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Cambodia Project Designing Matrix

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Overall Goal

Operational Implementation of Integrated Wa
Resources Management Approaches

Project Purpose

Draft Specific issues in Cambodia:

- In-situ observation network and data access and sharing platform not sufficient.
- Lack of flood/drought forecasting and early warning systems for operational applications.
- Climate change impact assessment on water nexus. *To address these issues ?*

Con't

1. Improve water cycle observation network and data management and information dissemination systems.
2. Develop capability of flood and drought forecast and early warning on an operational basis including:
   - Accessibility to numerical weather prediction information and data.
   - Suitable hydrological models for operational use.
   - Decision support and information dissemination tools.
3. Understand the current situation and assess climate change impacts on seasonal patterns of water cycle variables, floods, droughts and water-nexus (food and health in particular) and provide recommendation for adaptation measures.

Outputs

1. **Demonstrate improvement of water cycle observations data management systems and information dissemination systems.**

- Develop/improve near-real time data observation network by

(i) Installing new/improvement stations and

(ii) coupling satellite and in-situ measurements.

- Develop/improve comprehensive in-situ and satellite observation data archive for improving monitoring capability of water cycle and enhance data dissemination systems, which is then used Develop/improve long-term and comprehensive climate observation data archives, which are used for climate change analysis.
- Improve observational, modeling and application capacity in the country (education and training).

2. **Demonstrate capability of flood and drought forecast and early warning on an operational basis, starting with the Sangker river basin and then follow up with wider areas.**

- Establish easy and real-time access to numerical weather prediction data (Meteorology./Hydrology Department DOM/DHRW) for operational purposes.
- Develop distributed, physically-based hydrological model(s) for converting meteorological (weather prediction) data into hydrological information and capable of coupling with further modules, e.g. inundation, vegetation growth and crop

- Understand the current situation and assess climate change impacts on seasonal patterns of water cycle variables, floods, droughts and water-nexus (agriculture, in particular) and provide recommendation for adaptation measures based on IWRM practices,
- Methodology for assessment of hydrological changes using the climate changes modeling projection data (corrected and downscaled) and suitable hydrological model(s) analysis's.

Activities and Key Leaders

Governmental sector:

Ministry of Water Resources and Meteorology MOWRAM (Meteorology and Hydrology department) and also included other :

- **Ministry of Agriculture, Forestry and Fishery, Ministry of Environment MAFF**
- **Ministry of Environment MoE**
- **Coordination Body among the Ministries and**
- **…….**

In addition to the Lead Organizations' capacity which has been developed, we will take following actions in collaboration with the organizations and projects as follows

- **Demonstrate improvement of water cycle observation**
  - Transmitting rain gauge data to the Lead Organization Data Facility and sharing the data to wide communities NASA, NOAA, JAXA, DIAS
  - Satellite observation data archive NASA, NOAA, JAXA, GEOSS Water Portal, DIAS, AWCI
- **Demonstrate capability of flood and drought forecast and early warning on an operational basis**
  - Establish easy and real-time access to numerical weather prediction data (Met./Hydro services) for operational purposes

    NWP centers, AWCI, DIAS, and
  - Couple hydrological model with a crop model

AWCI, DIAS, science communities

- Prototype real-time data integration systems for hydrological modeling including data assimilation and information dissemination. Meteorology Department, NASA SERVIR, DIAS
- **Assess climate change impacts on floods, droughts and water-nexus**
  - Selection of GCMs which can express the regional climate AWCI, DIAS, science communities
  - Assessment of the changes of flood, drought and water-nexus.

AWCI, DIAS, science communities

Thanks