

VinAWARE – An Early Warning and Decision Support Tool for Vietnam

UN-SPIDER Technical Advisory Support to Vietnam

Hanoi, May 9, 2016

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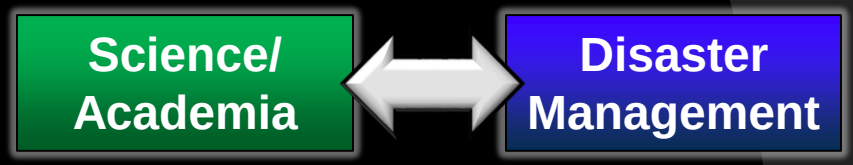
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Background

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- Working to bridge the gap between science/academia & disaster management practitioners through applied information research and evidence-based analysis.
- Currently managed by the University of Hawaii



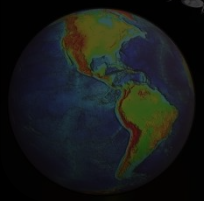


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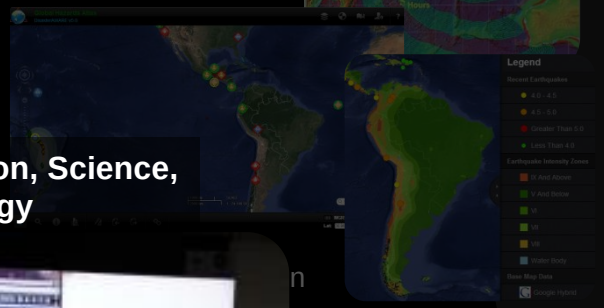
PDC's Integrated Approach

- Applied Science & Technology
- Capability Building
- Evidence-Based Information Products
  - Policy & Decision Makers
  - Disaster Managers
  - Planners
  - Humanitarian Assist. Missions







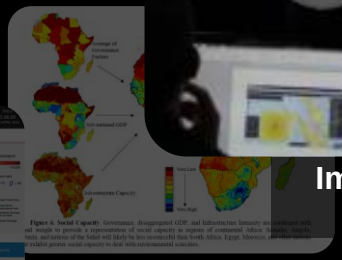


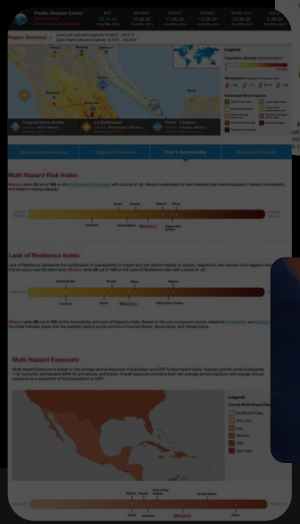
Integrating Information, Science, & Technology

Observation Systems & Data



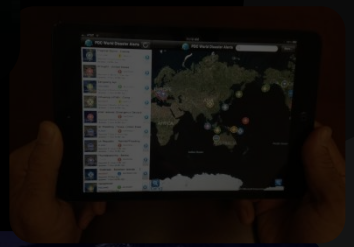
Improve Decision-support Capabilities



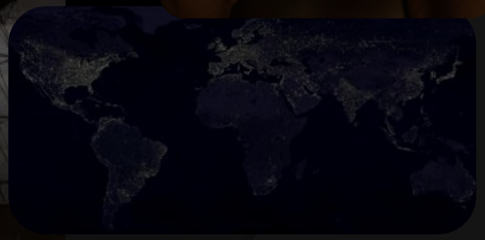


Advanced Applications, Models, Risk & Vulnerability Assessments









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DisasterAWARE Platform

- DisasterAWARE (**A**ll-hazard **W**arning, **A**nalysis and **R**isk **E**valuation)
  - An integrated platform providing situational awareness, decision support, and information exchange capabilities to disaster management decision makers.
- DisasterAWARE provides an interoperable platform that incorporates international best practice methodologies and technologies for data acquisition, hazard modeling, risk and vulnerability assessment, mapping, visualization, and communications.

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Applications

Disaster Alert

- Mobile applications for iOS and Android devices
- Real-Time Hazard Reporting
- Search: Disaster Alert (iTunes/Google Play)



Atlas

- Publicly accessible application
- Real-Time Hazard Reporting
- Basedata and Observations
- http://atlas.pdc.org/atlas/



EMOPS

- Used by State / Local / Foreign Disaster Practitioners
- Enhanced content and response operations
- Authorized users can add hazards & products
- http://emops.pdc.org/emops/



Custom

- Fee based custom applications
- Agency or region specific platform
- Customized content and response operations
- Examples: VinAWARE, InAWARE, DMRS, etc…



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PROJECT OVERVIEW

Flood Modeling and Early Warning Capacity Development Project Phase II

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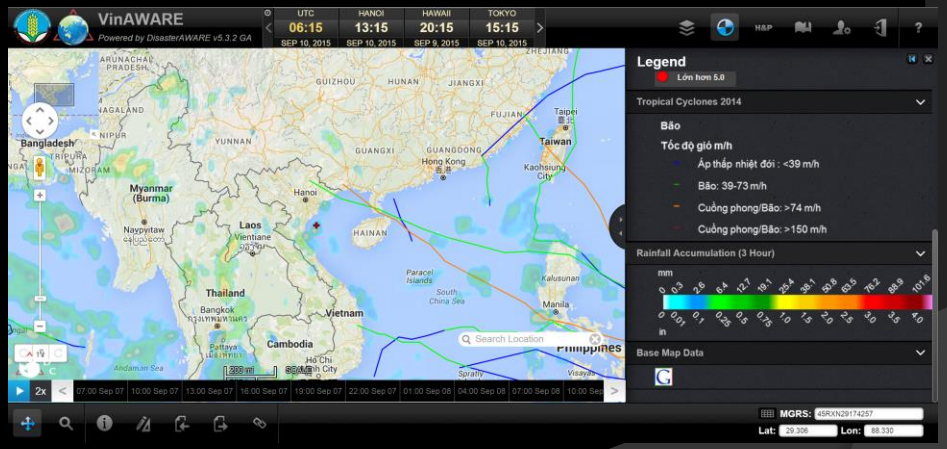
Flood Modeling and Early Warning Capacity Development Project Phase II

Objective:

To provide decision makers and disaster managers with accurate, near-real time hydro-meteorological (rainfall, river flood) data, in an easy-to-use, web-based application, with an emphasis on improving dam/reservoir monitoring and flood & storm early warning systems

Goals:

- Support GoV information systems to monitor dams/reservoirs;
- Communicate national hydro-meteorology data; and
- Strengthen warning systems downstream.



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Project Background

- 2005 Landslide Workshop (US-VN S&T)
- 2006-08 MOUs w/ CCFSC, MARD, WRU
- 2007 Phu Tho Flood Inundation Pilot Project
- 2009 PDC opens project office in WRU
- 2009-11 Support to World Bank NDRMP
  - Education & Training Program (100 officials)
  - Assessment of Post-Disaster Recovery
- 2010-11 USTDA MARD Flood Modeling & Early Warning Capacity Development Pilot Project, resulting in VinAWARE EW/DSS
- 2012-15 USAID MARD Flood Modeling & Early Warning Capacity Development Phase II

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Flood Modeling and Early Warning Capacity Development Project Phase II

Number of Direct Beneficiaries:

222 officials (182 officials and 40 non-governmental operators)

Number of Indirect Beneficiaries:

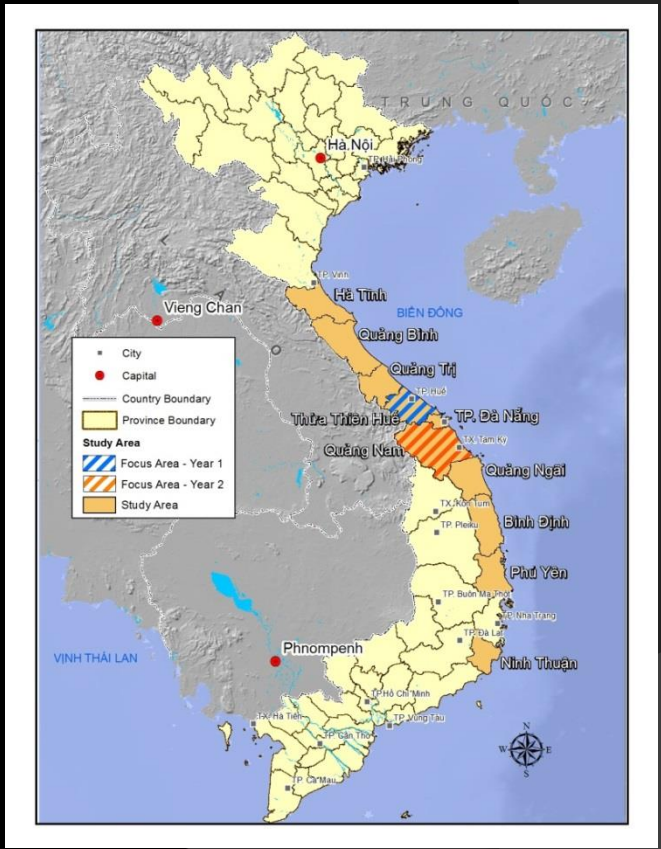
1.15-4.4M people in target provinces

10 Target Provinces/Cities:

Ha Tinh, Quang Binh, Quang Tri, Thua Thien- Hue, Danang, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, and Ninh Thuan.

Focal Area:

Thua Thien-Hue



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Partners

Funding

- USAID Office of Foreign Disaster Assistance (OFDA)

Targeted Beneficiaries and Stakeholders

- Ministry of Agriculture and Rural Development (MARD) / Disaster Management Center (DMC)
- Ministry of Natural Resources and Environment (MONRE) / National Center Hydro-Meteorological Forecasting (NCHMF)

Technical Implementation

- University of Hawaii (UH) / Pacific Disaster Center (PDC)

Implementation Partners

- Water Resources University (WRU)
- U.S. Army Corps of Engineers (USACE)
- GeoViet (VN)
- Bump (US)

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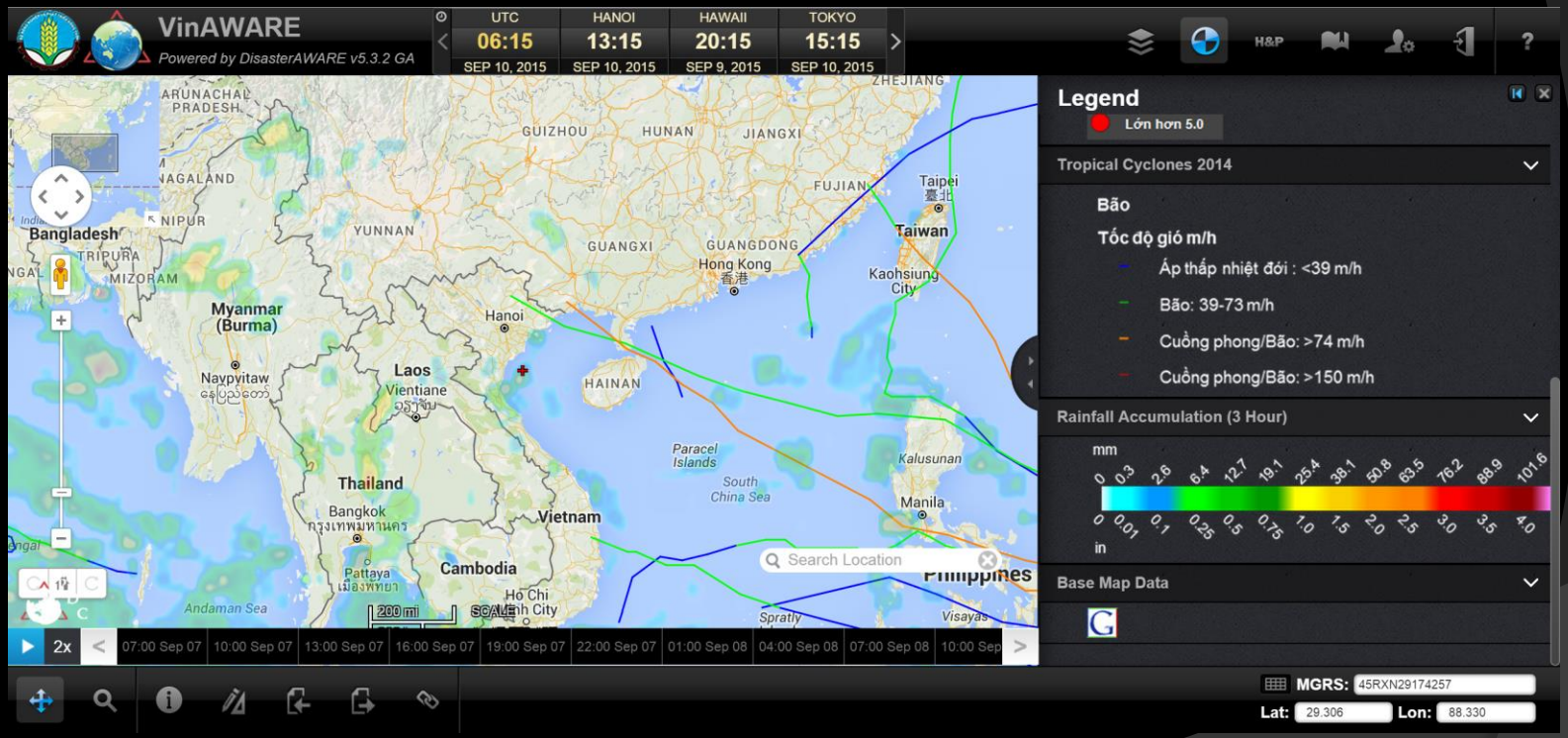
ACHIEVEMENTS

Flood Modeling and Early Warning Capacity Development Project Phase II

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VinAWARE Installation, Configuration and Deployment

August 2015



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Data Content Development

Incident Data	Information Source	Description
Tropical Cyclone	Joint Typhoon Warning Center (JTWC) and U.S. National Weather Service (NWS)	Provides storm location and forecast position for upcoming 96 hours; updated every six hours.
Tropical Cyclone	National Center for Hydro-meteorological Forecasting (NCHMF)	Provides storm location and forecast position up to 60 hours out, with maximum period of 3 hours between releases
Water Level Gauges (Flood)	National Center for Hydro-meteorological Forecasting (NCHMF)	River/water level and associated flood stage at stations throughout VN. Updated every 3–6 hours.
Rainfall Gauges	National Center for Hydro-meteorological Forecasting (NCHMF)	Reported accumulation in 6-hr increments at 01:00, 07:00, 13:00 and 19:00 daily
Forecast Water Level Gauges	National Center for Hydro-meteorological Forecasting (NCHMF)	Daily flood forecast bulletins produced during the storm season.
WRF Model – High Wind and Storm Forecasting	Weather Research and Forecasting (WRF) Model – University of Hawaii	Model-based, 72-hour wind and rainfall forecasts used to trigger district alerts if values exceed established thresholds. Updated every 24 hours.

Dynamic Data

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Data Content Development

Vietnam Base Map Data Layers		Global Base Map Data Layers
Vietnam Population and Housing Census *(General Statistics Office of Vietnam)* • Total commune population • Population density by province		Population Density *(Landscan)*
Thua Thien – Hue Province • Demographics • Infrastructure • Transportation • Hydrology • Administrative Boundaries • Land cover • Topography		Global Infrastructure *(Various)* • Roads • Seaports • Airports • Railroads • Nuclear Power Plants
Additional Provincial Datasets for; Quang Tri; Quang Ngai; Quang Nam; Quang Binh; Da Nang; Binh Dinh *(WB/National Disaster Risk Management Project, DSM, Provincial Authorities)*		Administrative Boundaries *(Various)*

Static Data

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Training

- December 2013
  - DHI MIKE Flood Modeling
  - (Hanoi)
- January 2014
  - Train-the-Trainer
  - (Hanoi)
  - User Training
  - (Hanoi and Danang)
- February 2014
  - Flood Model Applications for Preparedness & Planning
  - (Hanoi)



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Training

- May 2014
  - USACE Dam Safety Training (Hanoi)
- August 2014
  - Data Providers Workshop (Hanoi)
- September 2014
  - System Administration (Hanoi)





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Training

- October 2014
  - Train-the-Trainer
  - (Hanoi)
  - User Training
  - (Hanoi and Danang)

- January 2015
  - SOP Working Session
  - (Hanoi)

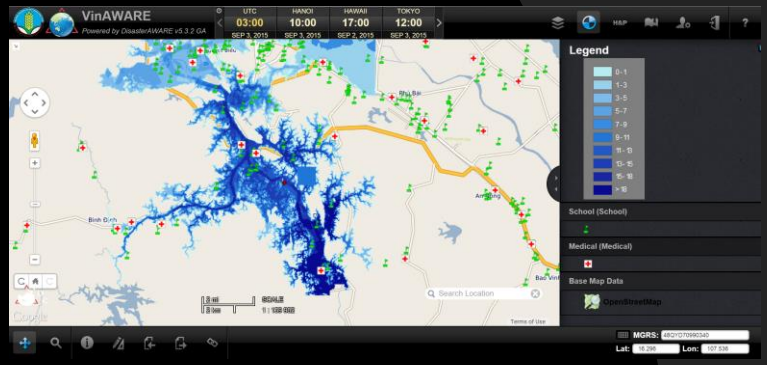






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Training



- March-April 2015

  Flood Risk Mapping Practicum (Hanoi)

  - March 2015

    DHI MIKE 11/21 Refresher (12 participants)

    Flood Model Application Working Session

  - March/April 2015

    Data Integration Working Session

  - April 2015

    Risk and Vulnerability Assessment Workshop including 2-day User Training

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Training in Numbers

Focal Area	Total Trained
Hanoi	132
Ha Tinh	8
Quang Binh	10
Quang Tri	9
Thua Thien-Hue	8
Danang	19
Quang Nam	9
Quang Ngai	9
Binh Dinh	10
Phu Yen	8
Ninh Thuan	10
Total	**232**

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Institutionalization

- Staffing Plan
- SOPs
- Policy Statement
- Data Sharing Agreements



QUY TRÌNH VẬN HÀNH

TRONG ỨNG PHÓ KHẨN CẤP

Kế Hoạc

Dự án Tăng cường

Thuộc Gói viện t

HỆ THỐNG (
VÀ HỖ TRỢ RA QU

CENTRAL COMMITTEE FOR
NATURAL DISASTER PREVENTION
AND CONTROL

No: /QĐ-TWPCTT

SOCIALIST REPUBLIC OF VIETNAM
Independence - Liberty - Happiness

Ha Noi, .../..../2015

DECISION

The Regulation on the use and provision of information for VinAWARE system to support decision making process in disaster management

CHAIRMAN OF THE CENTRAL COMMITTEE FOR NATURAL DISASTER PREVENTION AND CONTROL

to the Law on Natural Disaster Prevention and Control, No. ;

to the Decree No. 66/2014/ND-CP, dated 04/7/2014, of the Government guiding the implementation of some articles of the Law on Natural ntion and Control;

to the Decision 44/2014/QD-TTg, dated 15/08/2014, of the Prime e "Defining details on disaster risk category";

to the Decision 46/2014/QD-TTg, dated 15/08/2014, of the Prime e "Regulation on disaster forecasting, warning and communication";

to the Decree No. 199/2013/ND-CP, dated 26/01/2013, of the ipulating the functions, tasks, powers and organizational structure of the riculture and Rural Development;

to the Decision No. 367/QD-TTg, dated 03/17/2015, of the Prime the establishment of the Central Committee for Natural Disaster l Control (CCNDPC);

equest of the Head of Standing Office of the Central Committee for er Prevention and Control,

DECIDE:

1. Issue together with this Decision the Regulation on the use and nformation for VinAWARE system to support decision making process nagement.

. This decision takes effect from the date of signing.

). The Head of Standing Office of the Central Committee for Natural ntion and Control and Heads of concerned agencies are responsible for this Decision. /.

BỘ NÔNG NGHIỆP
VÀ PHÁT TRIỂN NÔNG THÔN
TỔNG CỤC THỦY LỢI

BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG
TRUNG TÂM KHÍ TƯỢNG
THỦY VĂN QUỐC GIA

BIÊN BẢN THỎA THUẬN

GIỮA

TỔNG CỤC THỦY LỢI

VÀ

TRUNG TÂM KHÍ TƯỢNG THỦY VĂN QUỐC GIA

TRIỂN KHAI

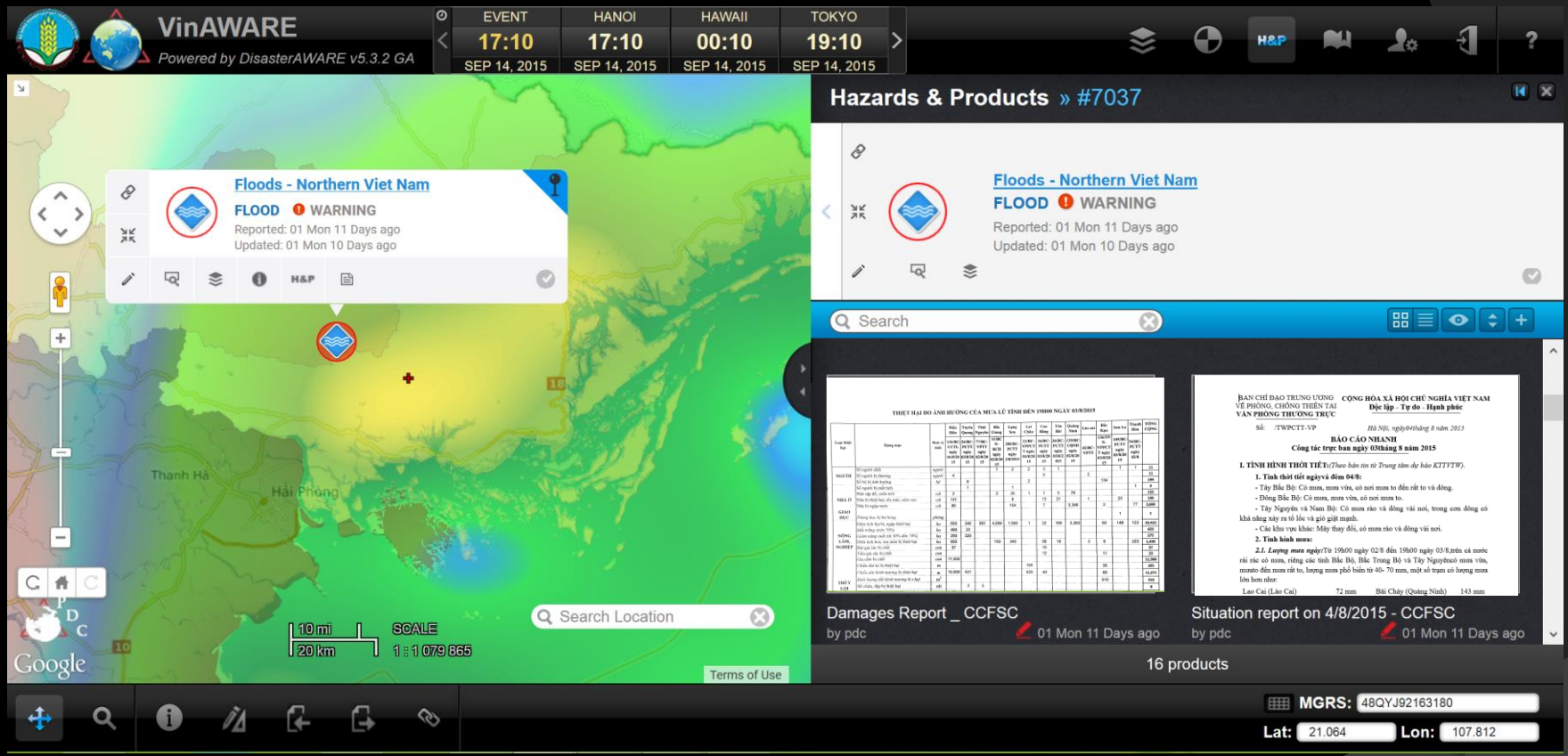
DỰ ÁN "TĂNG CƯỜNG NĂNG LỰC
CẢNH BÁO SỚM LŨ LỤT GIAI ĐOẠN 2"

(do Cơ quan Hỗ trợ Phát triển Quốc tế Hoa Kỳ (USAID) tài trợ)

Hà Nội, 2013

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VinAWARE in Action



Northern Vietnam Flooding
August 2015

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Phase III

Next Steps?

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"Fostering Disaster-Resilient Communities"

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