

Concept Note

Regional Drought & Crop Yield Information System - Stakeholder Workshop

Organized and supported by SERVIR-Mekong

30-31 March 2017, [Sukosol Hotel, Bangkok, Thailand](#)

Background/Rationale

Drought is an increasingly frequent phenomenon in the Lower Mekong Region. Whereas seasonal flooding cycles have a number of positive impacts on the region's agriculture and ecosystems, drought events bring primarily negative impacts on ecosystems, agriculture, and socio-economic conditions, of the farming communities. A regional geospatial needs assessment conducted by SERVIR-Mekong during 2014-2015 and subsequent consultations with regional and national institutions highlighted a gap in reliable information on past, present, and forecast drought conditions and related crop yields. Additional consultations facilitated by the Mekong River Commission have further underscored the need for additional decision support resources in this critical area of planning and decision-making.

A **Regional Drought & Crop Yield Information System (RDCYIS)** is currently being developed as a direct response to this need. The system is designed to improve the ability of diverse end users to prepare for and respond to drought conditions in the Lower Mekong Region. In consultation with stakeholders in the region and international experts, a decision was taken to leverage a system called the Regional Hydrologic Extreme Assessment System (RHEAS) that was originally developed by a team from NASA's Jet Propulsion Laboratory (NASA-JPL) for use in East Africa. In general, the RHEAS framework links two widely used models: the Variable Infiltration Capacity (VIC) hydrological model and the Decision Support System for Agro-Technology Transfer (DSSAT) model. Additional code and customization provides for automation of the data assimilation and output functions of the system. It also allows coupling of other environmental models and facilitates the delivery of data products to users via a GIS enabled database. Development of the system is ongoing with technical inputs and support being provided by SERVIR-Mekong, NASA-JPL, MRC's Drought Management Team, national agency partners, the International Rice Research Institute, and others.

This stakeholder consultation workshop builds on a numerous consultations with individual agencies and individuals and comes on the heels of the second of two technical production workshops where partners have helped accelerate production and operationalization of the system. It also marks the inception of a 3 year program being implemented by a team at NASA-JPL who received a NASA "Applied Science Team" grant to support the development and deployment of the RDCYIS.

Workshop Summary and Objectives

This stakeholder workshop will bring together stakeholders ranging from technical co-production partners to representatives of relevant government agencies to further develop a shared understanding of the objectives and design of the RDCYIS and how end users will be able to benefit from it. To that end, there will be ample opportunity for questions and discussion. A stakeholder mapping exercise will be conducted on the second day of the workshop to understand and document the needs, roles, and contributions of stakeholders and how information will flow among these actors.

Principal workshop outcomes will be:

- Increased understanding, refinement of, and consensus on the objectives of the RDCYIS;
- Increased awareness and understanding of NASA-JPL's critical role in development of the system;
- Increased understanding of the roles, contributions from, and benefits to the diverse

stakeholders related to the system.

Participants

- Representatives from SERVIR-Mekong consortium partners ADPC, Spatial Informatics Group, Stockholm Environment Institute, and Deltares
- The NASA-JPL RHEAS implementation team
- Representatives from regional and national institutions involved in water and drought management including the Mekong River Commission, national water, hydro-meteorological, and agricultural agencies
- Representatives from international technical partners such as the International Rice Research Institute (IRRI)
- Representatives from academic institutions working with SERVIR-Mekong to develop and support the RDCYIS and other products and services

Organizers

The workshop is being organized by SERVIR-Mekong in partnership with NASA-Jet Propulsion Laboratory.

SERVIR-Mekong: Through a unique partnership between the [U.S. Agency for International Development \(USAID\)](#) and the [U.S. National Aeronautics and Space Agency \(NASA\)](#), SERVIR-Mekong is harnessing space technology and open data to help address development challenges related to a environmental sustainability. A five-year (2014-2019) geospatial data-for-development program, SERVIR-Mekong works in partnership with leading regional organizations to help the five countries in the Lower Mekong Region use information provided by Earth observing satellites and geospatial technologies to manage environmental risks. The region includes Cambodia, Lao PDR, Myanmar (Burma), Thailand and Vietnam. SERVIR-Mekong is being implemented by the Asian Disaster Preparedness Center (ADPC) and its technical partners Spatial Informatics Group (SIG), Stockholm Environment Institute (SEI), and Deltares.

NASA's Jet Propulsion Laboratory: The Jet Propulsion Laboratory is a federally funded research and development center managed for NASA by Caltech. JPL is a global innovation leader with a long history of successfully implementing programs in planetary exploration, Earth science, space-based astronomy and technology development. Technology developed by JPL to enable space missions is also applied on Earth to benefit everyday lives. JPL is currently assisting SERVIR-Mekong in developing the RDCYIS and generally building the capacity of the SERVIR-Mekong team in the areas of remote sensing information assimilation, management and analysis and hydrological and crop yield modeling.

Workshop Dates: 30 and 31 March, 2017

General Agenda (*A more detailed agenda will be distributed to participants prior to the event*)

Day	Topics / Themes	Outputs / Outcomes
1	<u>AM</u> <ul style="list-style-type: none"> • Presentation and discussion of the Regional Drought and Crop Yield Information System 	<ul style="list-style-type: none"> • Increased understanding and refinement of the purpose, scope, production plan, and



	<ul style="list-style-type: none"> ● Presentation and discussion of the NASA-JPL technical support component <p><u>PM</u></p> <ul style="list-style-type: none"> ● Review production plan and opportunities for participation and collaboration ● Identify key information flows and implications for data sharing agreements, technical capacity building, etc. 	<p>implementation plan for the RDCYIS</p> <ul style="list-style-type: none"> ● Identification of priority actions
2	<p><u>AM</u></p> <ul style="list-style-type: none"> ● Conduct stakeholder / information flow mapping exercise <p><u>PM</u></p> <ul style="list-style-type: none"> ● Summarize roles and contributions of stakeholders ● Wrap-up session 	<ul style="list-style-type: none"> ● Document stakeholder expectations, roles, and contributions