Chengdu Forum on UN-GGIM
Global Map for Sustainable Development:
Development and Applications in Urban Hazard Mapping
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Hazard Detection, Monitoring, Modeling, Assessment and Warning in the Asia Pacific Region

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Avoid Hazards => Disasters => Crises

- **Vision:** *Safer & More Secure World*
  - Sustainable communities, safer nations, and a more secure world through Disaster Risk Reducing

- **Goal:** *Disaster Resiliency*
  - Foster disaster-resilient communities through information, science, technology, and exchange

- **Mission:** *Reduce Disaster Risks*
  - Provide applied information research and evidence-base analysis supporting development of more effective disaster risk reduction (DRR) policies and practices; and applications and information products supporting Humanitarian Assistance and Disaster Relief (HA/DR) operators and practitioners in the Asia Pacific region and beyond.

Asia Pacific:
- 38% of World’s Disasters
- 80% of World’s Casualties

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Became Operational in 1996
- Currently Managed by University of Hawaii
60% Public funds, 40% Proposals/Grants
About 45 full time staff and contractors
- Offices
  - Hawaii: Maui and Oahu
  - Washington DC, Colorado Springs, Miami, SE Asia
- Experts:
  - Disaster Management Scientists
  - Geospatial Data and Visualization Experts & Analysts
  - Information System Engineers & Technologies Experts
  - Modeling, Simulation, and Impact Assessment Specialists; Public Health SME
PDC’s Integrated Approach

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

Observation Systems, Data Collection
Integrating Information, Science, Technology
GIS, Visualization and Display Systems
Advanced Applications, Models, Risk & Vulnerability Assessment

Improve Decision-Support Capabilities
Communication Systems and Networks
DM Challenges & Gaps ...

- Inadequate Tools for the **Decision Makers**
  - Information is Scattered
  - Warnings are Hard to Quickly Digest
  - Lack Situational Awareness
  - No Risk Context
  - Dissemination is Limited

- Time is **LIFE**
  - Information not easily understood isn’t particularly useful ....
Overcoming Challenges

Tools for Decision Makers
- Simplify, Integrate, & Expedite Processing
- Understand Exposure
- Disseminate Early Warning
- Support Decisions Based on Latest Assessments

Info for Policy Makers & Planners
- Assess Socio-Econ Risks & Vulnerabilities

Capacity for Practitioners
- Training & Exercise
- Workshops
Hazard Detection and Modeling
Automated Hazards

- Dynamic Data Processing and Publication
  - Earthquakes
  - Tsunamis
  - Tropical Cyclones
  - Wildfires
  - Volcanoes
  - Floods

- Stored in Enterprise Geospatial Database
- Published as standards-based Map Services
- Consumed in Web & Mobile Apps, Social Media, Plug-in Widget
Hazard Modeling Capabilities

- **Floods / Dam Failures**
  - “MIKE 11/21” (DHI, inc.)

- **Hurricanes**
  - “CATS” (DTRA)
  - “TAOS” (KA Corp)

- **Earthquakes**
  - “ShakeMap” (USGS)
  - “HAZUS-MH” (DHS/FEMA)

- **Tsunamis**
  - “TTT” (NOAA)

- **Plume Modeling**
  - “HPAC” (DTRA)
Disaster Assessment, Monitoring and Warning
DisasterAWARE

- Integrated Multi-hazard Hazard Monitoring
- Disaster Early Warning
- Automated / Integrated Modeling
- Exposure (Risk) Maps & Historical Hazard data
- Customized Impact Modeling AND
- Intra-Agency Info Sharing
  - User-provided Situation Reports
  - Damage Assessment
- Wide Dissemination
  - Web
  - Social Media
  - Mobile Apps

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May 10, 2010
PDC Global Hazards Atlas

http://www.pdc.org/atlas
### Subscription Service

- **Please select from the following services:**

  - **Tropical Cyclone Coordination Worksheet (TCCW)**
    
    TCCWs are based on information from NWS storm advisories, plus calculations of the closest approaches to key cities in Hawaii and predicted times of arrival.

  - **EVENT_CYCLONE_WARNING**
    
    Hazard subscription for Tropical Cyclone Event at the Warning severity level.

    **Method(s):**
    - ✔ E-mail

    **Region(s):**
    - □ Atlantic
    - □ Hawaii
    - □ Indian
    - □ Pacific

    Note: If no regions are selected then the entire world is used for the method(s).

  - **EVENT_CYCLONE_WATCH**
    
    Hazard subscription for Tropical Cyclone Event at the Watch severity level.

    **Method(s):**
    - □ E-mail

    **Region(s):**
    - □ Atlantic
    - □ Hawaii
    - □ Indian
    - □ Pacific

    Note: If no regions are selected then the entire world is used for the method(s).
Mobile Public Disaster Alert Application

- *Disaster Alert* provides a listing and an interactive map of Active Hazards occurring around the globe.
- Available for **Android** and **iPhone** via the Android Market and iTunes on-line stores.

Interactive map  |  Hazards list  |  Details of an event
AP Regional Deployments
Thailand NDWC (2006)
Vietnam DMC (2010)
ASEAN AHA Centre (2012)
Indonesia BNPB (2013, planned)
UN OCHA ROAP (Bangkok)

New Guide
• Published April 2013

Resources:
• Regulatory Actions
• Humanitarian Actors
• Int’l Coordination Mechanisms

Tools & Services
• Satellite imagery
• Mapping data
• Assessment tools
• Preparedness planning
• Warning systems

Google “OCHA ROAP disaster response guide”
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Fostering Disaster-Resilient Communities

For more Information:
http://www.pdc.org

Follow us on: DisasterAWARE

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