



Regional Component of IN-MHEWS and Impact-based Forecasting

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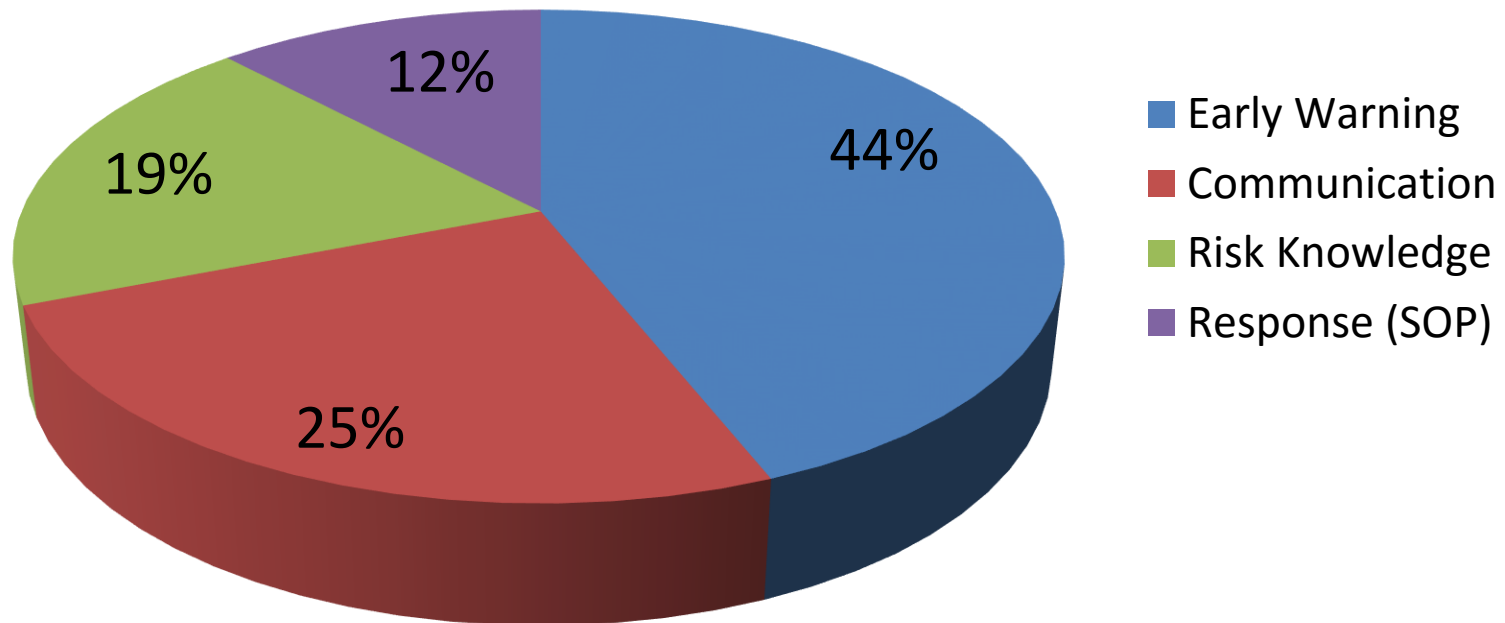
ESCAP Resolution 71/12

Strengthening Regional Cooperation Mechanism for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Asia and the Pacific

- 1. ...deepening existing regional cooperation mechanisms such as the ESCAP/WMO Typhoon Committee, the WMO/ESCAP Panel on Tropical Cyclones***
- 1. ..replenishing ESCAP Multi-donor's Trust Fund on Tsunami, Disaster and Climate Preparedness***

ESCAP Multi-donor Trust Fund Tsunami, Disaster and Climate Preparedness

Thematic Areas - \$15 million allocated

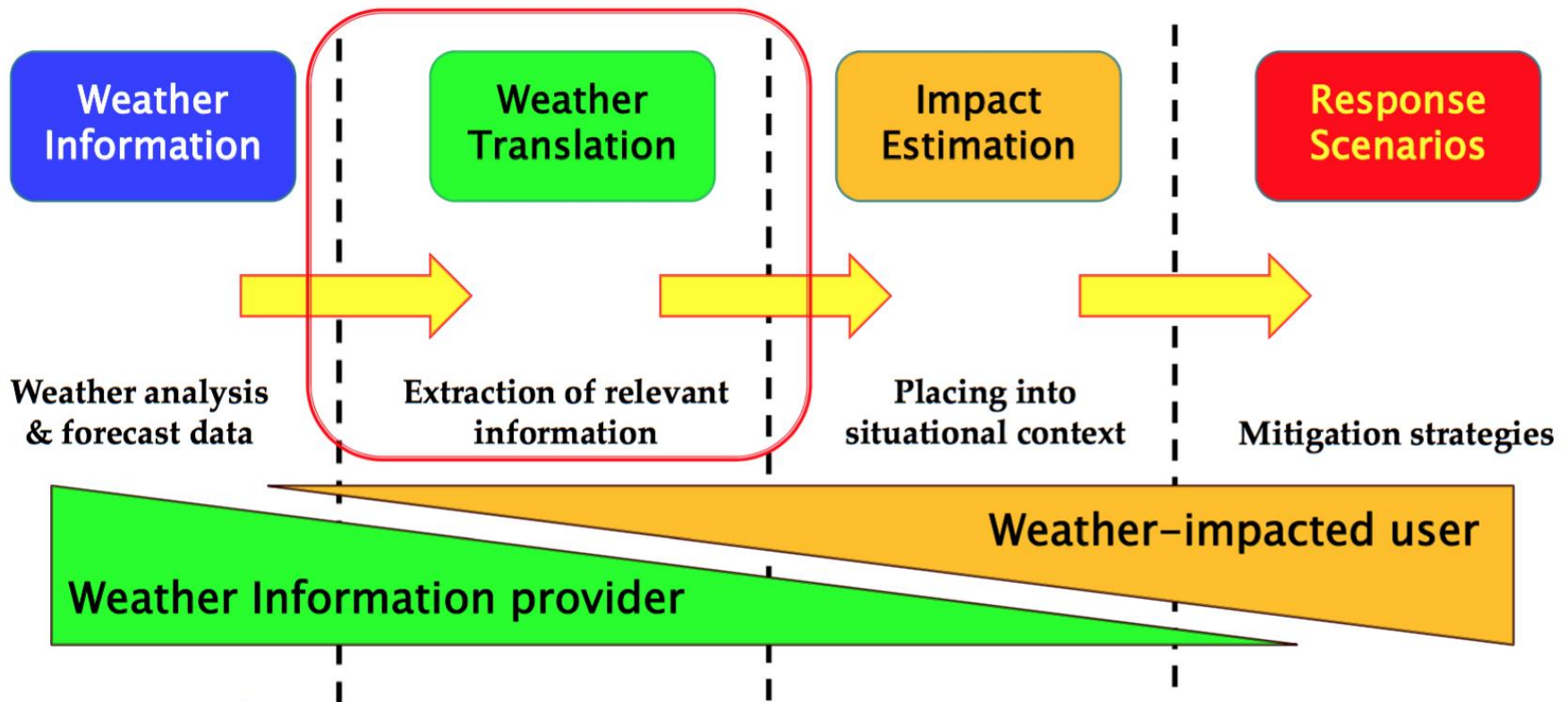


New Strategic Plan 2017-2020:

- Programme Approach aligned with SFDR,
- Impact based forecasting, climate risk management approach..

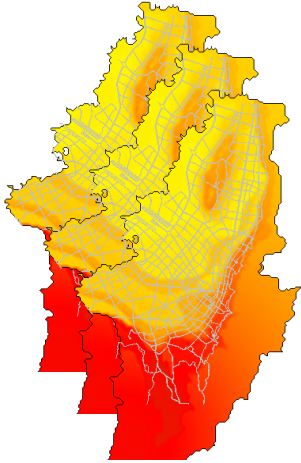
Impact-based Forecasting

Integrating hazard with vulnerability and exposure for impact-based forecasting

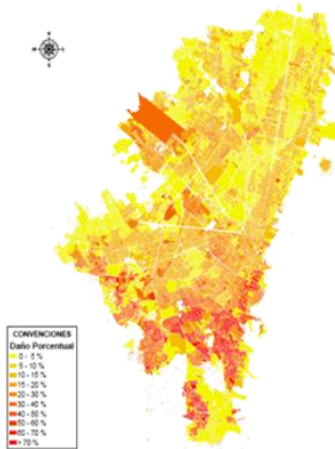


Key Essentials for Impact based Forecasting Translating hazard information into impact scenarios

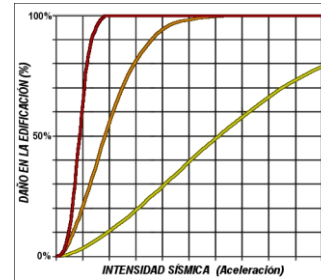
Hazard



Exposure



Vulnerability



Impact/Risk



Value at Risk

Statistical - census and survey data

GIS/Geospatial– Infrastructure, settlements, land use..

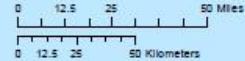
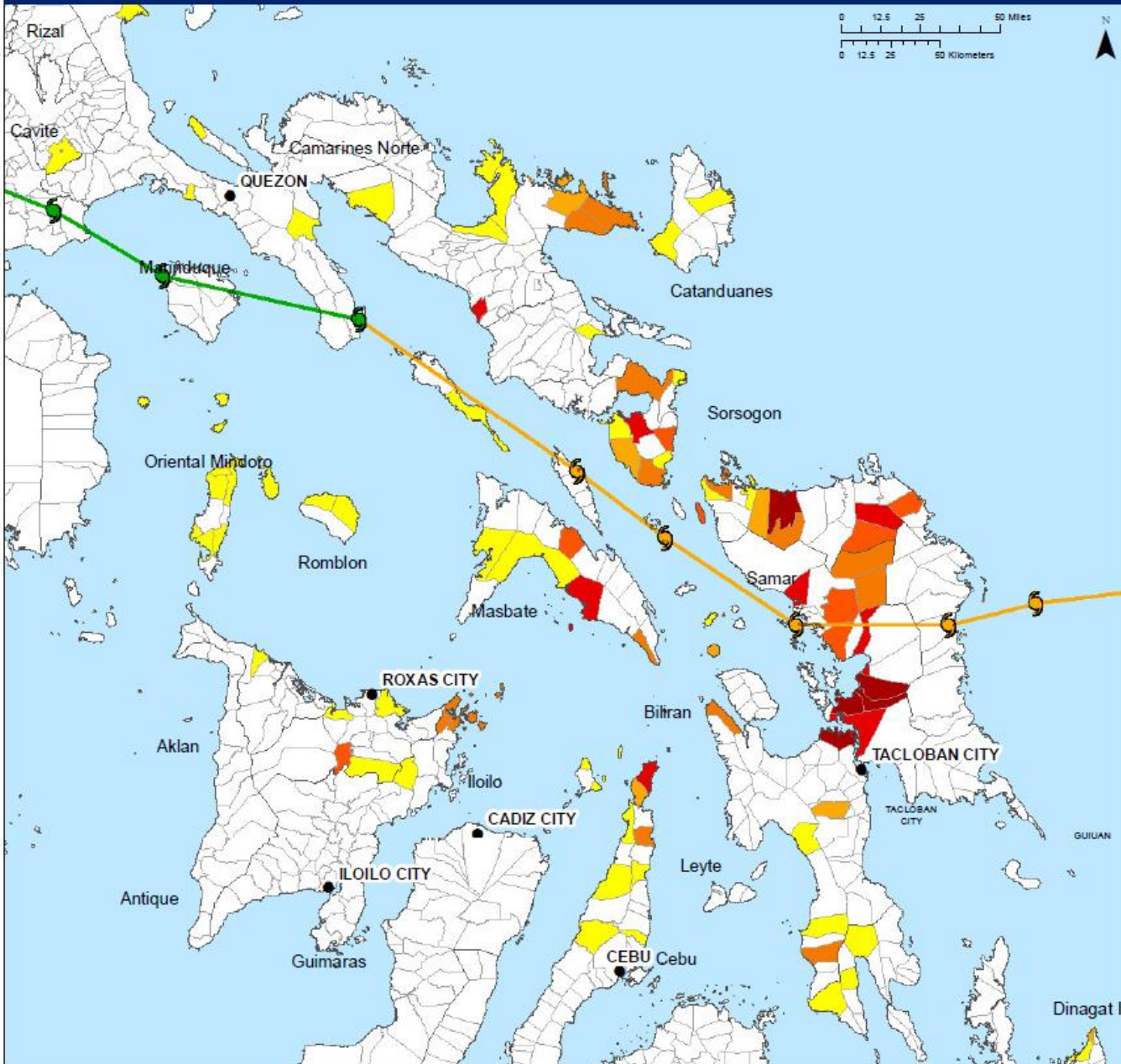
**Cartographic, Geological, Hydro-meteorological ..
Geospatial Data – Vector and Raster**

Impact-based Forecasting

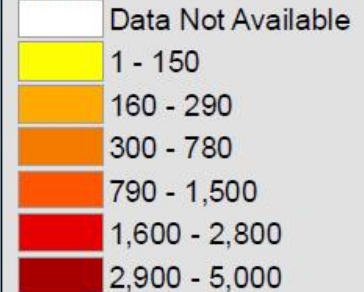
Example from Typhoon Hagupit (Ruby) Dec 2014 – Philippines

- **Post-disaster scenario**

Impact on Housing Sector

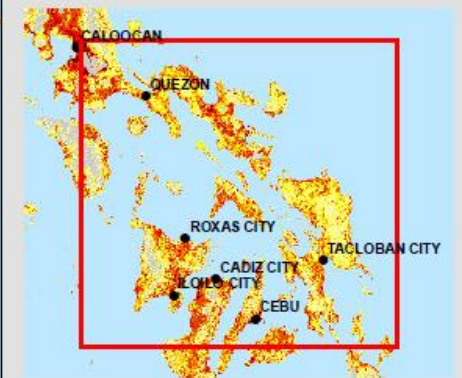


Damaged or Destroyed Houses



Total: 58,119

This map depicts the number of houses destroyed or partially damaged by Typhoon Hagupit (Ruby) as of the time shown above. Only data for those provinces who have reported are shown. This map will be updated as more information becomes available.

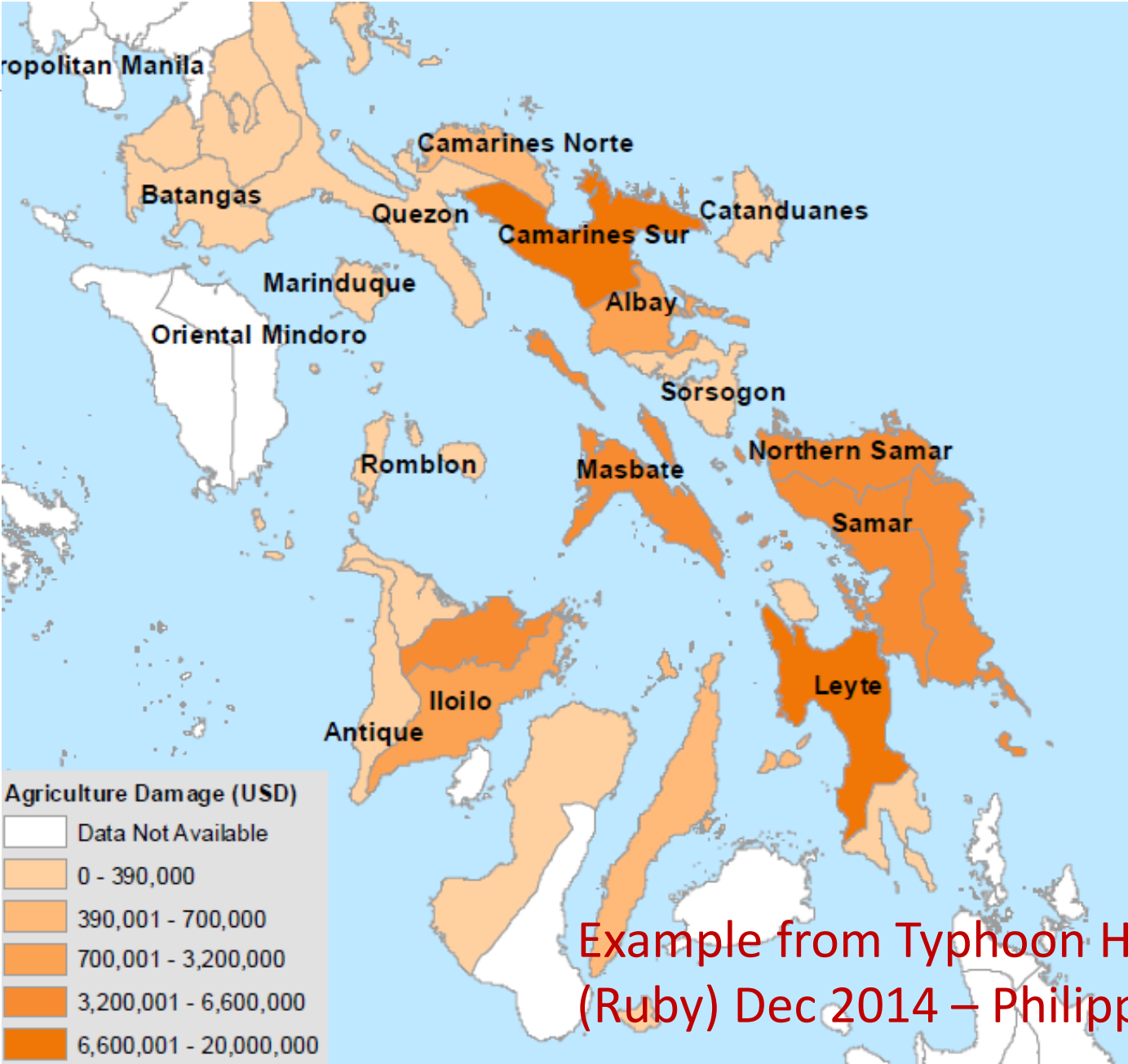


The delineation of political boundaries, and associated data shown here do not imply endorsement by the Pacific Disaster Center.

Produced By: Pacific Disaster Center
 Product Created: 12/12/2014
 Source Data: ESRI, NOAA, JTWC, NDRRMC
 Projection: Mercator Datum WGS84

<http://www.pdc.org> - disaster@pdc.org

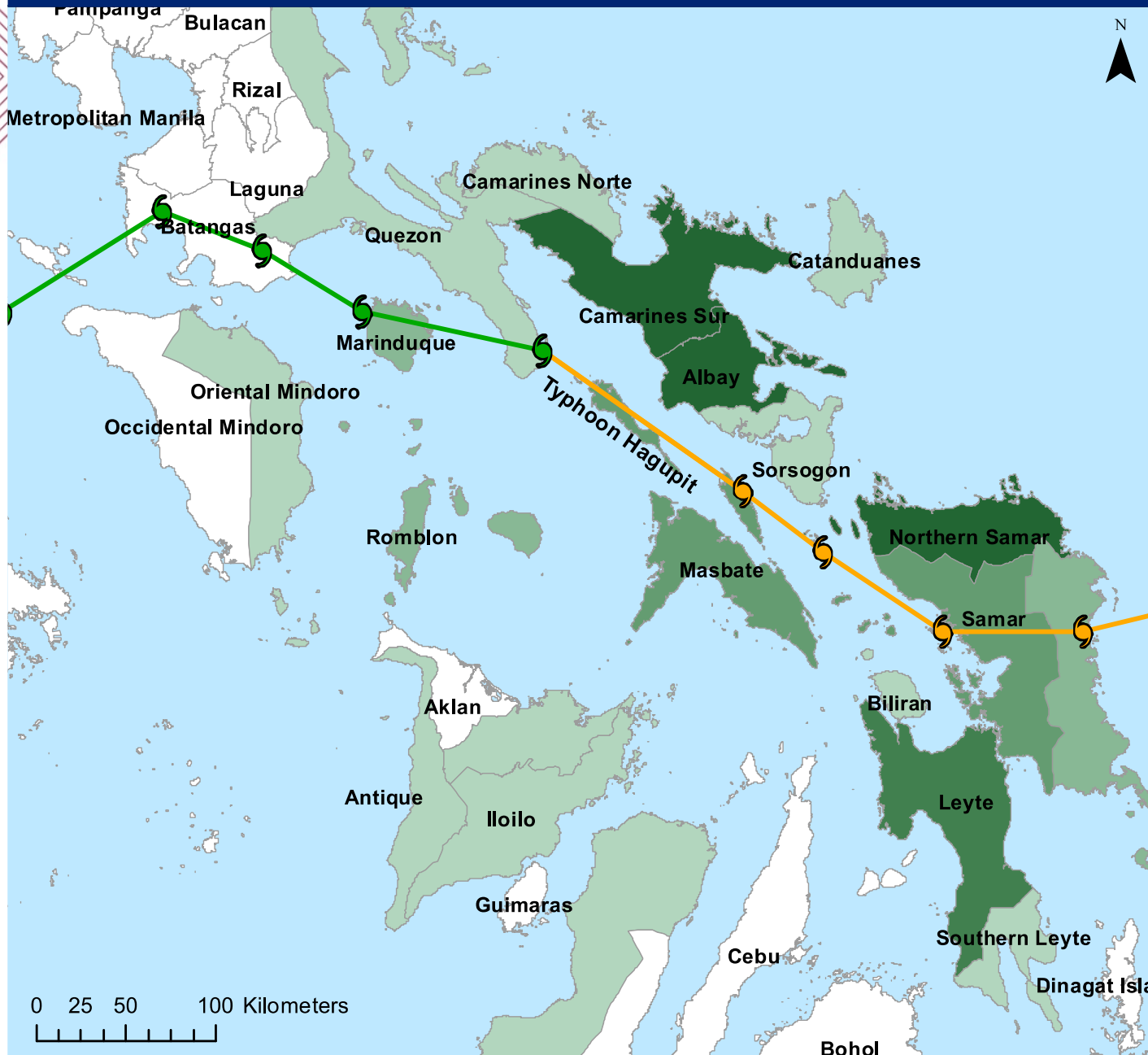
Impact on Agriculture



Agriculture and Infrastructure Economic Impact - Typhoon Hagupit (Ruby)

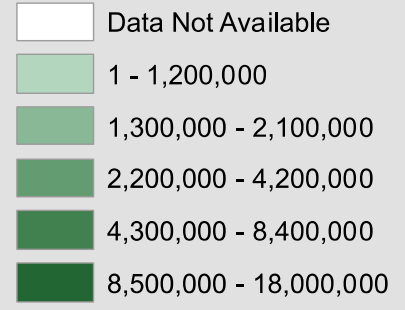
Based on information from NDRRMC Report #17, 11DEC14, 1800PHT

PDC TC-02



This map depicts the total cost of infrastructure and agriculture damaged by Typhoon Hagupit (Ruby). Only data for those provinces who have reported are shown.

Cost of Damages (USD)



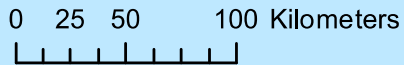
Total: \$75,118,555


*Currency exchange rate based on latest exchange from USG as of 10DEC14

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Regionalization of the International Network of Multi-hazard Early Warning System (IN-MHEWS)

International Network for Multi-Hazard Early Warning Systems (IN-MHEWS)

Background

- Proposed by a number of UN entities (e.g. WMO, UNISDR, UNESCO, UNESCAP), international organizations (e.g. IFRC) and their national partners at the WCDRR's Working Session on Early Warning in Sendai in March 2015, **launched in early 2016**
- joint effort to **assist and advise member States through multi-hazard early warning services**

Will work through expert groups on:

1. **different hazard clusters** which address impacts of related hazards,
2. **functional components** of MHEWS, and
3. **Regional multi-hazard early warning mechanisms**

IN-MHEWS: Multi-Hazard Cluster Approach

Hazard clusters

- Hydrometeorological hazards (WMO, UNESCO, ..)
- Geophysical hazards (UNESCO, UNESCO-IOC,..)
- Technological hazards (IAEA, ...)
- Health-related hazards (WHO, ...)
- Food security (FAO)
- ..

Functional clusters

- Risk knowledge (UNISDR..)
- Detection, monitoring, analysis, forecasting of the hazards ...(WMO, etc.)
- Dissemination and communication of warnings and impact information (ITU, WMO, etc.)
- Preparedness and response capabilities (IFRC, UNOCHA, etc.) at the “last mile”
- ..

Regional components

- Asia (UNESCAP, RIMES, etc.)
- Europe (EC JRC DRM Knowledge Centre, MeteoAlarm, etc.)
- Others (WMO TCP)

Cascading impacts... Typhoon –storm surges- floods-landslides

International Network for Multi-Hazard Early Warning Systems (IN-MHEWS)

- **A steering group** with a rotating chairmanship consisting of core partners: WMO, WHO, UNDP, UNESCO-IOC/UNESCO, UNESCAP, UNISDR, UNOOSA / UN-SPIDER, IFRC, ITU, UNEP, UPU, EC JRC, GFZ, GFDRR and GIZ
- **Network partners** (national MHEWS, private sector consortia)
- **Link to other global** (e.g. CREWS, 5-10-50, UNISDR S&T Partnership, etc.) and **regional initiatives** on early warning (e.g. UNESCAP, WMO TCP, RIMES)

Strengthening Regional Mechanism for SFDRR



ESCAP Multi-Donor Trust Fund
for Tsunami, Disaster & Climate Preparedness

Regionalization of..

- International Network for Multi-Hazard Early Warning System (WMO)
- Intergovernmental Coordination Groups (ICGs) for the Indian Ocean and for the Pacific Tsunami Warning and Mitigation System (UNESCO-IOC)
- International Space Charter
- Sentinel Asia (JAXA)
- Global Earth Observation System of Systems (GEOSS) Asia-Pacific

ESCAP/WMO Typhoon Committee	WMO/ESCAP Panel on Tropical Cyclones
Regional Drought Mechanism	Extending ESCAP-WMO Partnership for Tropical Cyclone Committee in the Pacific
New initiatives	
Transboundary Flood Forecasting and Early Warning	Tsunami Awareness, Early Warning and Preparedness
Combating Sand & Dust Storm	Research Networks for GLOFs, Flash Floods and Landslides Early Warning

International Conference on MHEWS

22-23 May 2017, Cancun, Mexico

Session : Transboundary threats: a case for **multilateral and regional partnerships for multi-hazard early warning systems**. UNESCO – IOC, UN ESCAP

Session: Risk Informed Early Warnings – The First Mile
UNISDR, UNOOSA, UNESCAP..

- Are early warning systems driven by risk information?
- What risk information is required in countries and at local?
- How can exposed constituents, communities and sectors be effectively engaged in defining risks and early warning needs and best dissemination channels?

Expected Outcomes: Regional Component of IN-MHEWS and a revised Operational Multi-Hazard Early Warning Checklist and guidelines for measuring early warning effectiveness to support countries measure the Sendai Framework Target G.

49th Session of the Typhoon Committee

Your guidance on

- ESCAP/WMO Partnership – IN-MHEW
- Regional MHEWS –based on the experiences related to SWDP, EXOTICCA, UFRM...
- Impact based forecasting
- Risk based early warning

Thanks...