency
- Training Programs
  - User (Operator)
  - System Admin
  - Train-the-Trainer

AHA Centre Staff Trained on Upgraded Disaster Monitoring System

Exercise

- Test (and refine) EWS system components, SOPs, staffing plans (and skills)
- Annual or semi-annual
- Scenario-based
- Table-top (TTX) or Command Post (CPX)

FOB 1 – Moreton Bay Regional
MENTAWAI MEGATHRUST DR 2014
MENTAWAI MEGATHRUST
Padang

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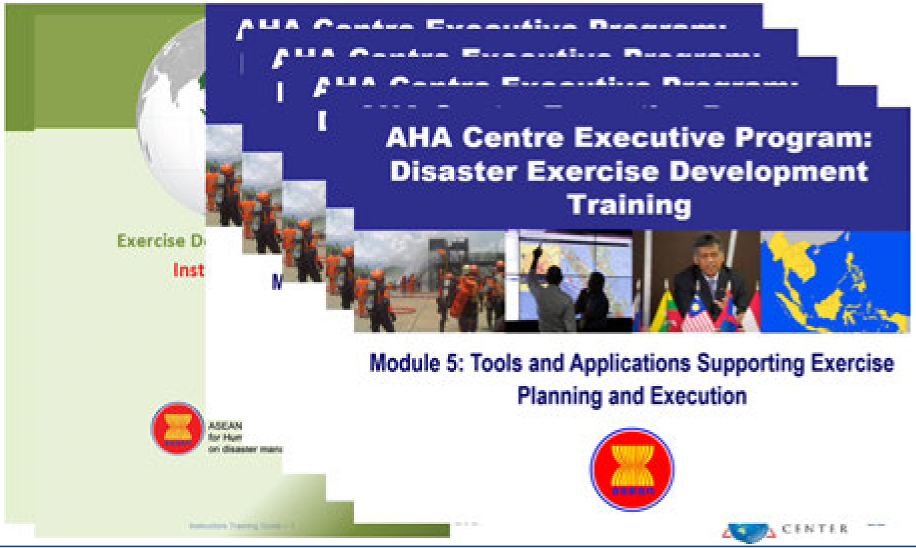
Exercise Development



AHA Centre Executive Program: Disaster Exercise Development Training

Module 5: Tools and Applications Supporting Exercise Planning and Execution

Operational Support and Maintenance

- System Upkeep
  - Hardware, software, communications, backup procedures, UPS, etc.
- Information Content
  - Baseline data, hazard data, imagery, etc.
- Human Resources
  - Staff turnover
  - Annual training and exercise
- Stakeholders/Partners
  - Outreach
  - Training

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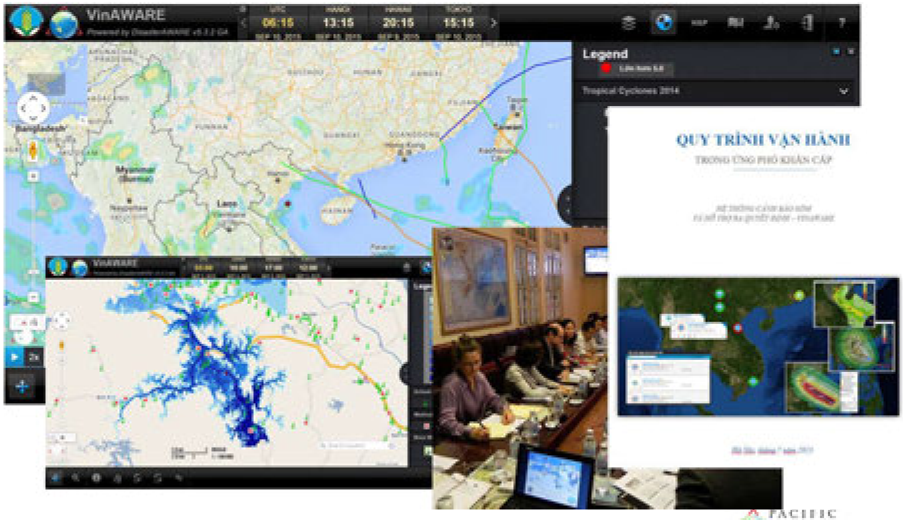
VinAWARE (Viet Nam)


VinAWARE
06:15
13:15
20:15
15:15
Legend
Tropical Cyclones 2014
QUY TRÌNH VẬN HÀNH

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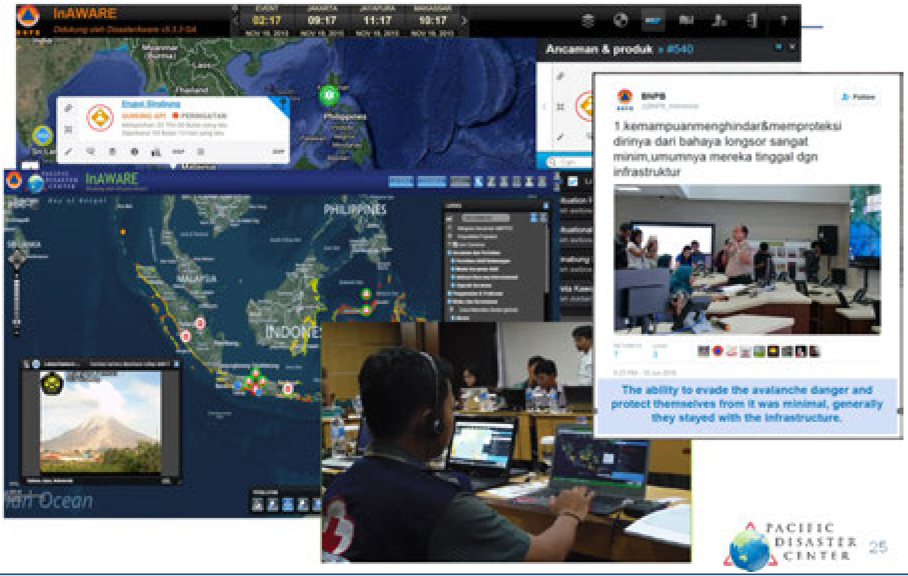
PACIFIC DISASTER CENTER

InAWARE (Indonesia)


InAWARE
Ancaman & produk
PHILIPPINES
MALAYSIA
INDONES
Ocean
BNPB

1 kemampuanmenghindar&memproteksi dirinya dari bahaya longsor sangat minim,umumnya mereka tinggal dgn infrastruktur

The ability to evade the avalanche danger and protect themselves from it was minimal, generally they stayed with the infrastructure.

Summary

- EWS is a scientific and technical capability …?

  - or -

- EWS in an institutional process …?

  - or -

- Both!

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Mahalo, Thank You, Cảm ơn!

Questions?

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