



Tools, Technologies and Informatics for Disaster Risk Resilience

Bridging the Gap between Science and Policies for Disaster Risk Resilience

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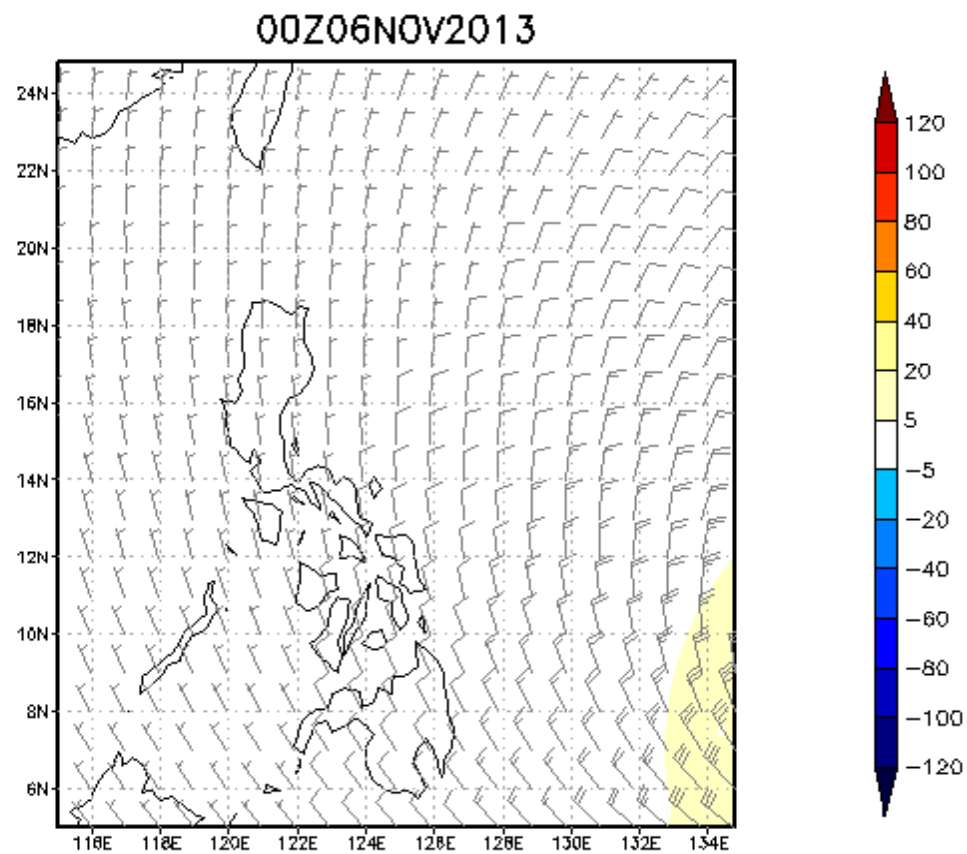
Asian Disaster Preparedness Center (ADPC)

Workshop on SMART Informatics for Sustainability

21 Mar 2018, Bangkok, Thailand

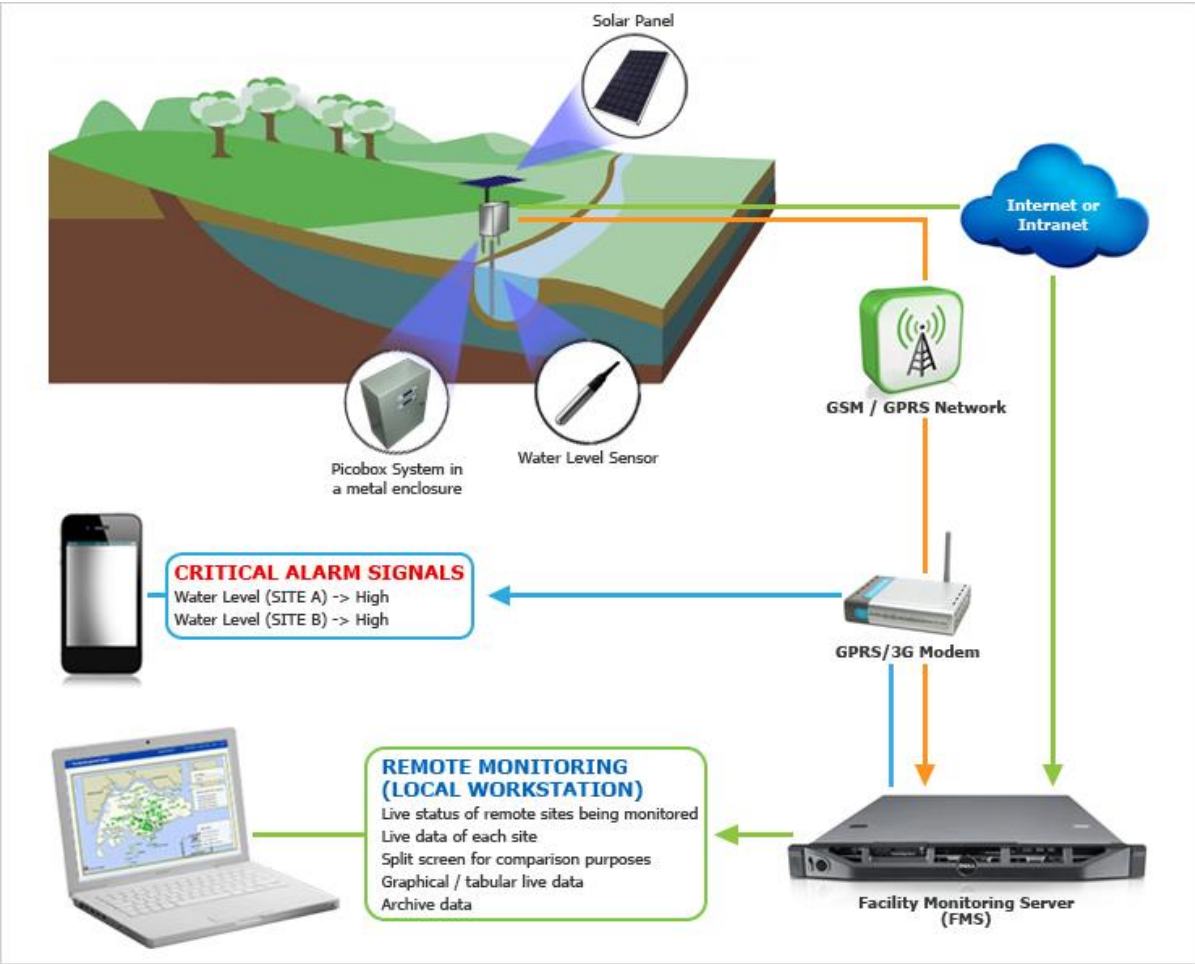
Advancement in Disaster-related Science & Technology

Forecasting of Weather Events



Source: Department of Science and Technology, Philippines

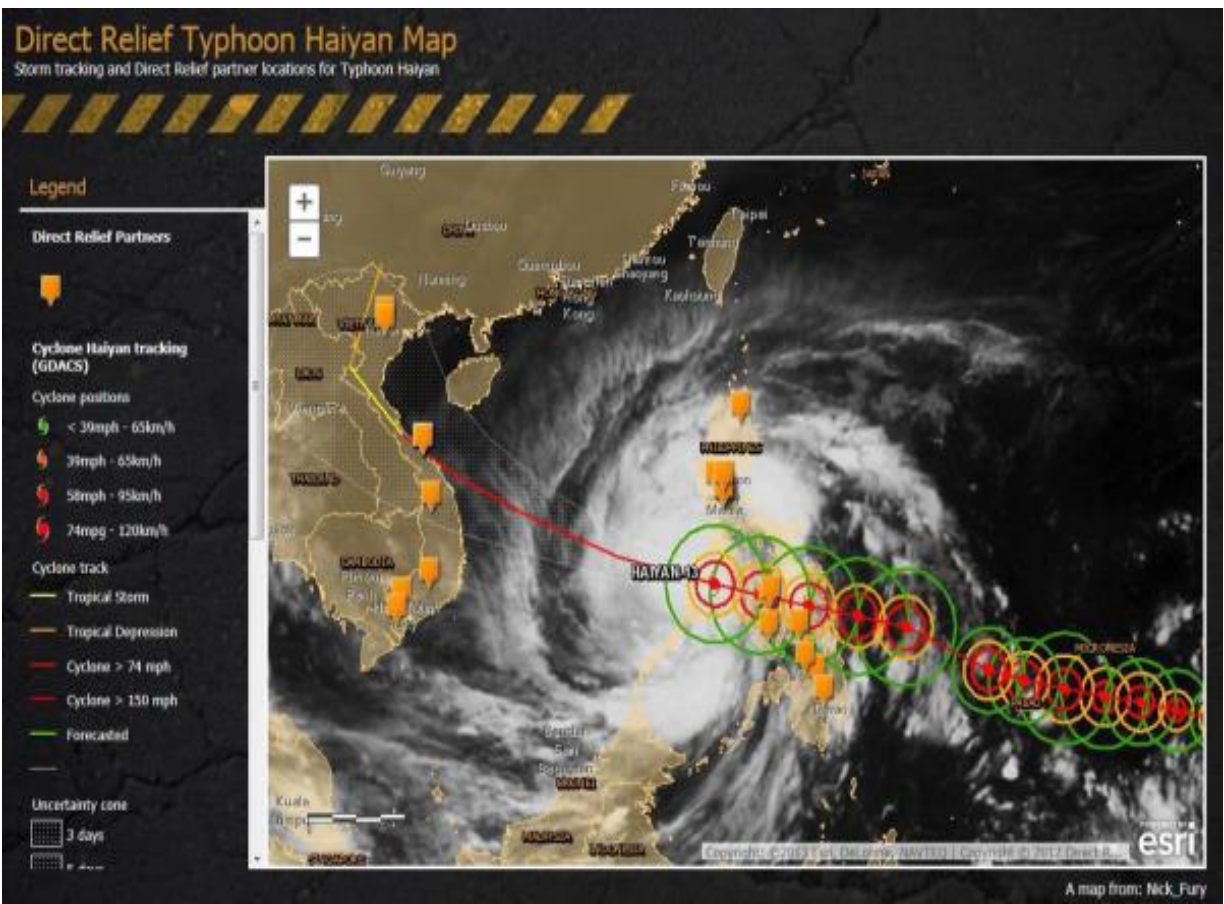
Field & Remote Monitoring



Source: Linkwise Technology

Advancement in Disaster-related Science & Technology

Real-time Disaster Monitoring



Source: Direct Relief, ESRI

Satellite Technology



Source: United States Geological Survey

Scientific information not being applied at the local level due to a lack of understanding

New technology

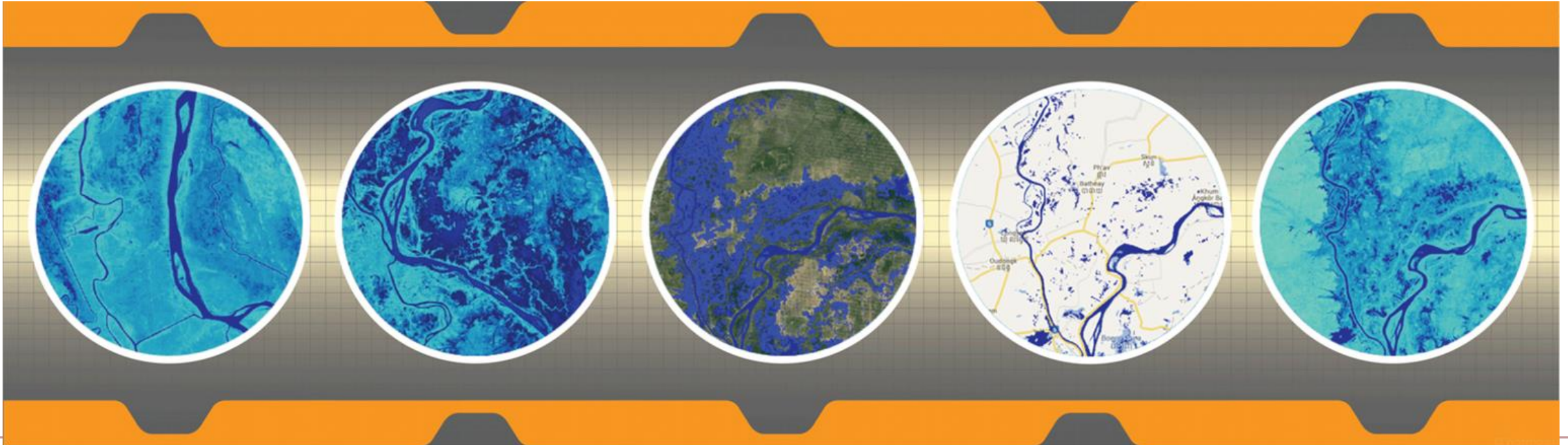
Satellite imagery and other technology is becoming more widely available faster than the community level can comprehend.

New Opportunity

Communities can make better risk informed decisions if they could understand the data available.

Lack of understanding

If there was a better understanding of this new technology at the community level it could be a vital resource to DRR activities.



More capacity building needed

Training that leads to action is required

Traditional training

- Following up with participants after the training can be difficult
 - Study is required to see how the skills were applied by graduates
- Training needs to be specialized to ensure practical and applicable use in the local context



Success Cases

Strengthening weather and climate services of Myanmar, Bangladesh and Vietnam to deal with hydro-meteorological hazards



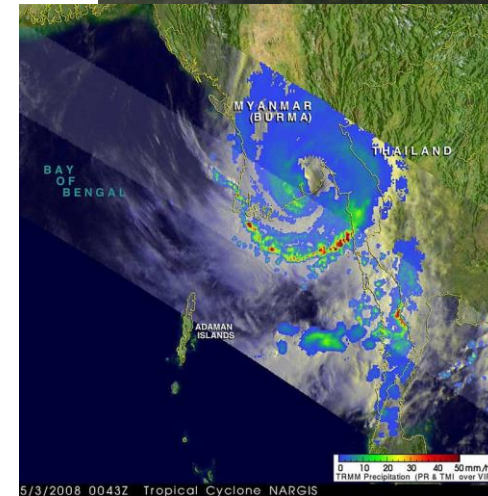
Improve **daily and seasonal weather forecasting** capacity to further strengthen early warning



Improve climate services for sector specific **planning and sustainable development**



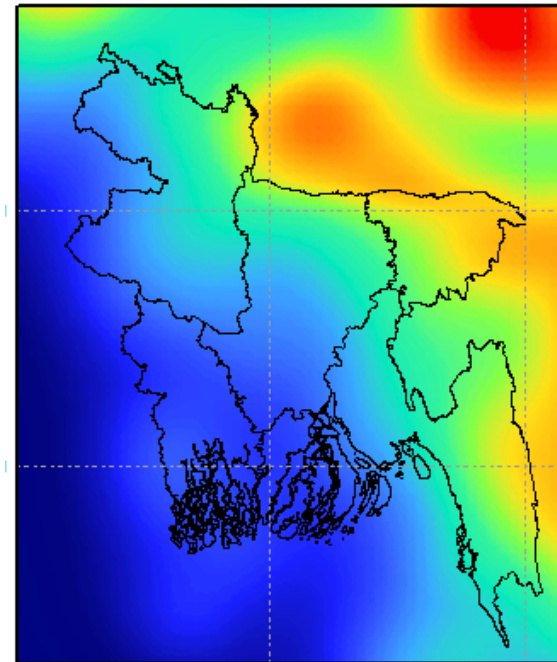
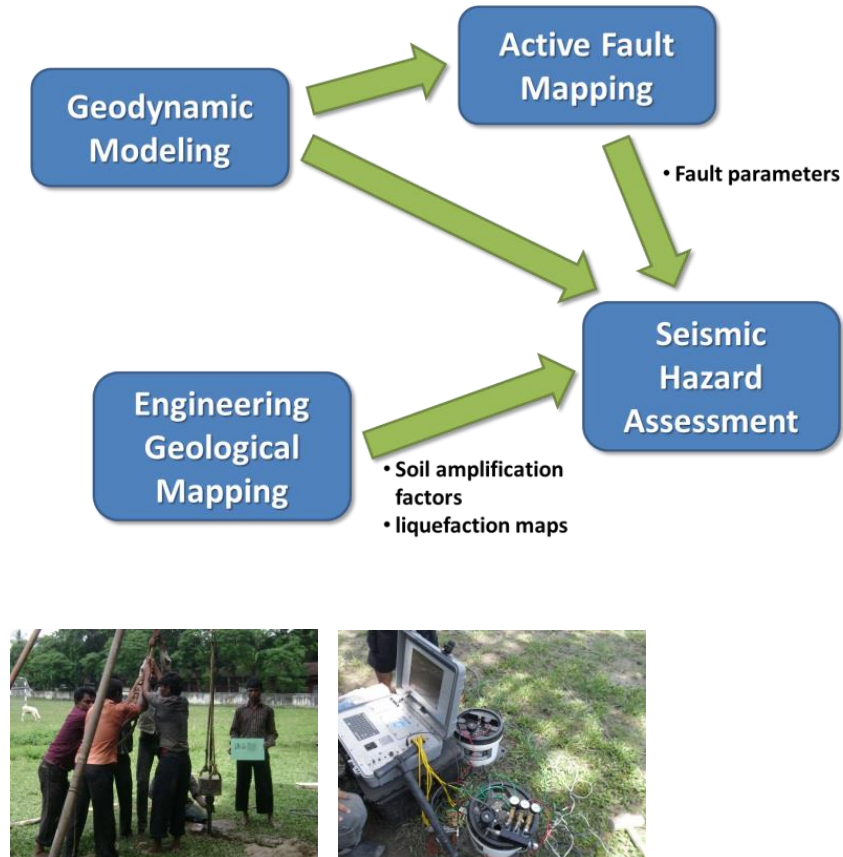
Improve effective utilization of weather and climate information for **coastal-ecosystem resilience**



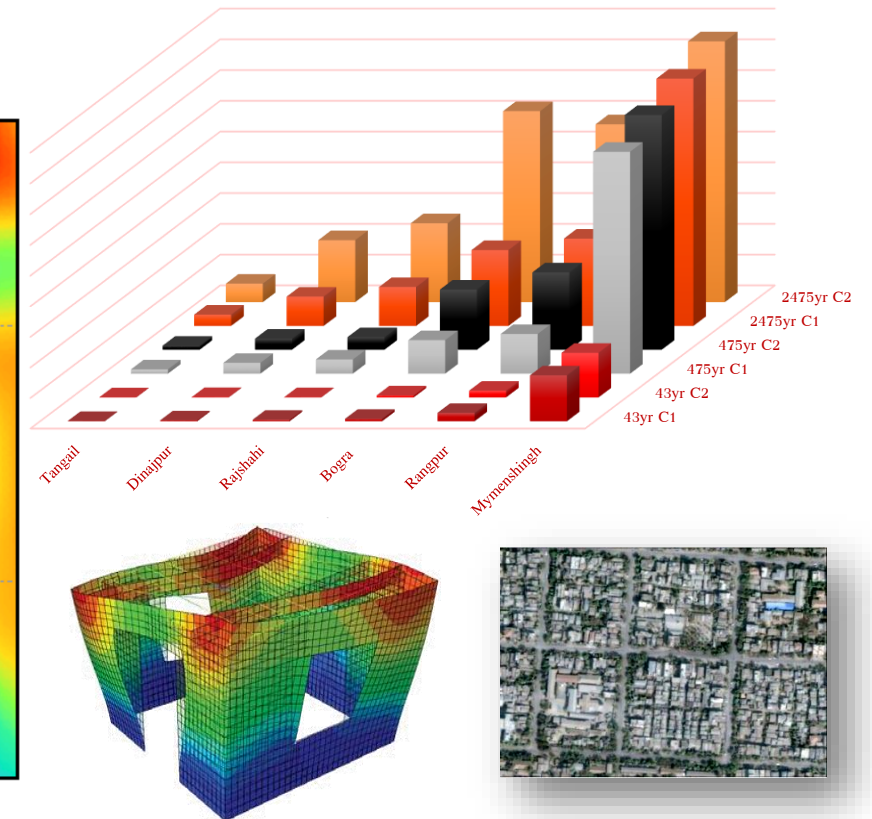
City-level Earthquake Risk Assessment in Bangladesh

Risk Quantification through Risk Assessment

Understanding the Earthquake Hazard for Six Cities



Economic Damage Scenario in Six Cities



Applications of Risk Assessment Results



Earthquake Simulation Drill for Community Preparedness

Contingency Plan for City and Community Level



Why did they work?

Our Approach

Science, System, Application



- ADPC uses science-based approaches to **identify**, **quantify** and **understand** risk
- Strengthening **effective governance** systems for managing disaster and climate risks and **institutionalizing** disaster risk management
- Incorporating disaster risk reduction into **development processes**


Our Approach

Engaging and sustaining



- Continuous and customized user engagement
- Strong political backing
- Co-development / capacity development

Connecting Space to Village in the Lower Mekong Region

SERVIR-Mekong is a geospatial data-for-development program that responds to the needs of Lower Mekong countries. [Learn more](#) 

<https://servir.adpc.net>



DECISION
SUPPORT TOOLS



GEOSPATIAL
DATASETS



RESOURCES &
PUBLICATIONS

[Request Technical Assistance](#)

SERVIR-Mekong priorities are set by the expressed needs of stakeholders. Let us know the needs of your organization by requesting assistance.



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SERVIR **MEKONG**

VIRTUAL RAIN AND STREAM GAUGE DATA SERVICE (VRS GS)

About ▾ How to use? ▾ FTP ▾ Feedback ▾

Virtual Rain Gauge

Virtual Stream Gauge

Daily

Start date:

03/02/2016



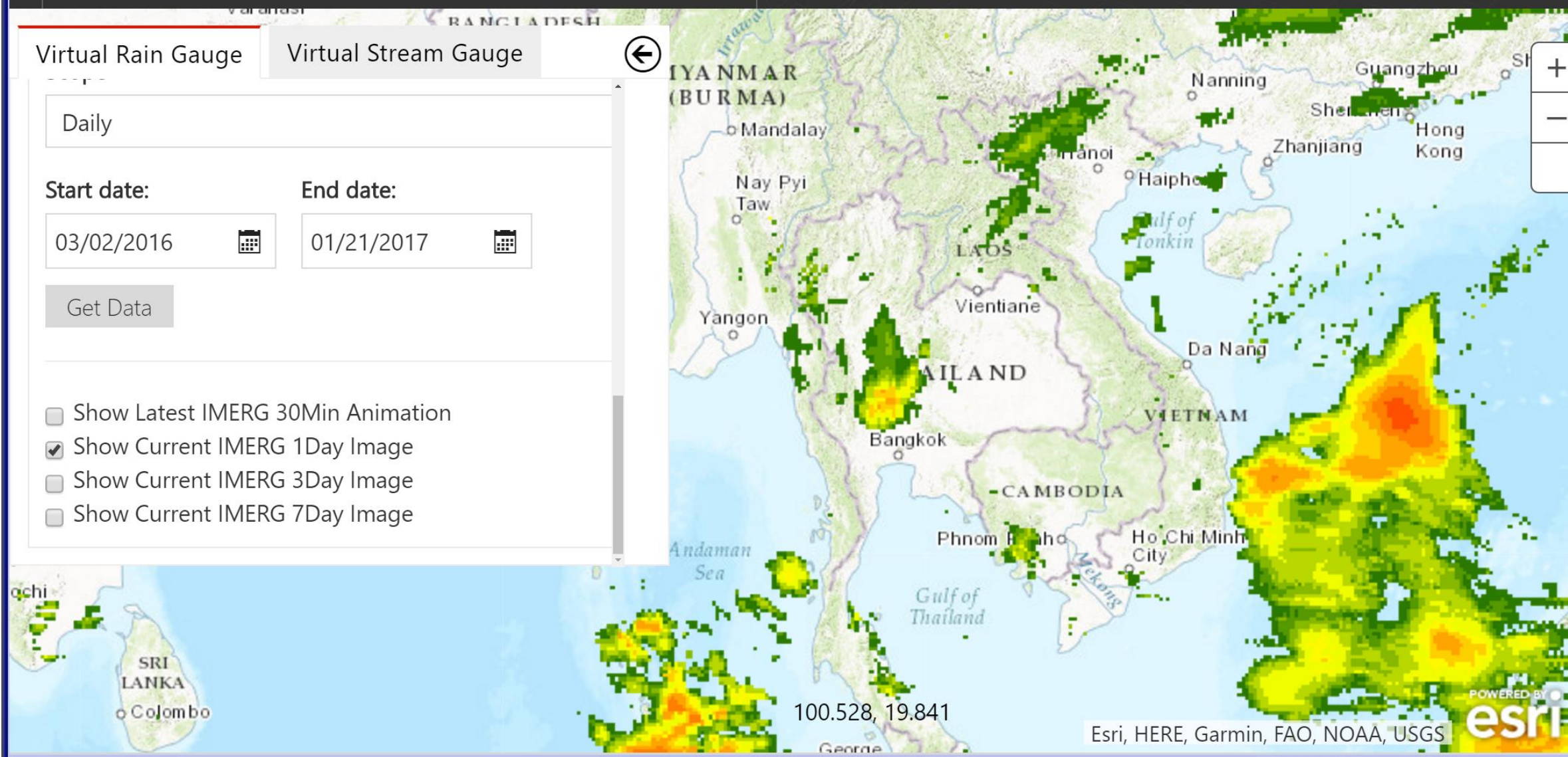
End date:

01/21/2017

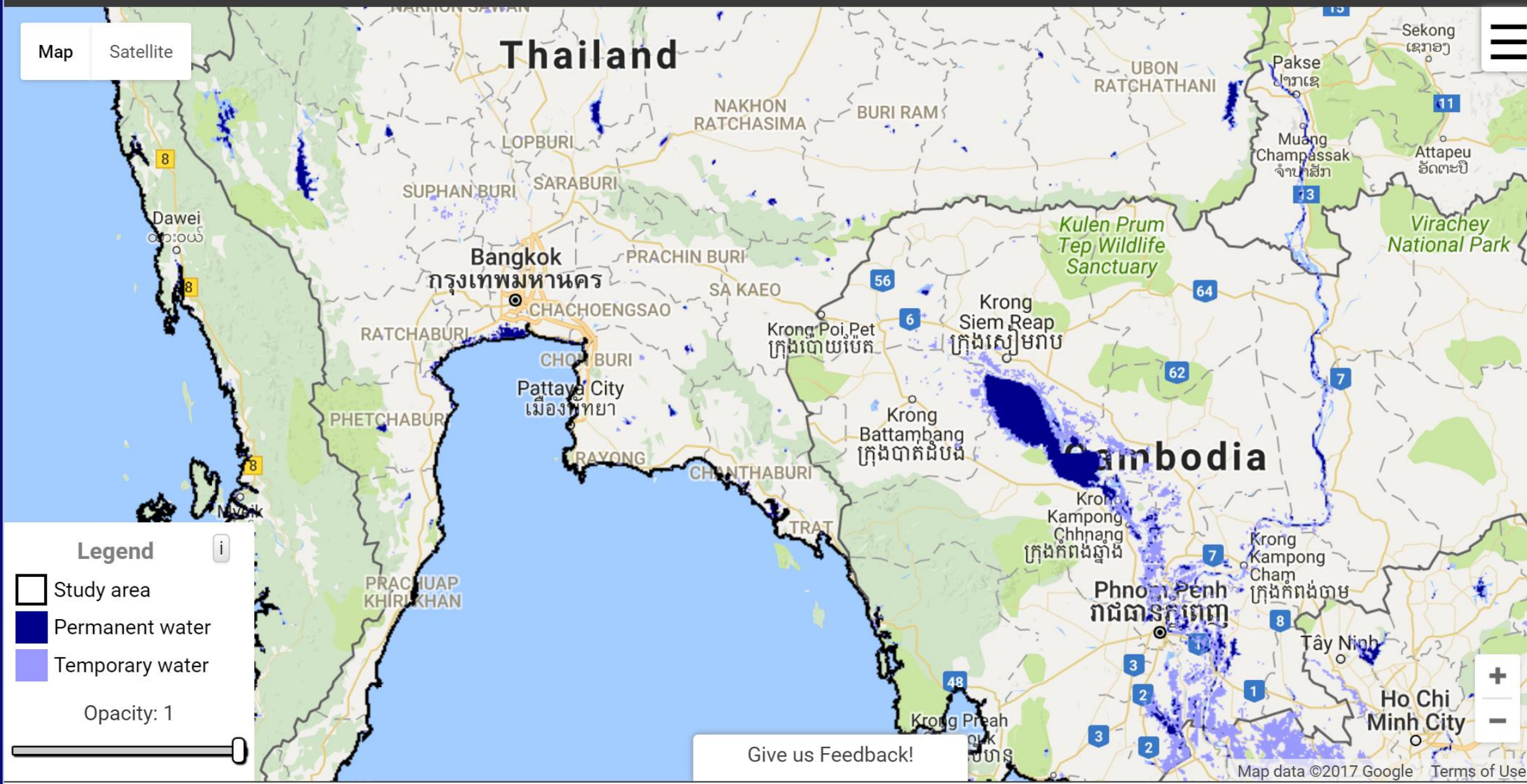


Get Data

- ☐ Show Latest IMERG 30Min Animation
- ☒ Show Current IMERG 1Day Image
- ☐ Show Current IMERG 3Day Image
- ☐ Show Current IMERG 7Day Image



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HISTORICAL FLOOD ANALYSIS TOOL

MAP HOW TO USE DOCUMENT FEEDBACK

View data Analysis Results Graph

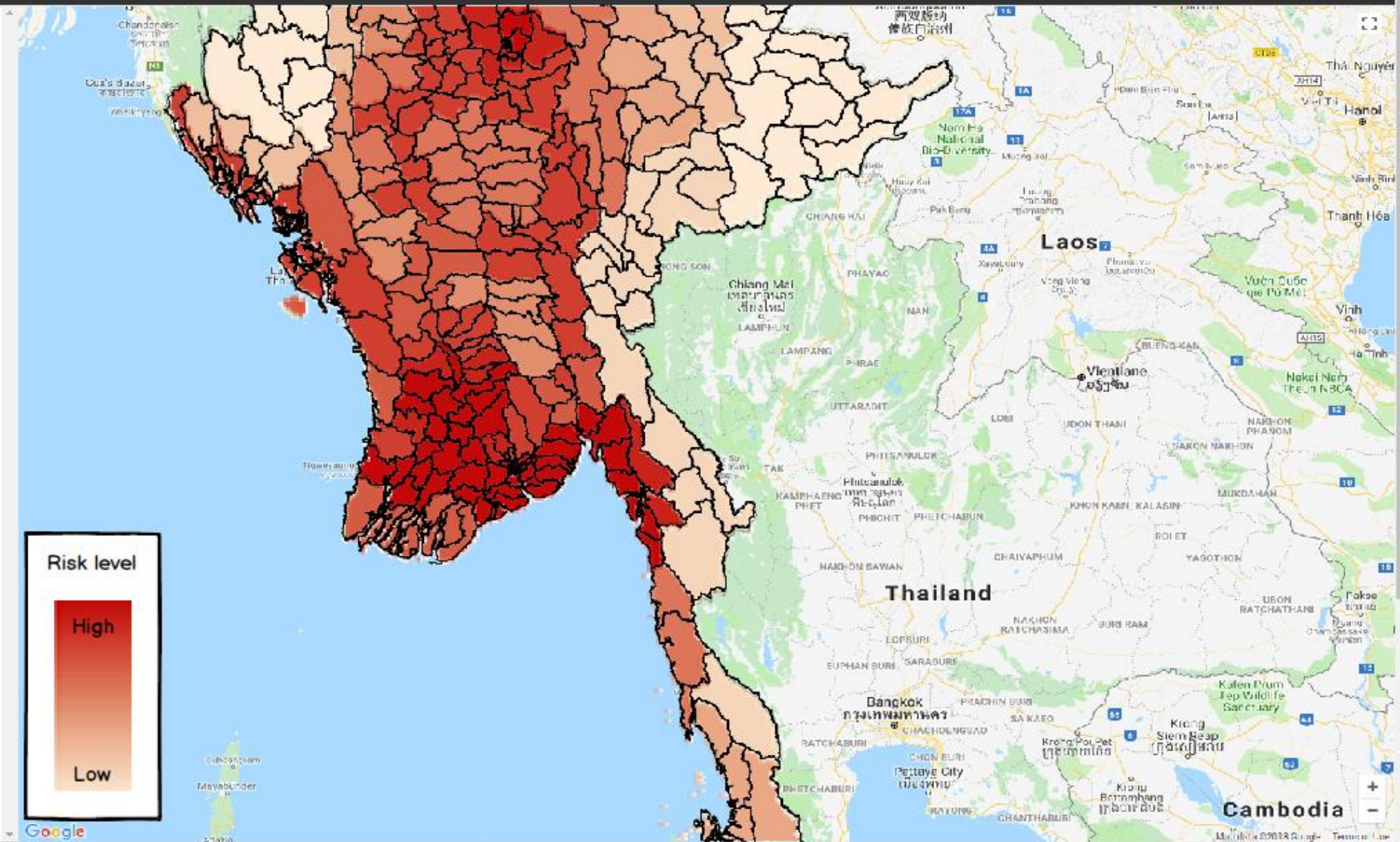
Generate graph

Individual selection

Individual selection

Admin. boundary selection

Click to generate graph





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SERVIR **MEKONG**

REGIONAL DROUGHT AND CROP YIELD INFORMATION SYSTEM

[MAP](#)[HOW TO USE](#)[DOCUMENT](#)[FEEDBACK](#)

Drought

Area

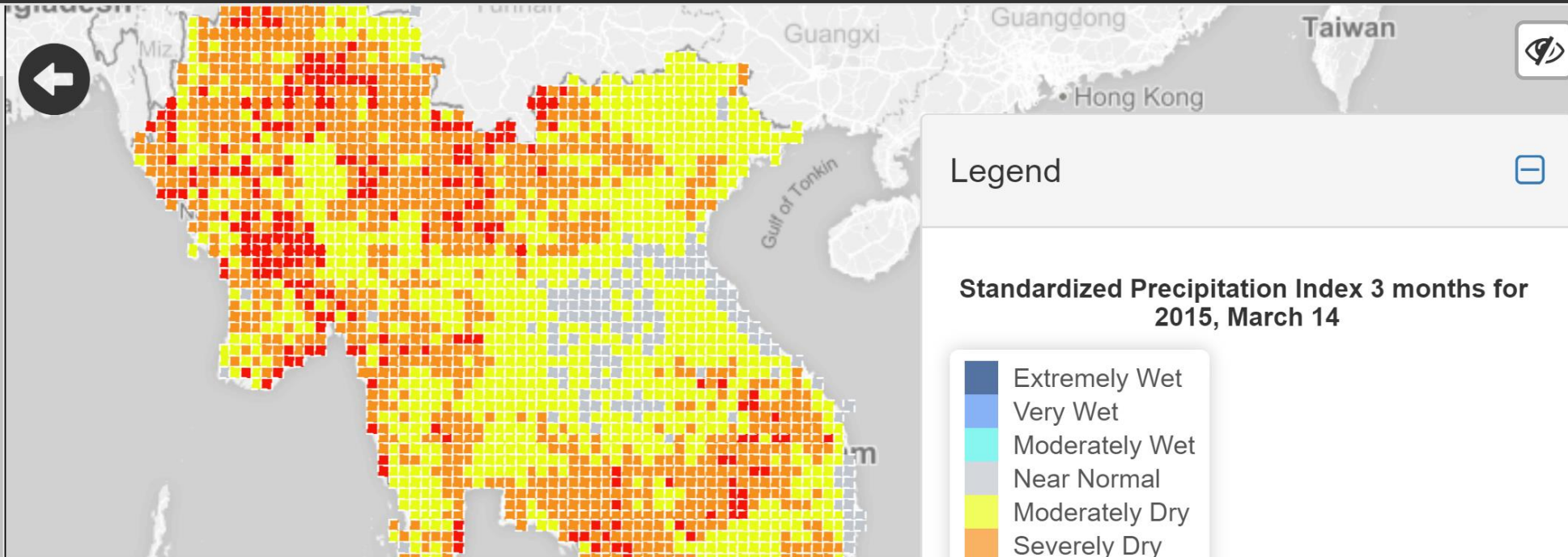
LMR Basin

Select Index

Drought

Select Variable

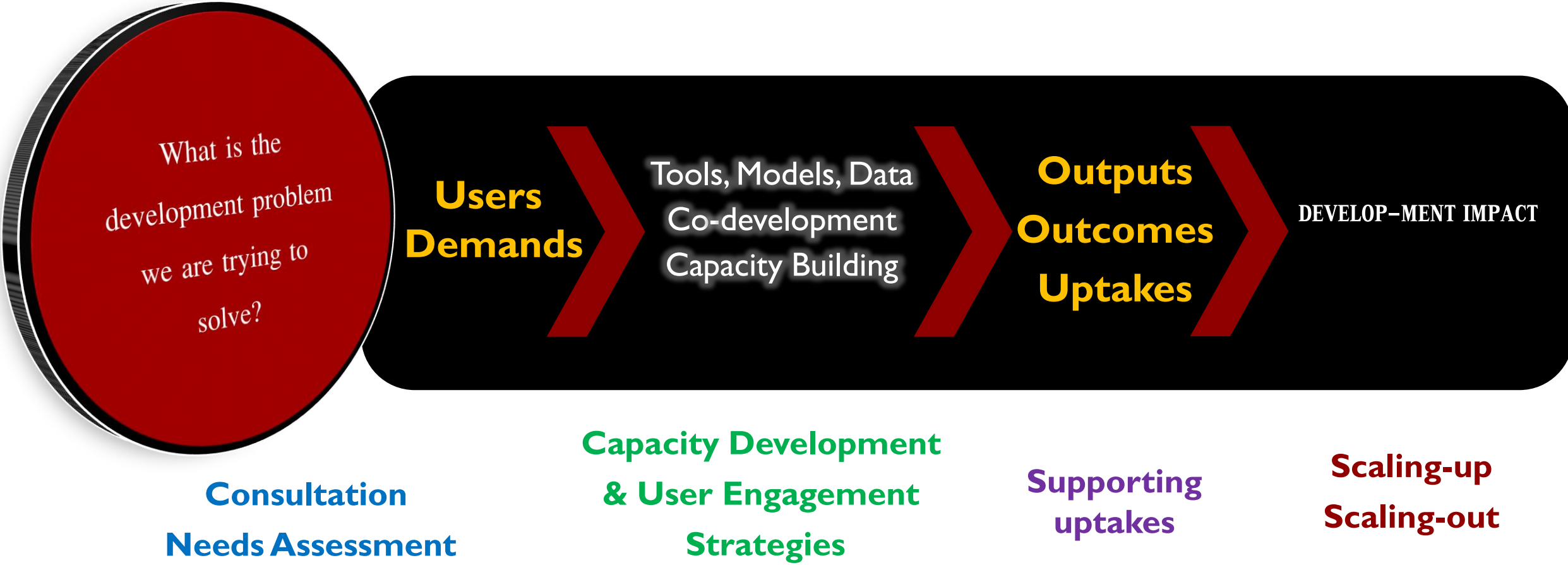
Standardized Precipitat



Jan 1981 Mar 1985 Apr 1989 Jun 1993 Aug 1997 Oct 2001 Dec 2005 Feb 2010 A

2015-03-14

Service Planning Approach



Development Problem: **Loss of rice production due to recurring severe drought in Vietnam**



Vietnam

Limited Rain Data

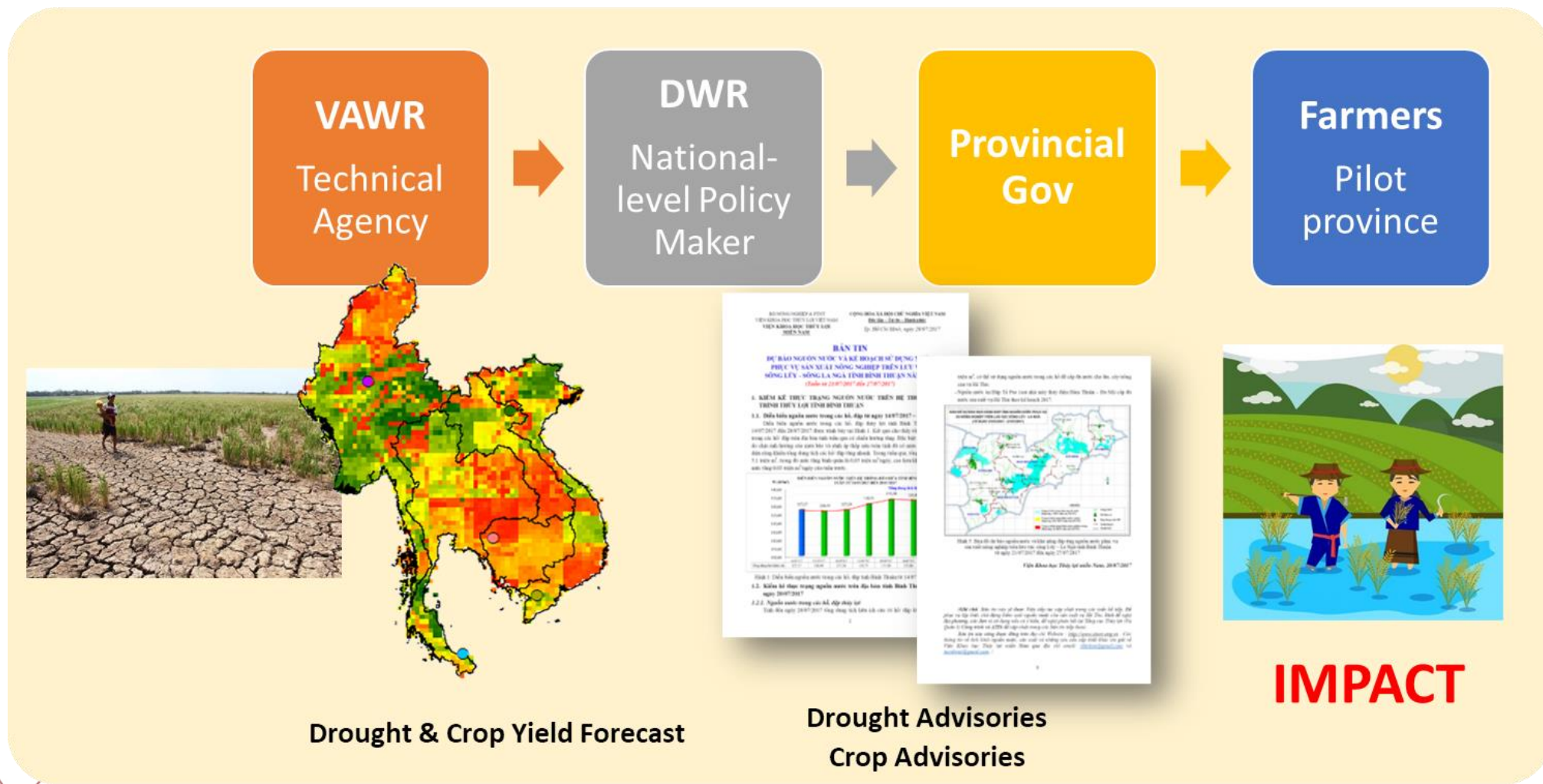
Limited Modeling Capacity

Inaccurate Drought Forecast

Unreliable Crop Advisories

Loss of rice production

Service: Enhancing Drought Resilience and Crop Yield Security in Vietnam



THANK YOU

FOR YOUR ATTENTION



<http://www.adpc.net>



<http://www.drrprojects.net>



Group: Asian Disaster Preparedness Center



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