

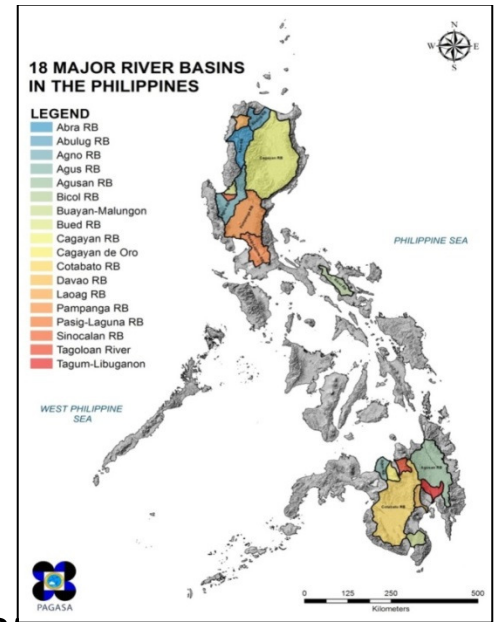
# Philippines:

## Project Title:

## Establishment of Drought Early Warning and Forecasting System: nationwide and Major River Basins in the Philippines

### Overall Goal:

*Utilization of in-situ and remotely sensed data, improving seasonal climate forecast and better climate information and service delivery*



### Background:

- Food security poses a great threat from unpredictable changes in rainfall and extreme weather and climate events, dry spell and droughts becoming prevalent ;
- No established Alert Level System on Drought early warning and forecasting system for the country (i.e., no agricultural drought index utilizing soil moisture/RS data);
- Seasonal climate forecast (SCF) based only from statistical downscaling techniques; lack of good soil moisture data from ground stations (AWS)

# Project Design Matrix

## Overall Goal

Utilization of available in-situ and remotely-sensed data in establishing drought early warning and forecasting system (DEWaFS) for agricultural adaptive strategies

## Project Purpose

- Utilization of soil moisture data from RS data for the establishment of DEWaFS, based from harmonized drought indices.
- Generation of seasonal climate forecast based from combined statistical and dynamical downscaling techniques;
- Development of several drought indices and harmonizing such indices to come up with DEWaFS
- Delivering such kind of climate information in critical areas that might be affected to stakeholders (i.e., farmers, LGU) thru conduct of Regional Climate Forum;

## Outputs:

- Produce several drought indices (i.e., rainfall deficit, SPI, PDSI, cal/val soil moisture data)
- Improved seasonal forecast up to 6-month lead time using combined statistical and dynamical approach (flood, dry spell, short/long-term drought)
- Drought Alert Level System based from harmonized drought indices
- GIS-based maps ;
- Drought Advisories

# Activities and Key Leaders:

## Local Organizations:

- Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA), Executing Agency; Department of Agriculture;
- Local government units;
- National Water Resources Board; water concessionaires, dam operators, power

## International partnerships/prospects:

- The Japan Aerospace Exploration Agency (JAXA)**, Satellite data provider; algorithm for extraction and correction of RS data; **Data access –**, through DIAS
- Environment Canada (GL) method
- Japan Meteorological Agency (JMA), Meteorological Research Institute (MRI), Tokyo University** – dynamical downscaling capacity building, verification and model validation
- ECMWF, NCEP, IRI** for the provision of GCM forecast SST, boundary data , data library
- APEC Climate Center** (CLIK tool for statistical downscaling, RegCM4, GRIMS for dynamical downscaling)
- CAGM**
- APHRODITE gridded precipitation data**

## Example of harmonized drought Early warning system

LEVEL	MONITORING STATUS
<b>ALERT</b>	The deficit of current 3-months total cumulative rainfall amount exceeded 35% from normal and latest SPI index less than -1.5 <b>or</b> the deficit of current 6-months total cumulative rainfall amount exceeded 35% from normal <b>and</b> latest SPI index less than -1.5
<b>WARNING</b>	The deficit of current 3-months <b>and</b> 6-months total cumulative rainfall amount exceeded 35% from normal <b>and</b> latest 3-months SPI index less than -1.5 <b>and</b> previous drought level was categorized as ALERT.
<b>DANGER</b>	The deficit of current 3-months <b>and</b> 6-months total cumulative rainfall amount exceeded 35% from normal <b>and</b> latest 3-months SPI index less than -2.0 <b>and</b> previous drought level was categorized as WARNING.
<b>COMPLETION/CANCELLATION</b>	SPI Index become positive and/or total current monthly rainfall amount is above normal values.

*Example of harmonized drought early warning system using rainfall deficit and SPI index  
Source: Malaysian Meteorological Department*

## Some of the Existing/planned projects related to GEO

- **Observation network, WLS, Doppler Radar networks**
- **ICHARM project: Flood and drought risk assessment in the Pampanga river basin**  
Counterpart: PAGASA and others (about SOUSEI project and new PWRI's recovery planning project) ; PROJECT DURATION: 2014 (Mission duration);
- **IFAS - Capacity Development for Flood Risk Management with Integrated Flood Analysis System(IFAS) -JICA, (2012)**
- **Sentinel Asia 3 Experimental Operation: Landslide and Flood**  
DONOR: Japan Aerospace and Exploration Agency (JAXA) - Sentinel Asia (SA) /PHIVOLCS  
PROJECT DURATION: 2013-2014

## Some of the Existing/planned projects related

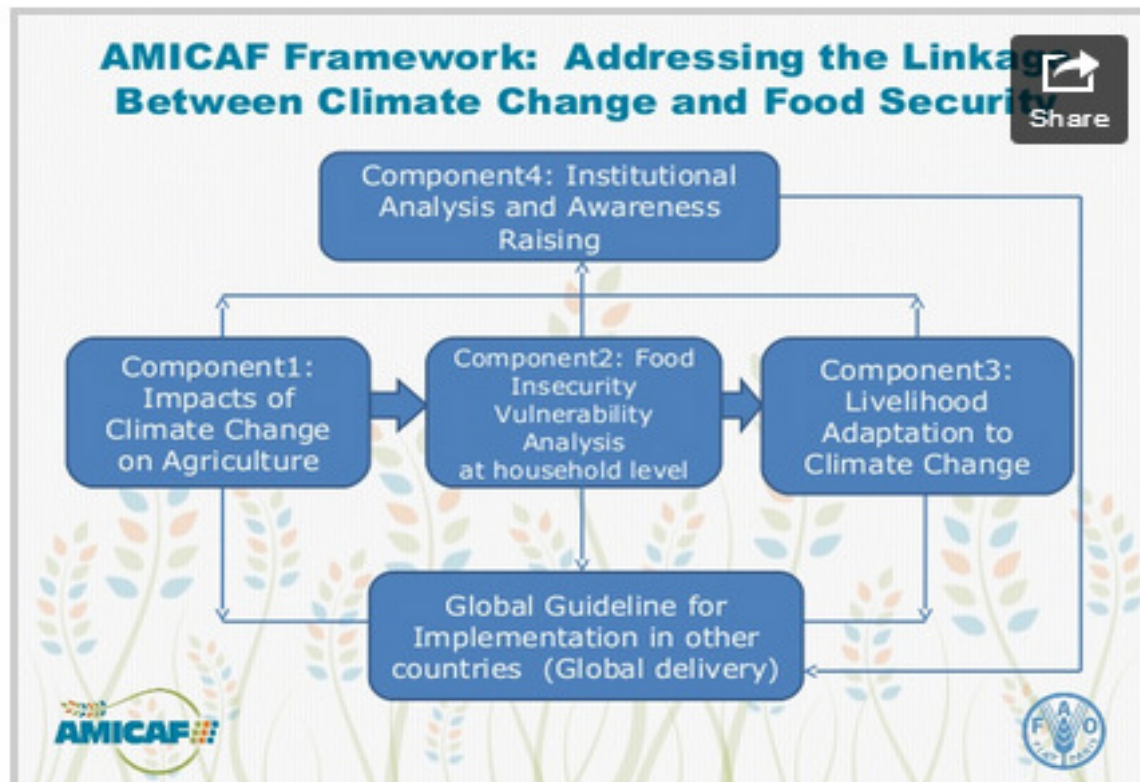
- **Strengthening Capacity of Comprehensive Data Management of Flood Forecasting and Warning System (FFWS) through Strategic Formulation of Hydrometeorological Information System**

DONOR: JICA – TCP

PROJECT DURATION:

2014-2017

- **FAO-AMICAF Project - Assessments of Climate Change Impacts and Mapping of Vulnerability to Food Insecurity under Climate Change to Strengthen Household Food Security with Livelihoods' Adaptation Approaches (AMICAF) (2011-2014)**



*Thank you....*

ASEAN, EU, UN, Australia, Belgium, Brunei,  
Canada, China, Denmark, France, Germany,  
Hungary, Indonesia, India, Israel, Italy, Japan,  
Luxembourg, Malaysia, Netherlands,  
New Zealand, Norway, Qatar, Russia,  
Saudi Arabia, Singapore, Spain,  
South Korea, Sweden, Switzerland,  
Taiwan, Thailand, Turkey,  
UAE, UK, USA,  
Vatican, Vietnam  
& donor organizations.

WE WILL NEVER FORGET

*From the Philippines and Filipino people*

Typhoon Haiyan  
(Nov. 8, 2013)

