

## **GLOBAL FLOOD ALERT SYSTEM (GFAS) – A NEW INFORMATION SYSTEM UTILIZING SATELLITE RAINFALL DATA TO SUPPORT FLOOD FORECASTING AND WARNING**

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The IWRM perspective, which is currently being implemented in the world, involves how we make choices as to how to manage the risk of flooding; and what we do to manage those risks. The International Flood Network (IFNet) is acting to reduce flood damage throughout the world, and promoting policies aimed at decisively breaking the cycle of poverty and environmental destruction by facilitating international cooperation in flood management.

The Global Flood Alert System (GFAS) is an attempt to make the best use of satellite rainfall data which is observed by earth observation satellites and provided in binary forms on the NASA ftp page. The concept of GFAS is collaboration between:

- Space agencies such as NASA, JAXA, as satellite rainfall data providers,
- Infrastructure Development Institute-Japan (IDI) as system developer and operator,
- IFNet as network of information transmission,
- Hydrological services/river authorities as responsible agencies of flood forecasting and warning.

GFAS converts the data into global and regional rainfall maps, text global rainfall data, and heavy rain information by probability estimates etc. in order to provide existing flood forecasting and warning activities of another source of hydrological data.

It also sends emails of heavy rain notification to official hydrological services on request. When the mean basin rainfall of registered river basins exceeds a predetermined threshold (5-year or 10-year return periods), email is automatically sent to the registered address. A trial run of the system with the aim of satellite data verification is launched on the IFNet website since early April 2006. Currently, the email information service is scheduled to one organization in Thailand, one in Cambodia and two in Lao PDR.

Although the effectiveness of satellite rainfall data in flood forecasting has yet to be examined, this approach is expected to be particularly relevant to such conditions as; large rivers where upstream rainfall takes several days to reach downstream; transboundary rivers where information from the upper reaches may not be conveyed effectively to the lower reaches; as well as rivers without telemetry systems.

The IFNet secretariat is continuing with the verification of satellite data information with conventional rainfall data from ground stations in order to improve the quality of information and provide users with a better service tailored to their requirements.