Better solutions.
Fewer disasters.
Safer world.

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Components and Implementation Strategies for Effective Hazard Monitoring and Early Warning

ASEAN Regional Technical Consultation on Aquatic Emergency Preparedness and Response Systems for Effective Management of Transboundary Disease Outbreaks in Southeast Asia

Bangkok, Thailand | 20-22 August 2018

Christopher Chiesa
Deputy Executive Director
www.pdc.org

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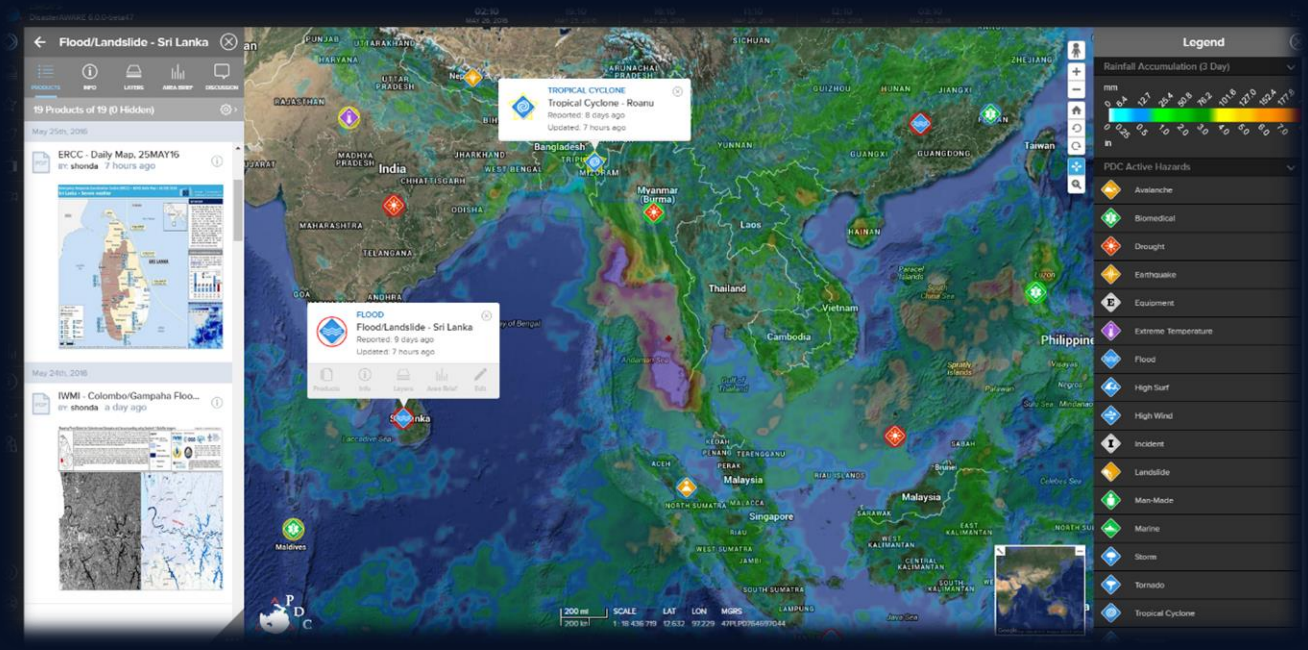
Outline

- PDC Introduction
- Early Warning and Decision Support
- DisasterAWARE™
- Implementation and Institutionalization Strategies



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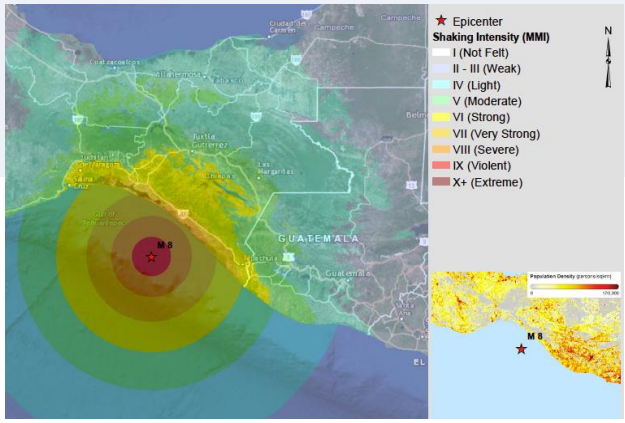
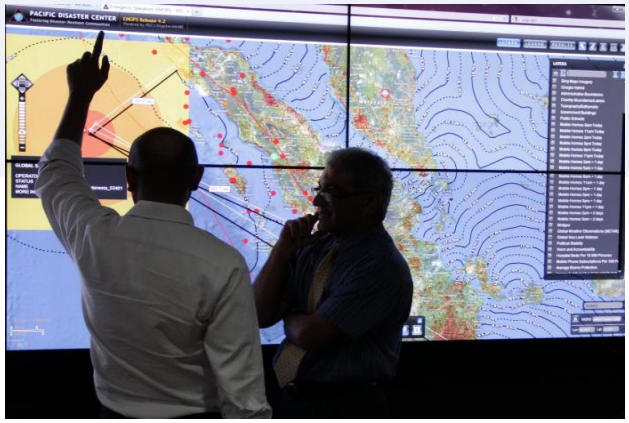
PDC In Brief

We apply science and technology to help …



executives and disaster managers worldwide make informed decisions to …



reduce risks and prepare for and respond to disasters

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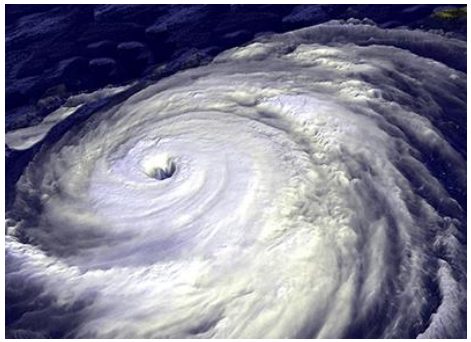
Origin of PDC



1992

Idea Conceived

A vision for a better future

Conceived by then-Senator Senator Daniel K. Inouye in the aftermath of Hurricane Iniki to the island of Kauai in Sept 11, 1992.

1995

Starts Operation

As a center to provide access to innovative technologies and more effective information resources for disaster preparedness and response.

Cooperative Agreement - 2001

Expands outside of Hawaii

2006

Managed by the University of Hawaii

TODAY

A global leader

PDC is now a global leader in the use of science and technology to advance disaster risk reduction (DRR).

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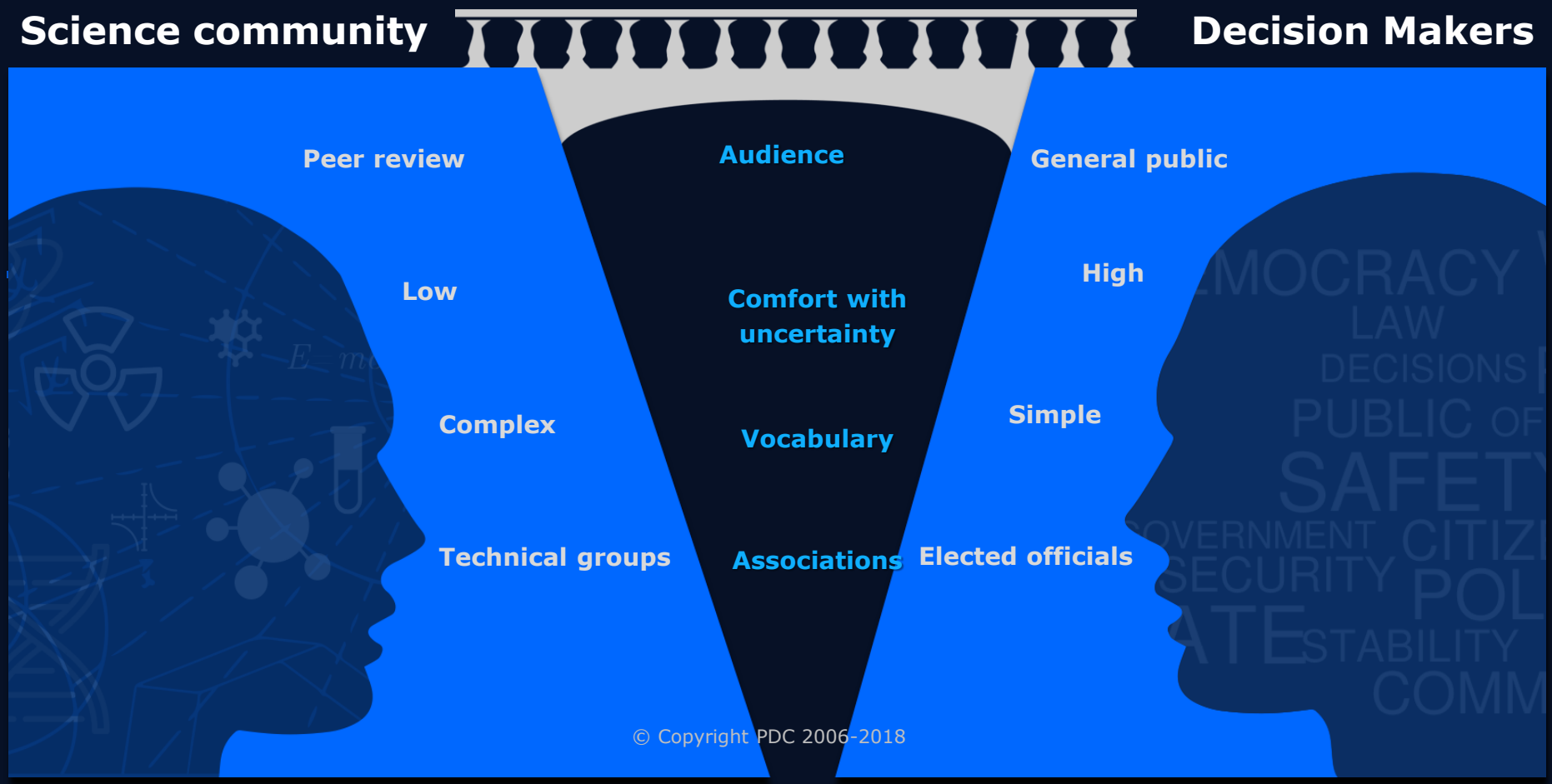
Building a bridge



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Who is using our systems?

A glance at our partners

We're working hand-in-hand with partners around the globe to reduce disaster risk, prevent losses, and protect the lives and livelihoods of millions of people.

United States

- FEMA
- US State Department (Global Operations Center, US Embassies, OFDA, USAID)
- DoD – Pentagon
- State Civil Defense & EOCs
- Other Federal and State agencies
- NGOs (Red Cross)

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Who is using our systems?

A glance at our partners

We're working hand-in-hand with partners around the globe to reduce disaster risk, prevent losses, and protect the lives and livelihoods of millions of people.

Over 1.7 million Users

Nations

- Thailand
- Indonesia
- Vietnam
- Myanmar
- Philippines
- Bahamas
- Peru
- El Salvador
- Cambodia
- Honduras
- Nicaragua
- Guatemala
- Dominican Republic
- Australia
- China
- Ecuador
- Brazil
- Fiji
- Palau
- Nepal
- Paraguay
- Japan
- Jamaica
- Bangladesh
- Haiti
- More…

International

- United Nations (IAEA, OCHA…)
- ASEAN (AHA Centre)
- CDEMA
- CEPREDENAC
- American Red Cross
- World Food Programme
- Salvation Army
- More…

Public

- International community
- Friends, family, etc.

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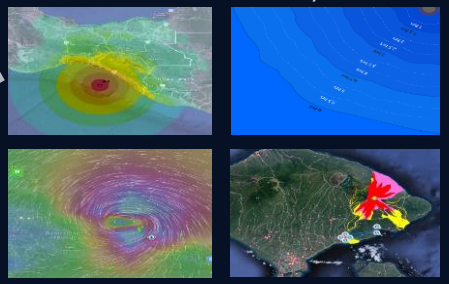
PDC’s integrated approach

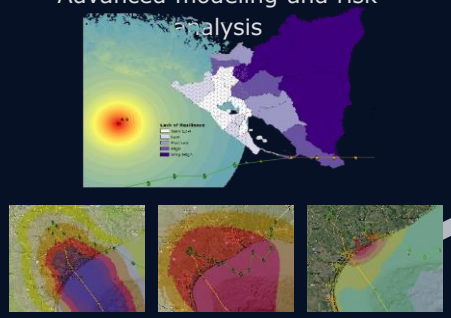
Observational and collection

GIS and visualization systems



Improved decision support capabilities

Advanced modeling and risk analysis



Computing and communication technologies

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Early Warning and Decision Making

Gaps and Challenges

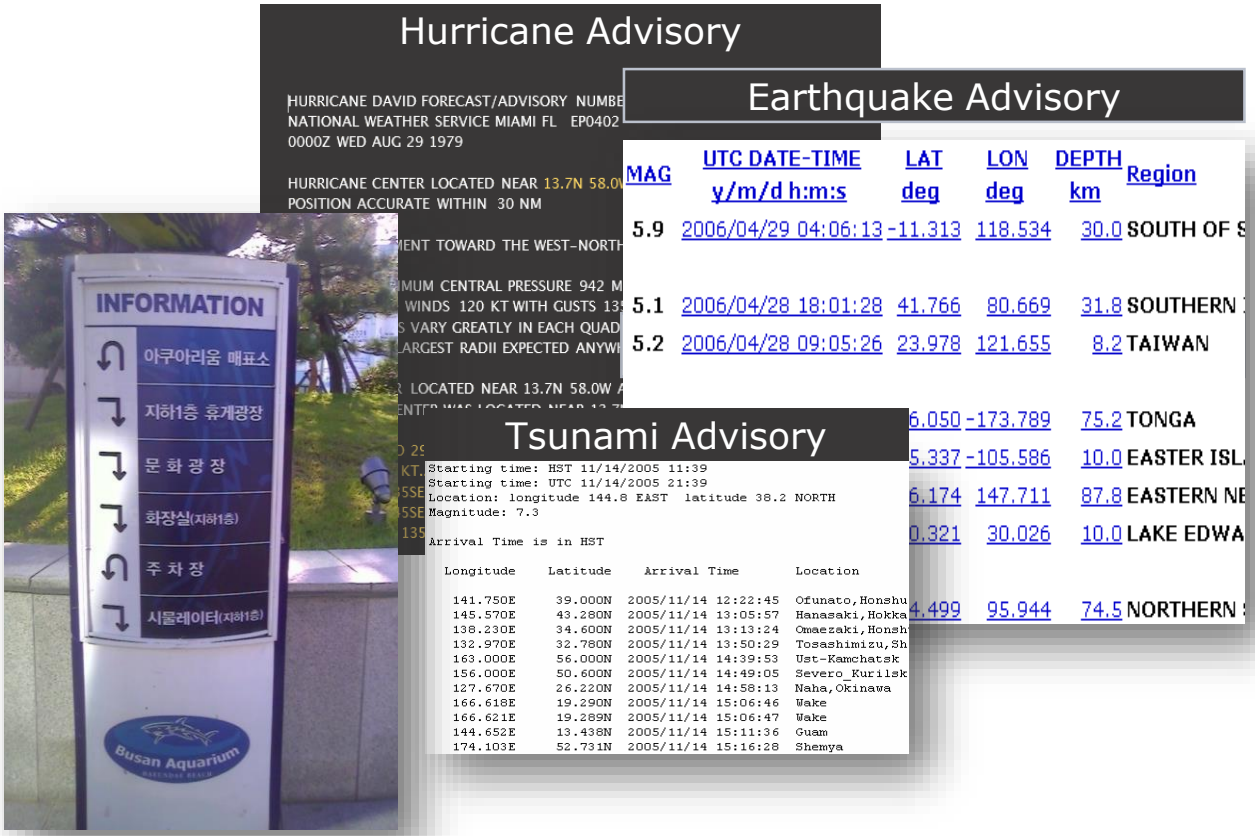
Inadequate information & tools

- Warnings are hard to digest
- Information is scattered
- Lack of situational awareness
- Dissemination is limited

Inadequate insights

- Risks are not understood

Information not easily understood isn't particularly useful…



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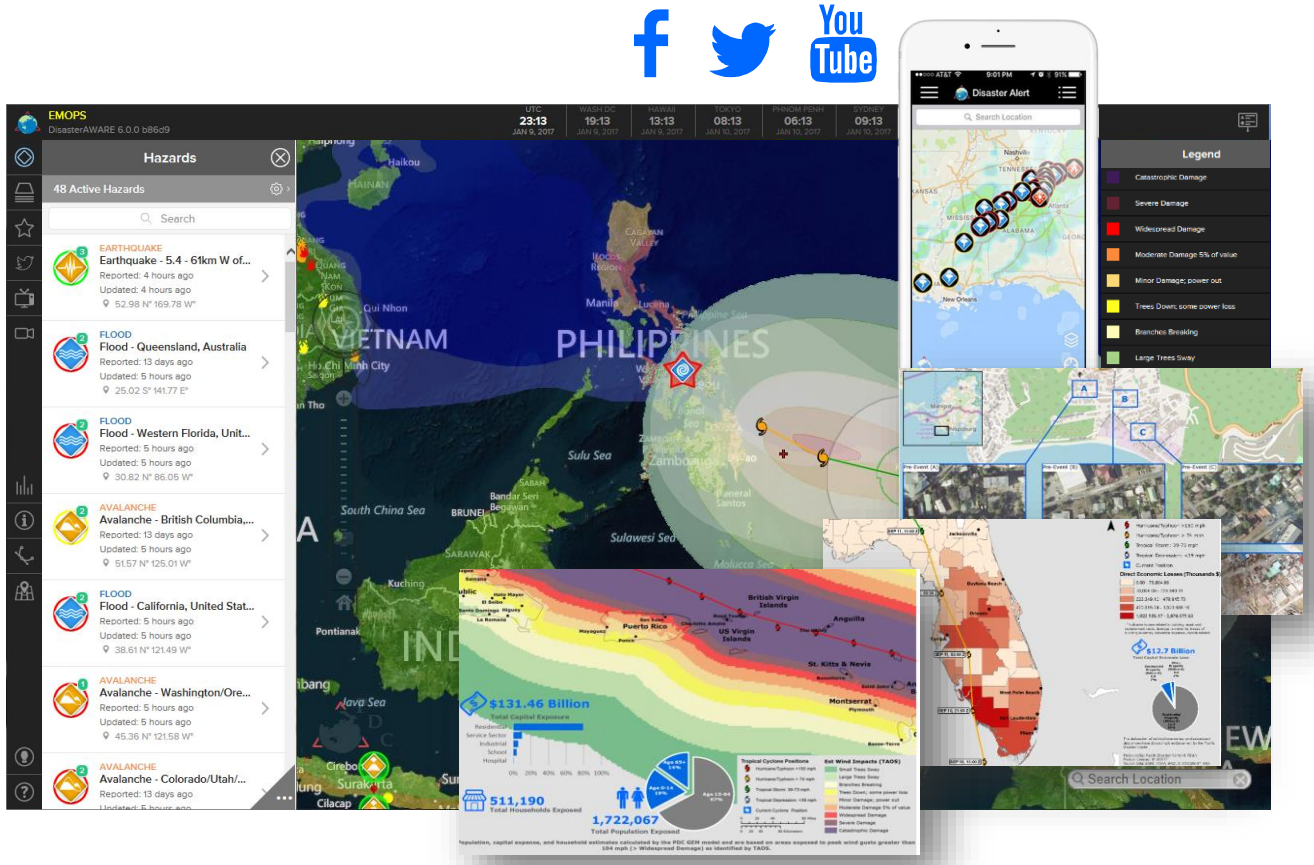
Overcoming Challenges

For Informed Decision Making

Tools for decision makers

- Simplify, automate, integrate
- Identify risks and exposure
- Estimated impacts
- Widely disseminate
- Updated assessments



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rAWARE™

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Key features

Content

- Hazard information real-time & historical
- Observations & forecasts
- Population data
- Infrastructure & Baseline data

Analytics / Sharing

- Integrated modeling
- Impact assessments
- Collaboration & SITREPS
- Bookmark sharing for geospatial layers

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rAWARE™

PDC | GLOBAL

Key features

Mobile

Touch friendly
for mobile device users

Offline mode for remote
areas or lost network

Alerting

In-app

email

sms

Telegram app

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DisasterAWARE™

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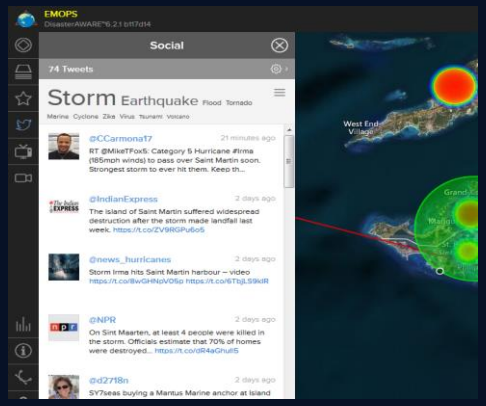
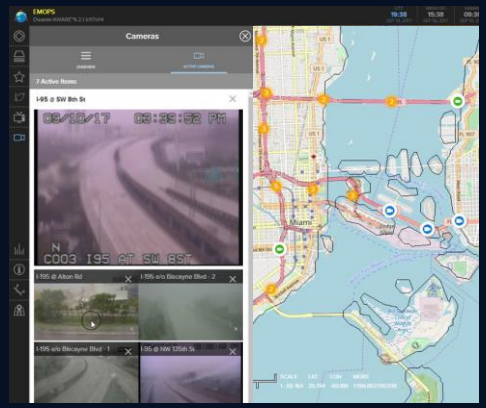
Key features

Social media updates



Live TV streaming

Live camera feeds



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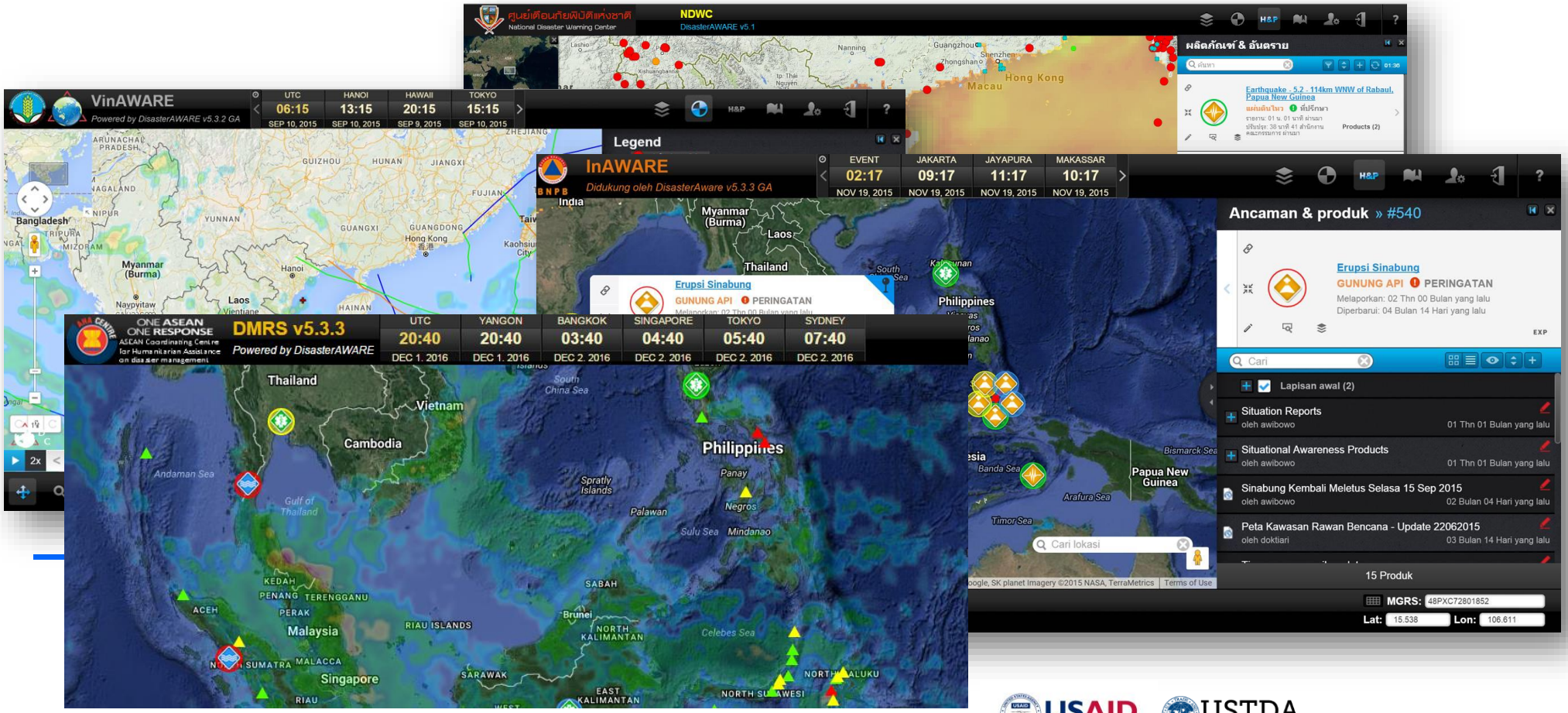
DisasterAWARE™ in SE Asia



USAID FROM THE AMERICAN PEOPLE

USTDA U.S. TRADE AND DEVELOPMENT AGENCY

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DisasterAWARE™ for Bio/Health

Foot and mouth disease, Myanmar

Information received on 07/08/2018 from Dr Ye Tun Win, Chief Veterinary Officer Director General, Livestock Breeding and Veterinary Department, Ministry of Livestock and Fisheries, Nay Pyi Taw, Myanmar

Summary

Report type	Follow-up report No. 1
Date of start of the event	13/05/2018
Date of confirmation of the event	24/05/2018
Report date	06/08/2018
Date submitted to OIE	07/08/2018
Reason for notification	Recurrence of a listed disease
Date of previous occurrence	06/02/2017
Manifestation of disease	Clinical disease
Causal agent	Foot and mouth disease virus
Serotype	O
Nature of diagnosis	Clinical, Laboratory (basic), Laboratory (advanced)
This event pertains to	a defined zone within the country
Related reports	Immediate notification (24/05/2018) Follow-up report No. 1 (06/08/2018)

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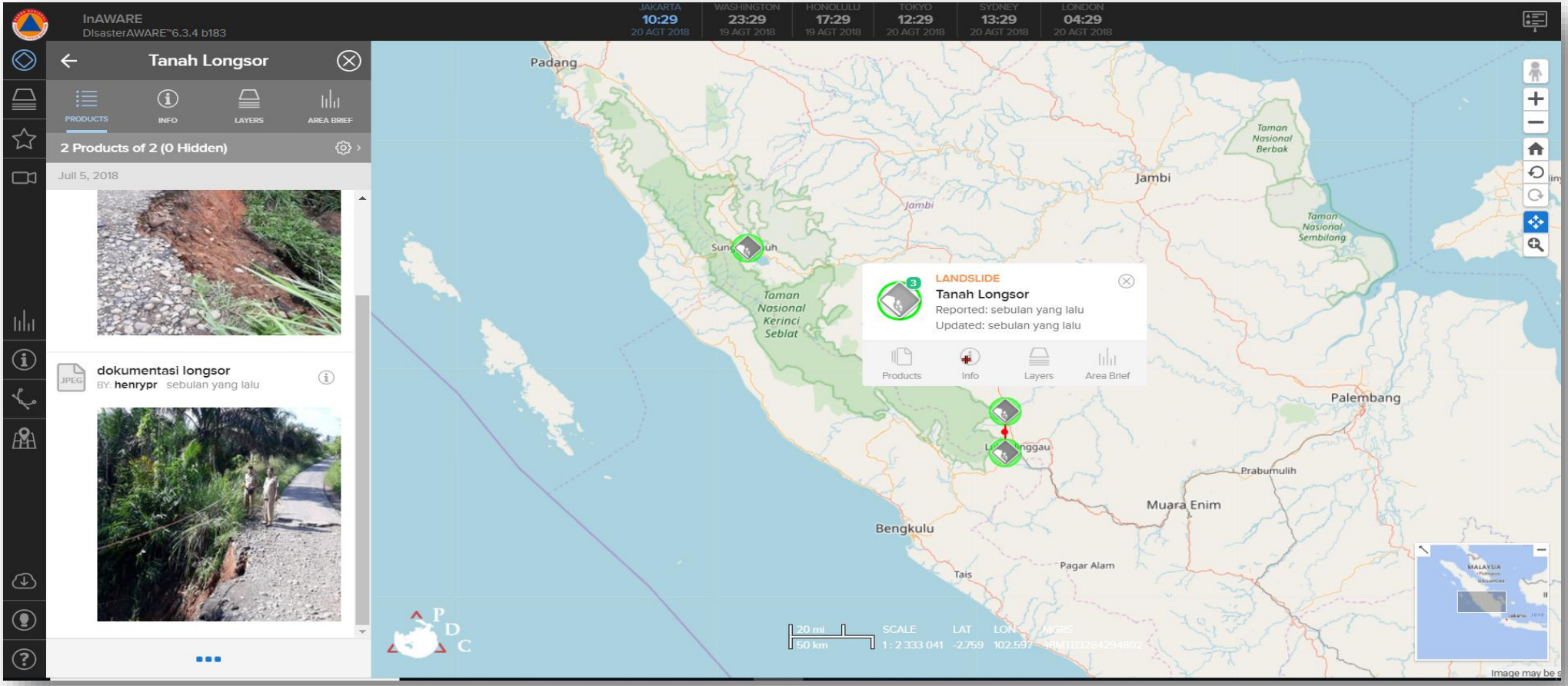
InAWARE™ in Action



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Institutionalizing EWS

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

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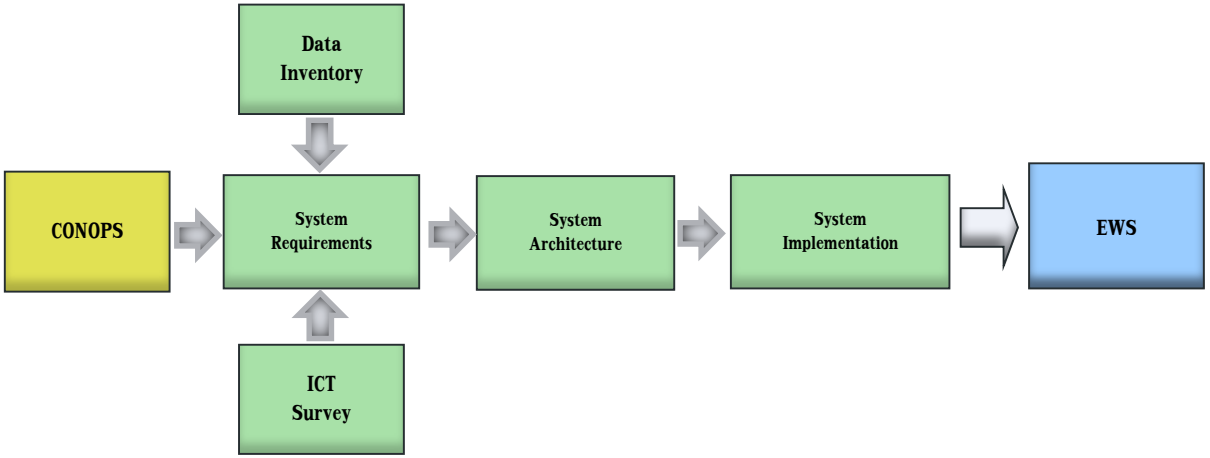
Concept of Operations

The Concept of Operations (CONOPS) provides guidance for the use of the early warning system (EW) within existing decision making context for natural hazard early warning and response.



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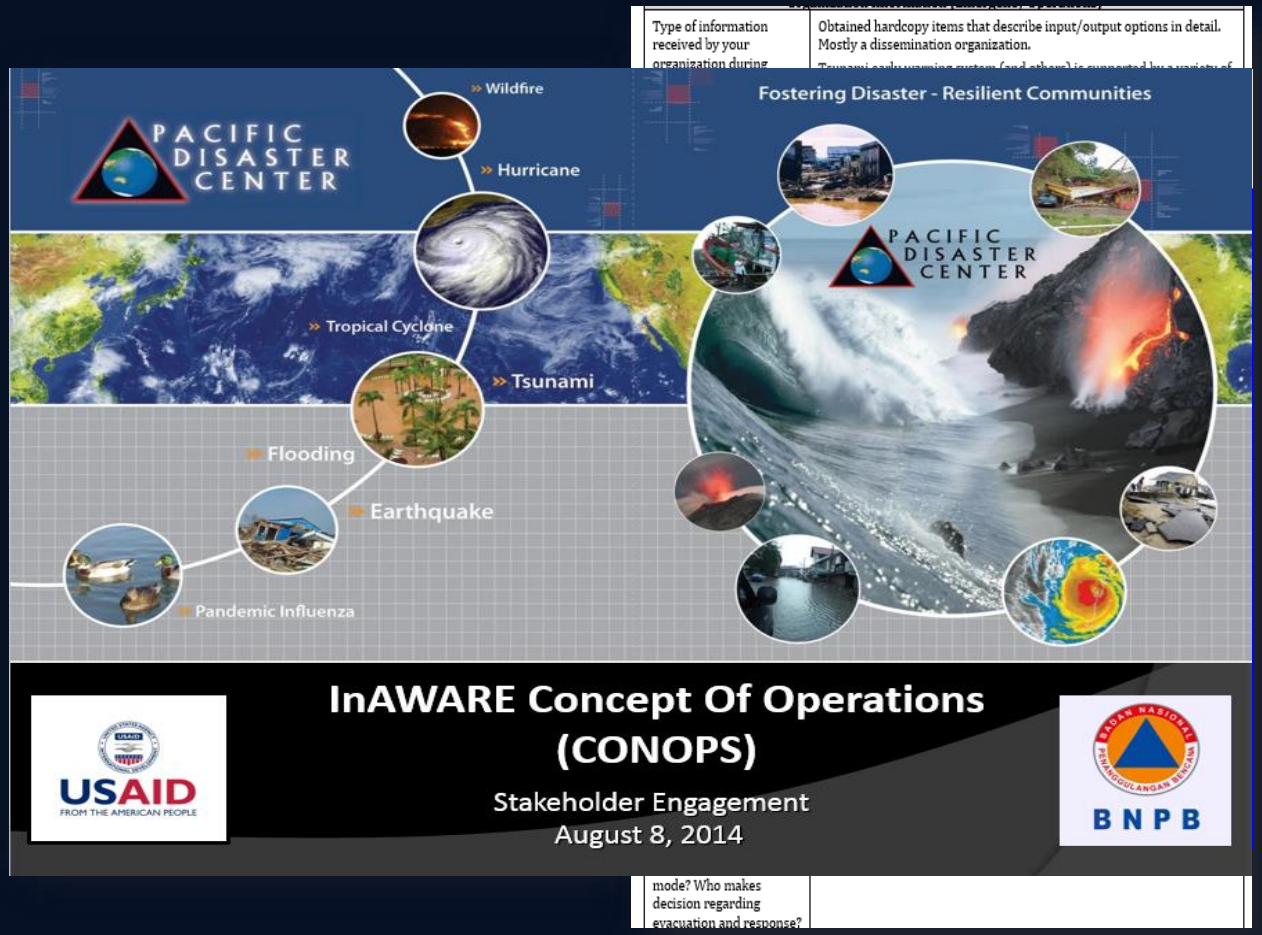
CONOPS Process

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



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Standard Operating Procedures

Standard Operating Procedures (SOPs) provide detailed, step-by-step instructions for using/operating EWS to support monitoring, alerting, decision making, and response actions before, during, and after a disaster.

Form 6: 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

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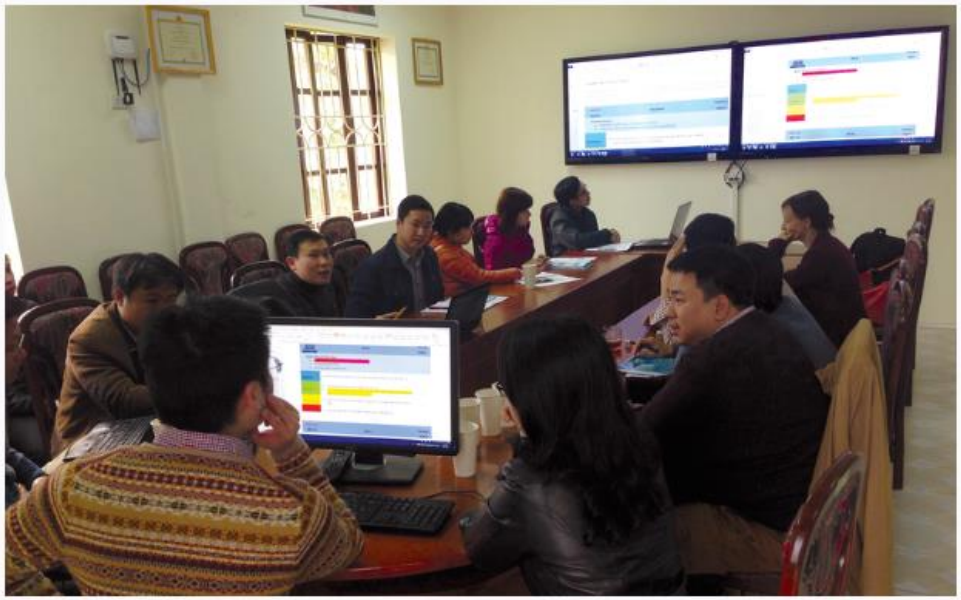
VinAWARE Stakeholders Draft Standard Operating Procedures

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

Event

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.

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Staffing Plans

Key positions needed to operate and maintain the EWS:

- **Description**
- **Skills**
- **Duties**
- **Estimated Level of Effort**

Role Title	**InAWARE Administrator**
Description of Role	The InAWARE Administrator will be responsible for overall operation of InAWARE and coordination of duties of other InAWARE team members. The InAWARE Administrator will proactively promote the user of InAWARE to qualified stakeholders and lead efforts to maintain existing information content and inclusion of new data and information. He or she will also ensure the timely and accurate administration of new user requests, as well as maintaining current users and user groups. The User Administrator will also act as a user services liaison.
Duties	• Lead the overall operation and management of InAWARE within BNPB; • Promote its appropriate use by disaster management partners and stakeholders in Vietnam; • Ensure that data layers and information content are up-to-date; • Seek opportunities to add new data to InAWARE; • Verify the proper functioning of InAWARE on a daily basis; • Ensure that Hazards are created according to established Standard Operating Procedures; • Add and manage new InAWARE users; • Maintain user list and user groups; • Respond to InAWARE site emails and user issues; and • Appropriately direct specific IT and Web system problems and performance issues to the relevant InAWARE team member for resolution.
Experience/Qualifications	• Basic computer skills
Level of Effort (LOE)	50%

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Training

Purpose

- Build skills and develop experience and confidence to use system during actual emergency

Training Programs

- User (Operator)
- System Admin

AHA Centre Staff Trained on Upgraded Disaster Monitoring System

August 14, 2015

PDC Southeast Asia Program Advisor presented training at the AHA Centre on the DMRS system, which is based on PDC's DisasterAWARE platform.

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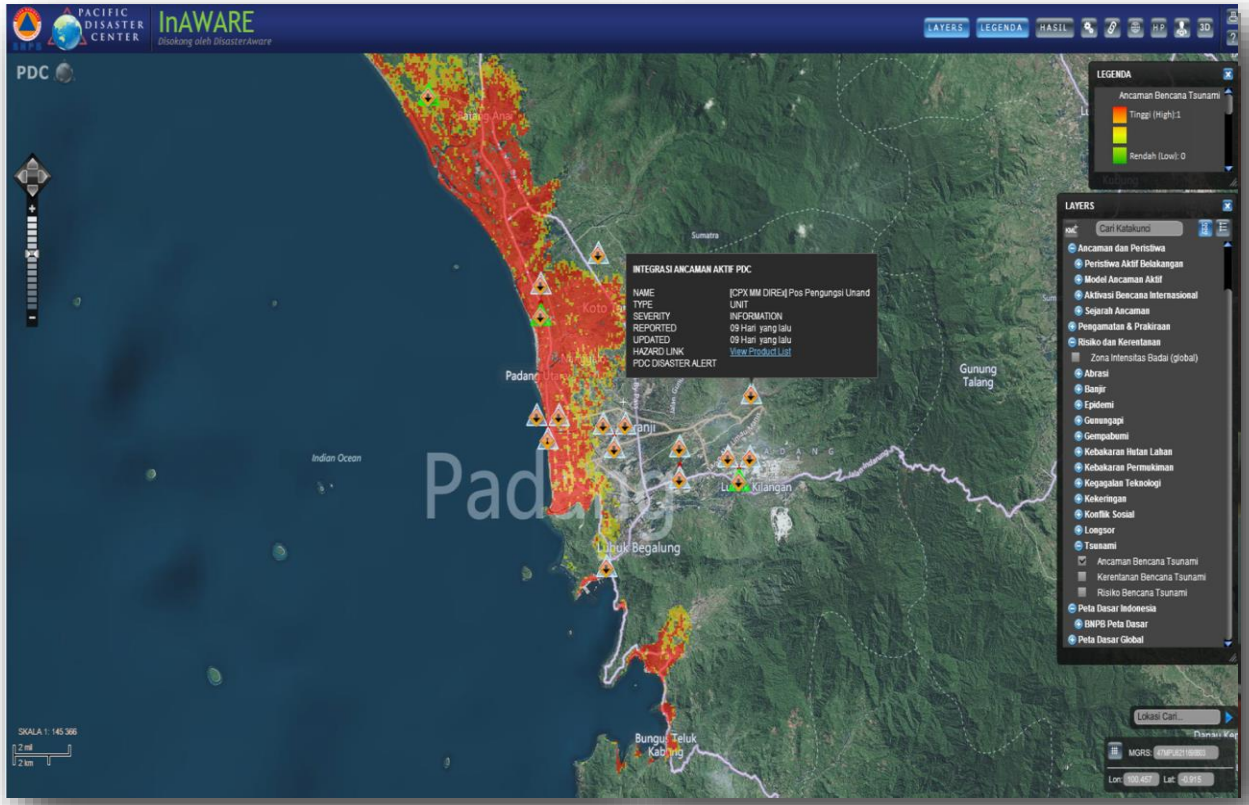
Exercise

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



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Operational Support

System Upkeep

- Hardware, software, communications, backup procedures, UPS, etc.

Information Content

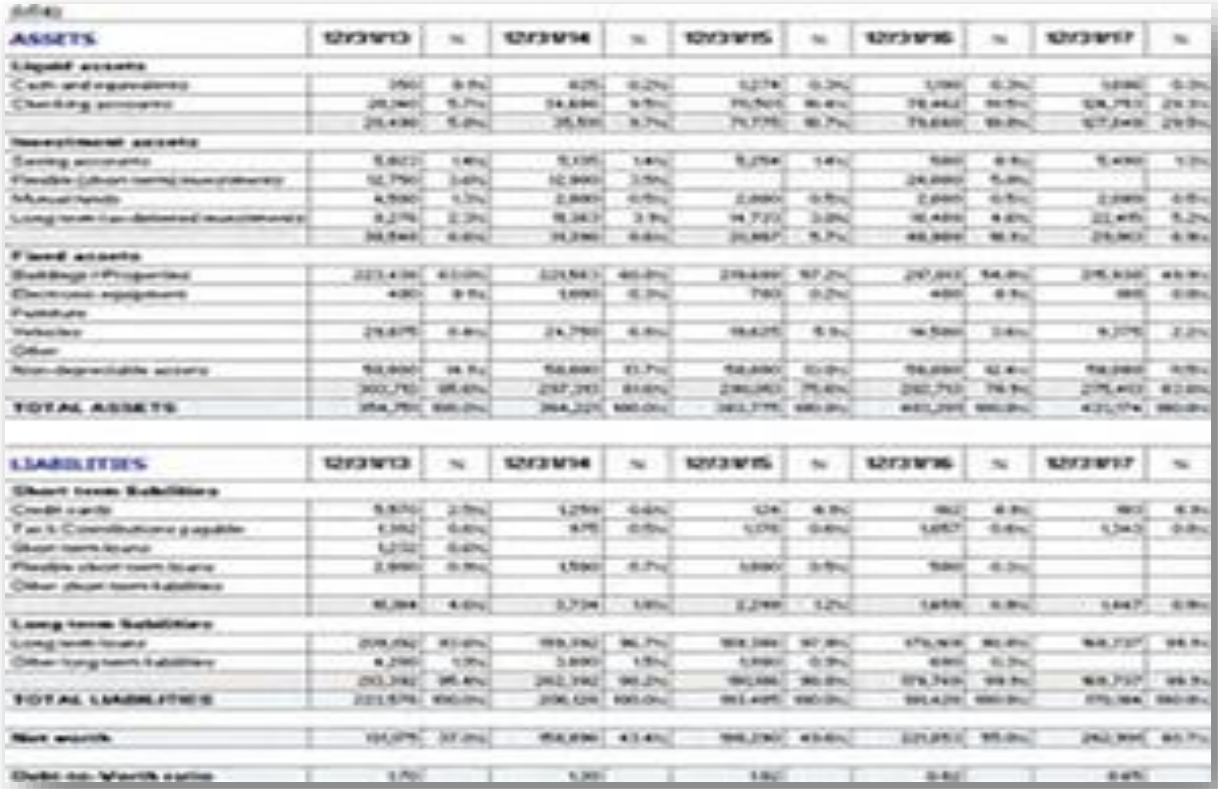
- Baseline data, hazard data, imagery, etc.

Human Resources

- Staff turnover
- Annual training and exercise

Stakeholders/Partners

- Outreach
- Training



ASSETS										
Liquid assets										
Cash and equivalents										
Checking accounts										
Investment assets										
Saving accounts										
Flexible (short term) investments										
Mutual funds										
Long term (un-delivered investments)										
Fixed assets										
Buildings / Properties										
Electronic equipment										
Furniture										
Vehicles										
Other										
Non-depreciable assets										
TOTAL ASSETS										

LIABILITIES										
Short term liabilities										
Credit cards										
Tax & Contributions payable										
Short term loans										
Flexible short term loans										
Other short term liabilities										
Long term liabilities										
Long term loans										
Other long term liabilities										
TOTAL LIABILITIES										
Net worth										
Debt-to-Worth ratio										

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Summary

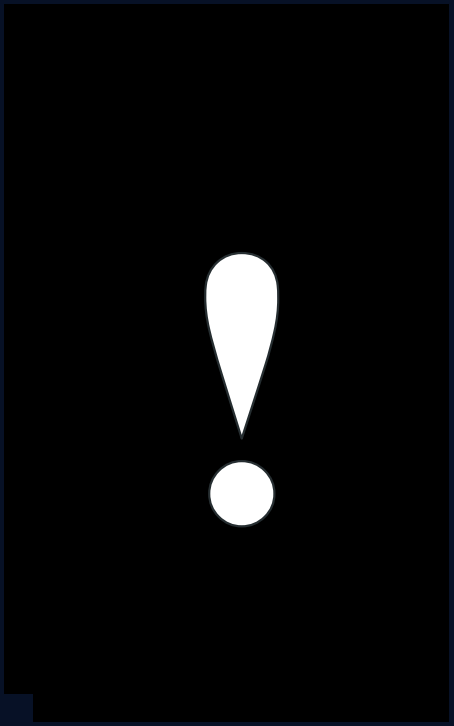
EWS is a scientific and technical capability …?

- or –

EWS in an institutional process …?

- or –

Both!



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Better solutions.
Fewer disasters.

Safer world.

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