Value addition for sector-specific impact products

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9th RIMES Council Meeting
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Port Moresby, Papua new Guinea

SESAME

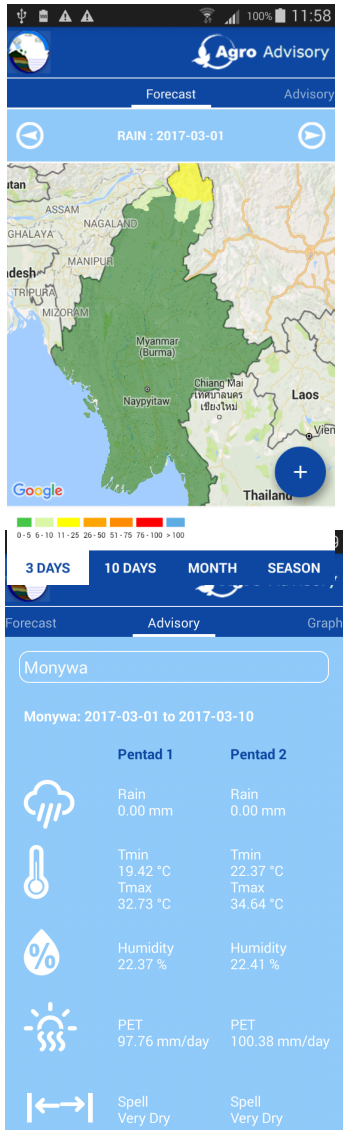
Specialized Expert System for Agro-Meteorological Early Warning for Climate Resilient Agriculture

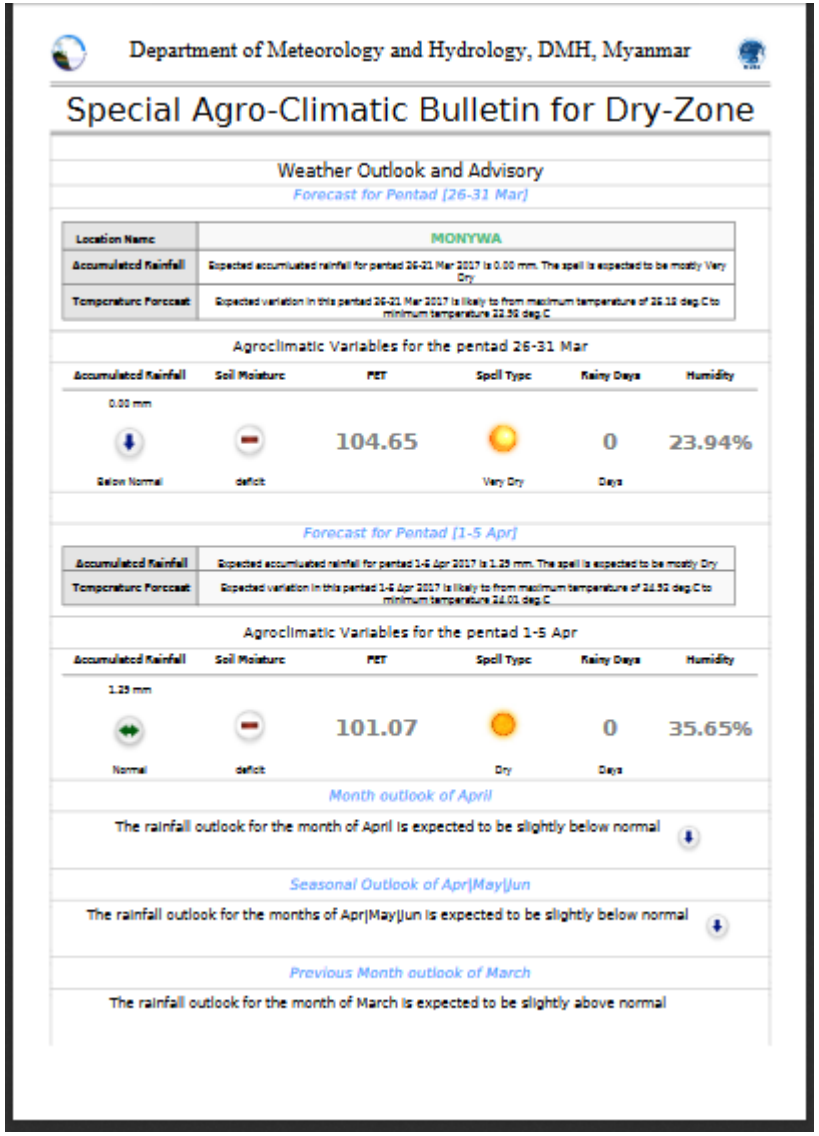
SESAME

- Dynamic Crop information panel for expert users
- Weather bulletins for Pentads, monthly and seasonal outlooks
- Real time verification of forecast products
- Generate Contingency plan
- Prepare your own crop specific advisory

SESAME – Specialized Expert System for Agro-Meteorological Early Warning for Climate Resilient Agriculture

- Dissemination of information
  - Email service
  - SMS service, through gateways
  - Fax service
- Mobile application
  - Android version - Beta

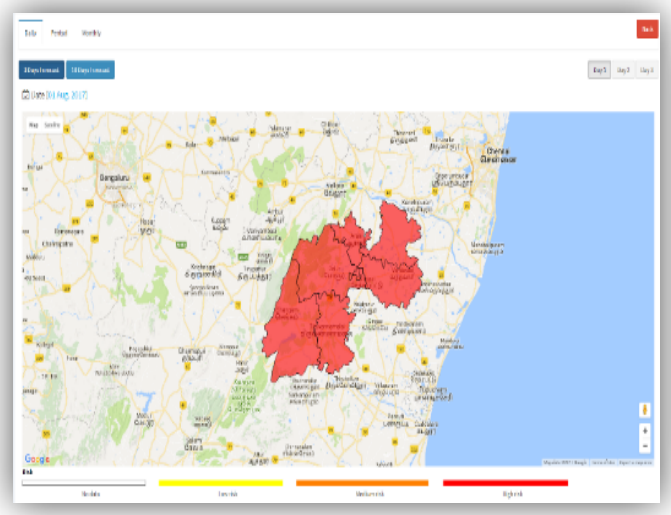


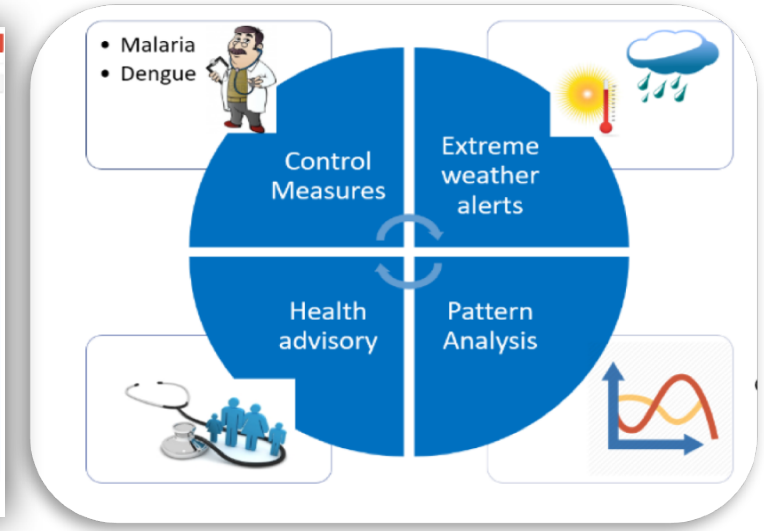


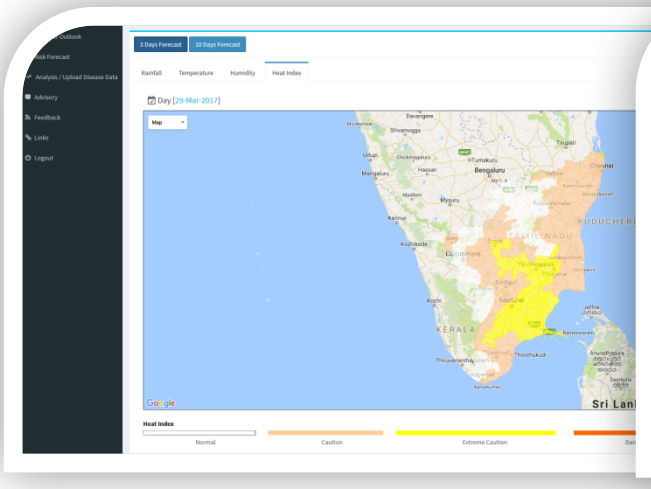
Climate Risk Information System for public Health

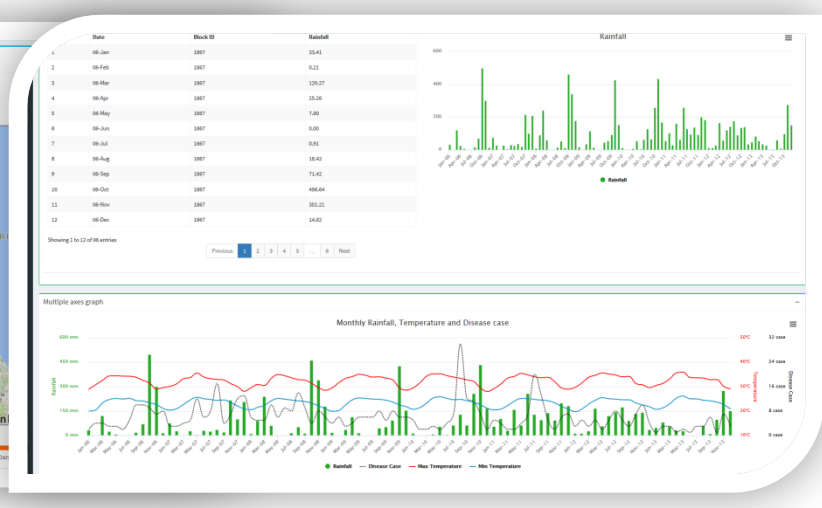
CRISH

- Portal for public health warning information
- Extreme heat indicators,
- Building Correlation-disease pattern and weather conditions
- Risk based information for Malaria and Dengue spreading
  - piloted in two districts in Tamil Nadu, India
  - At taluk level
- Generation of health Advisories



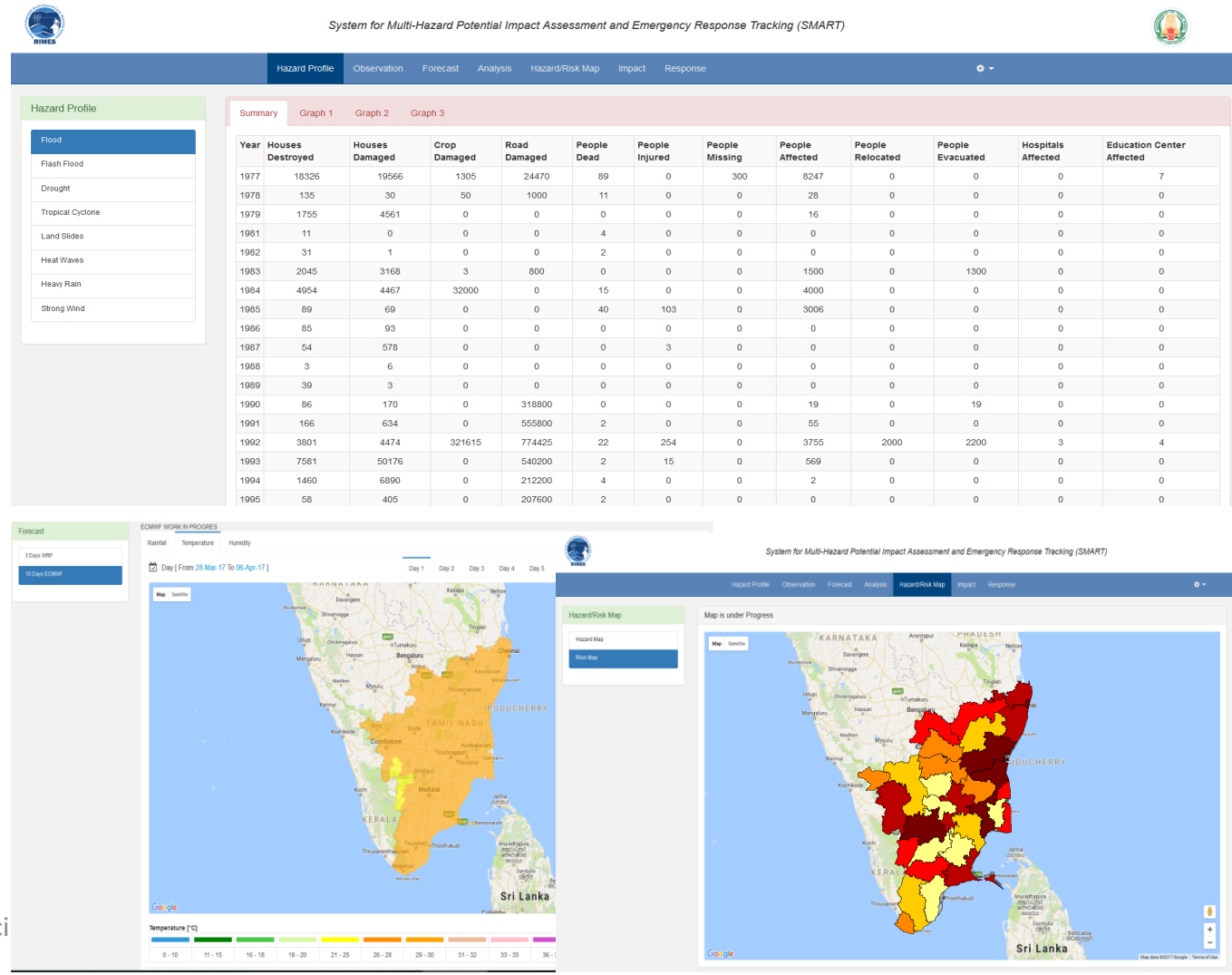






SMART – System for Multi-Hazard potential impact Assessment and Emergency Response Tracking

- Integrated platform for Disaster response
- Block level Disaster profiles
- Assessment of historical disaster events
- Real time monitoring of weather parameters
- Short- medium range forecast and extreme event alerting
- Analysis – Evaluation of forecast performance
- Generation of risk information based on weather forecast at different time scales
- Integration of EDEN SAHANA for response and resource allocation – **work under progress**



Flood Forecast and Advisory System

RIMES Flood Advisory Systems

RIMES support member countries to develop and enhance:

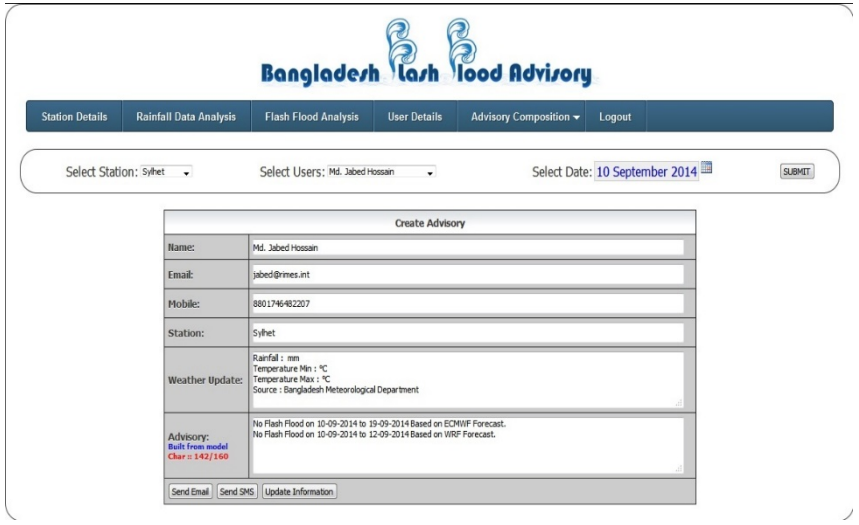
- Medium range (1-10 days) flood forecast
- Flash Flood Guidance System
- Long range (1-3 month) hydrological outlook

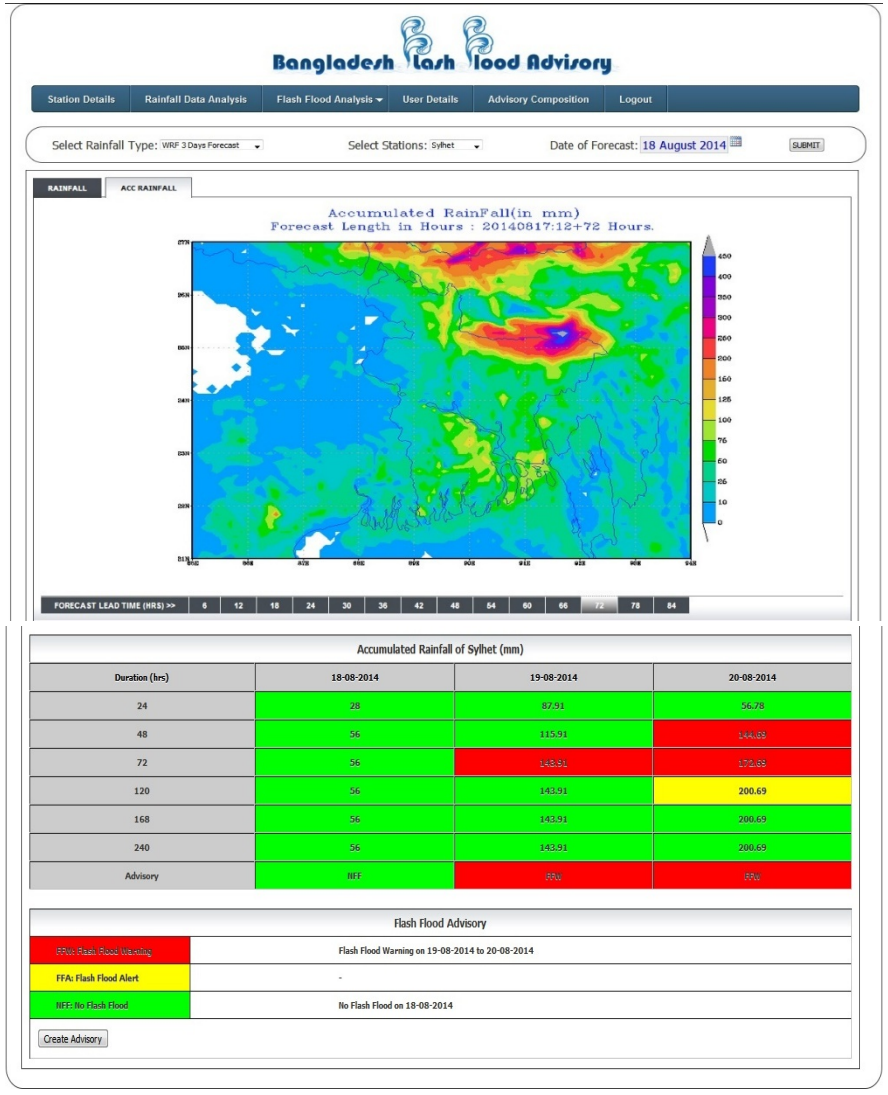
Water Sector Operational Systems

- Bangladesh – 10 days flood forecast, flash flood forecast, seasonal flow outlook
- Myanmar – 72 hours flood forecast
- Nepal – 72 hours flood forecast
- Philippines – 72 hours flood forecast
- Sri Lanka – 72 hours flood forecast, reservoir management tool

Flash Flood Warning and advisory System

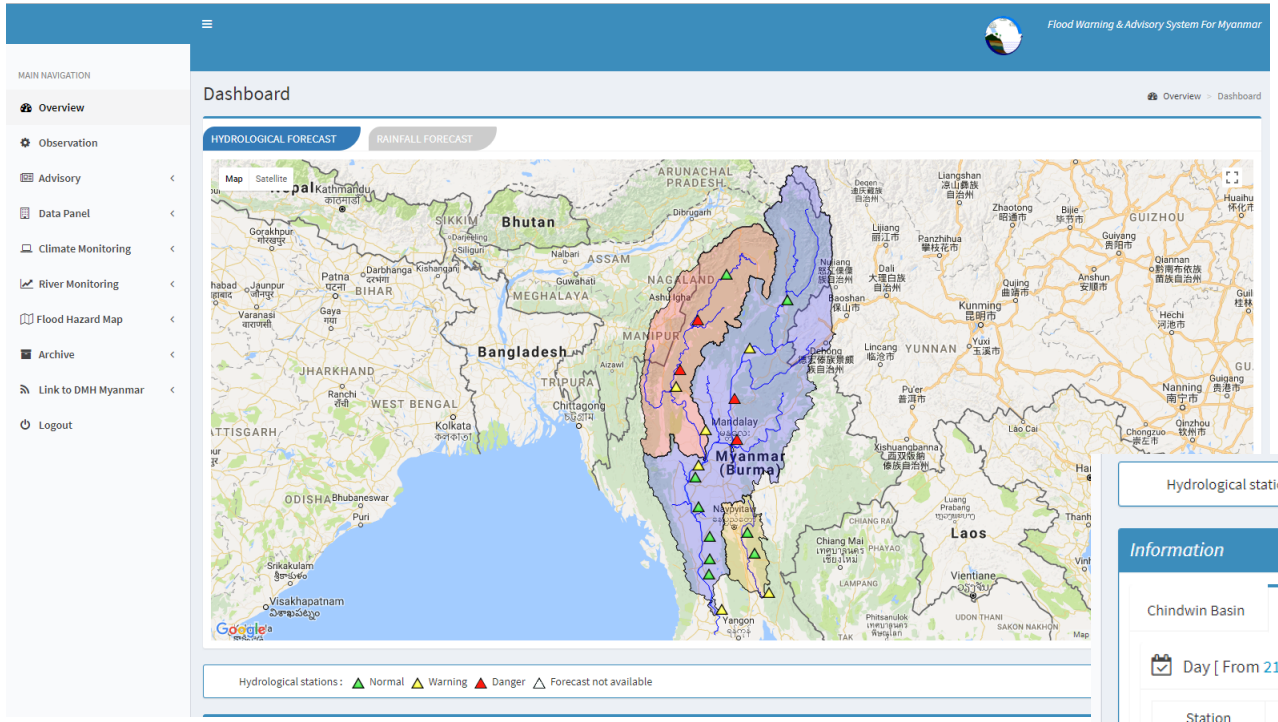
1) Based on 72 hours downscaled WRF Forecast
2) 10 Days Deterministic ECMWF forecast
3) Threshold based approach





Myanmar Flood Advisory System

http://203.159.16.215/myanmar_flood/index.php/home



72-hours lead time flood forecast operational for Ayeyarwady, Chindwin and Sittaung rivers

Hydrological stations : Normal Warning Danger Forecast not available

Information

Chindwin Basin | Ayeyarwady Basin | Sittaung Basin

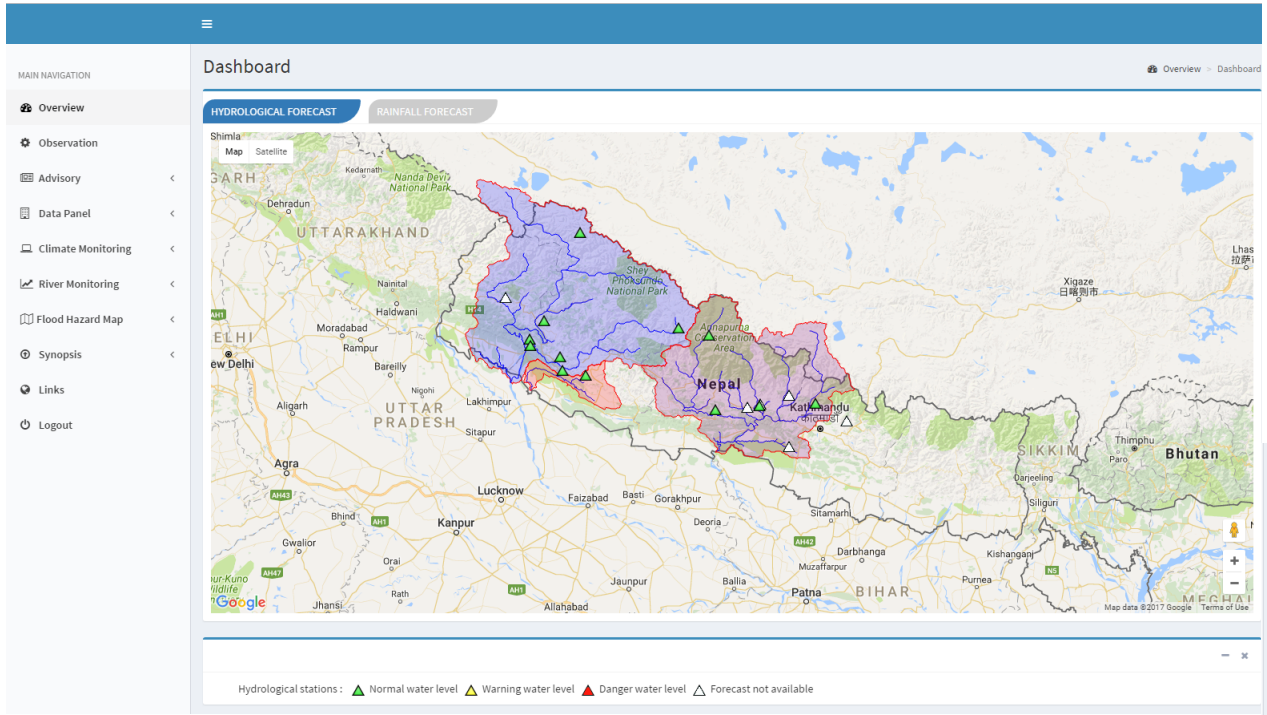
Day [From 21-Aug-2017 To 23-Aug-2017]

Day 1 | Day 2 | Day 3

Station	Status	Forecasted Flow Q (m3/s)	Forecasted Water Level H (m)	Warning Water Level H (m)	Danger Water Level H (m)
Myitkyina	Below Warning Level	8518.00	6.15	11.00	12.00
Katha	Above Warning Level	15566.00	9.99	9.40	10.40
Sagaing	Above Danger Level	26476.00	11.83	10.50	11.50
NyaungOo	Above Warning Level	30272.00	20.70	20.20	21.20
Chauk	Below Warning Level	27236.00	12.81	13.50	14.50
Magway	Below Warning Level	28965.00	14.49	16.00	17.00
Aunglan	Below Warning Level	30833.00	23.25	24.50	25.50
Pyay	Below Warning Level	32829.00	27.08	28.00	29.00
Seiktha	Below Warning Level	31656.00	10.51	11.00	12.00
Zalun	Above Warning Level	28106.00	11.12	10.60	11.60
Thabeikyin	Above Danger Level	21664.00	14.68	10.40	11.60

Nepal Flood Advisory System

http://203.159.16.215/nepal_flood/index.php/home



72-hours lead time flood forecast operational for Narayani, Karnali and Babai rivers

Hydrological stations : Normal gage height Warning gage height Danger gage height Forecast not available

Information

Day [From 31-Mar-2017 To 02-Apr-2017]

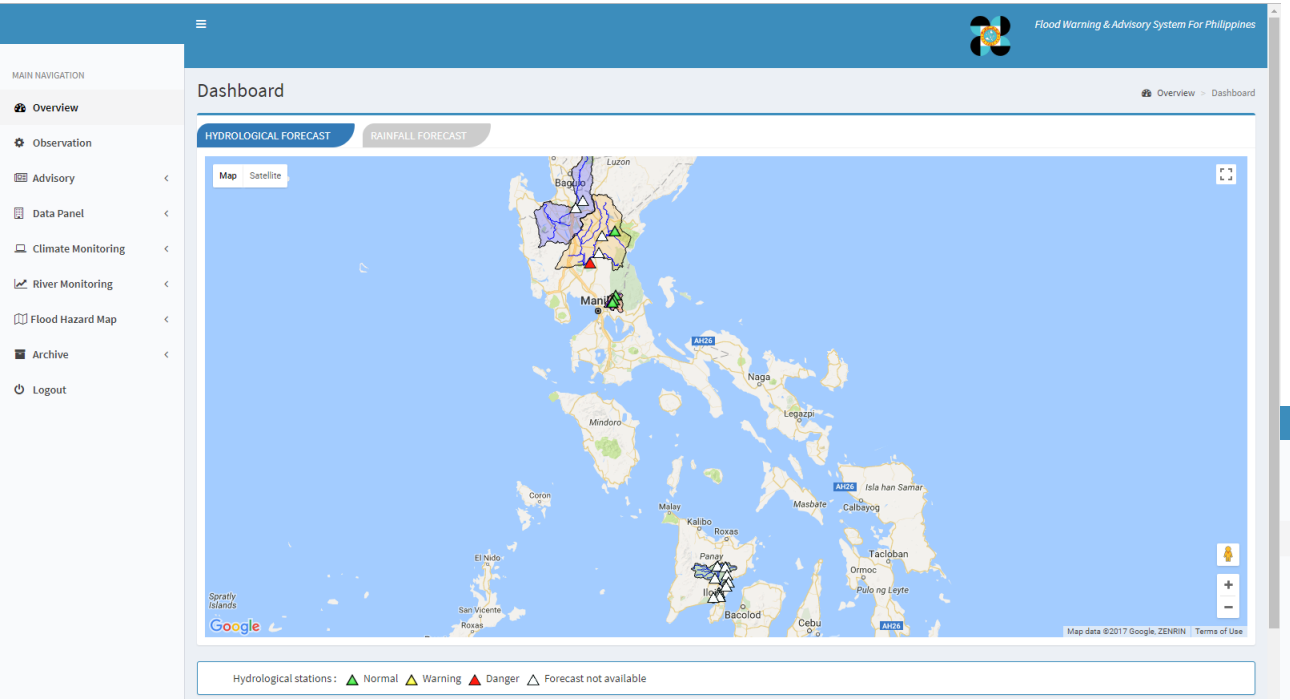
Notes

Station	Day 1	Day 2	Day 3	Estimated Discharge Q (m3/s)	Estimated Gage Height H (m)	Warning Gage Height (H)	Danger Gage Height (H)
Betrawoti	Below Warning Level			55.00	1.18	4.50	4.90
Devghat	Below Warning Level			249.00	0.95	7.70	8.70
Jomsom	Below Warning Level			11.00	1.18	4.10	5.10
Kumalgaun	Below Warning Level			77.00	1.17	7.80	8.80
Asaraghat	Below Warning Level			427.00	2.23	6.10	6.50
Chisapani	Below Warning Level			482.00	3.60	11.90	12.90
Samaijighat	Below Warning Level			41.00	1.35	7.30	7.80
Humlakarnali	Below Warning Level			398.00	2.91	4.60	5.60
Thulobheri	Below Warning Level			41.00	1.37	5.80	6.80
Bheri	Below Warning Level			482.00	3.34	5.50	6.50
Chepang	Below Warning Level			15.00	1.07	5.50	6.10
Daredhunga	Below Warning Level			1.00	0.68	5.50	6.10

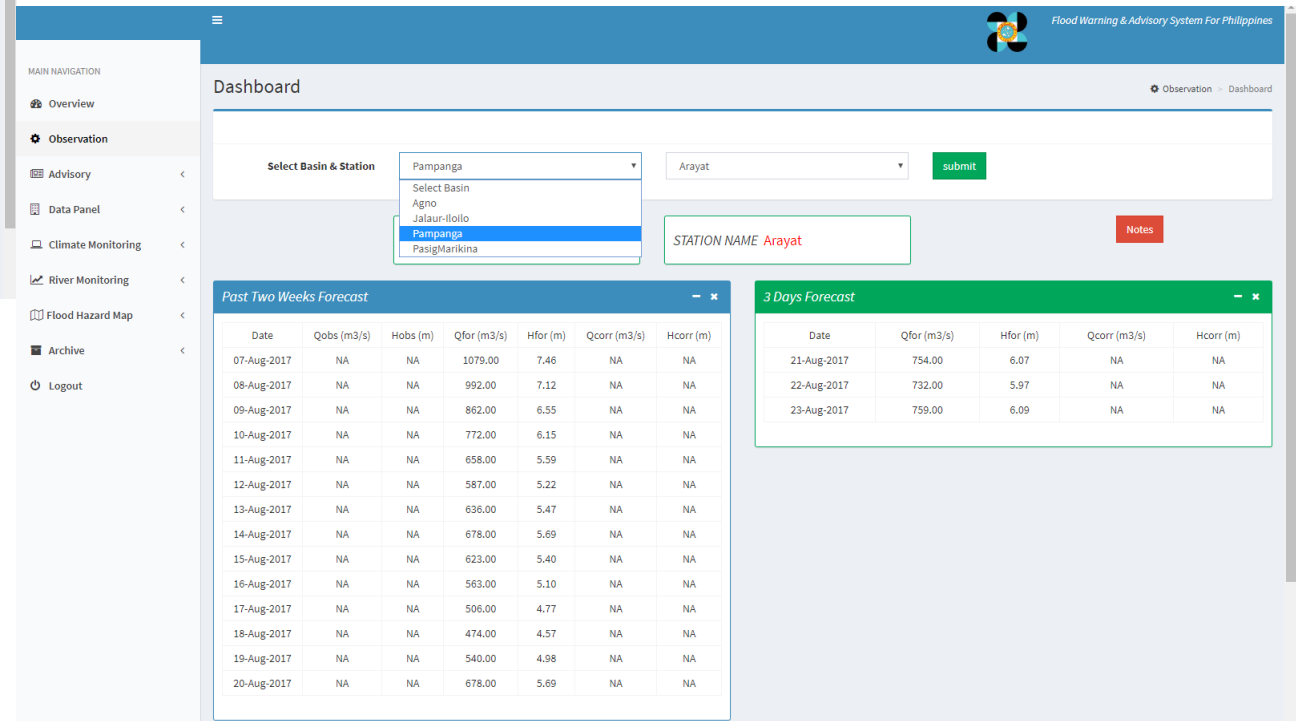
Philippines Flood Advisory System

http://203.159.16.215/philippines_flood/index.php/home

Dashboard



72-hours lead time flood forecast functional for Agno, Pampanga and Pasig-Marikina rivers

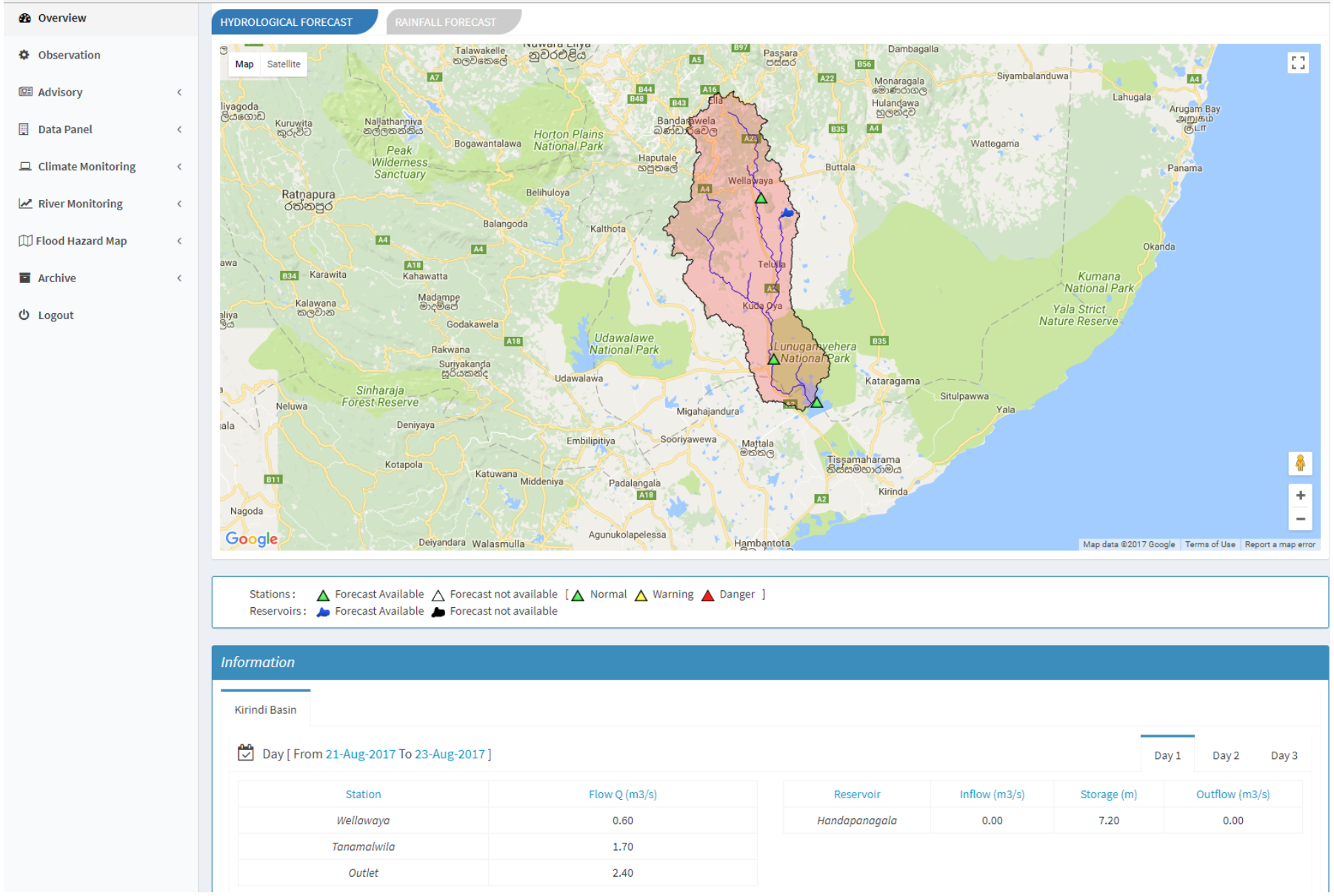


Date	Qobs (m3/s)	Hobs (m)	Qfor (m3/s)	Hfor (m)	Qcorr (m3/s)	Hcorr (m)
07-Aug-2017	NA	NA	1079.00	7.46	NA	NA
08-Aug-2017	NA	NA	992.00	7.12	NA	NA
09-Aug-2017	NA	NA	862.00	6.55	NA	NA
10-Aug-2017	NA	NA	772.00	6.15	NA	NA
11-Aug-2017	NA	NA	658.00	5.59	NA	NA
12-Aug-2017	NA	NA	587.00	5.22	NA	NA
13-Aug-2017	NA	NA	636.00	5.47	NA	NA
14-Aug-2017	NA	NA	678.00	5.69	NA	NA
15-Aug-2017	NA	NA	623.00	5.40	NA	NA
16-Aug-2017	NA	NA	563.00	5.10	NA	NA
17-Aug-2017	NA	NA	506.00	4.77	NA	NA
18-Aug-2017	NA	NA	474.00	4.57	NA	NA
19-Aug-2017	NA	NA	540.00	4.98	NA	NA
20-Aug-2017	NA	NA	678.00	5.69	NA	NA

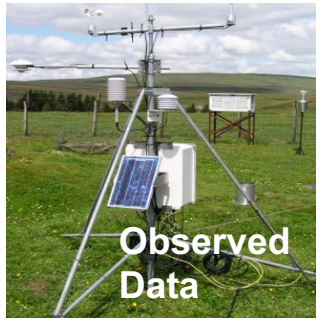
Date	Qfor (m3/s)	Hfor (m)	Qcorr (m3/s)	Hcorr (m)
21-Aug-2017	754.00	6.07	NA	NA
22-Aug-2017	732.00	5.97	NA	NA
23-Aug-2017	759.00	6.09	NA	NA

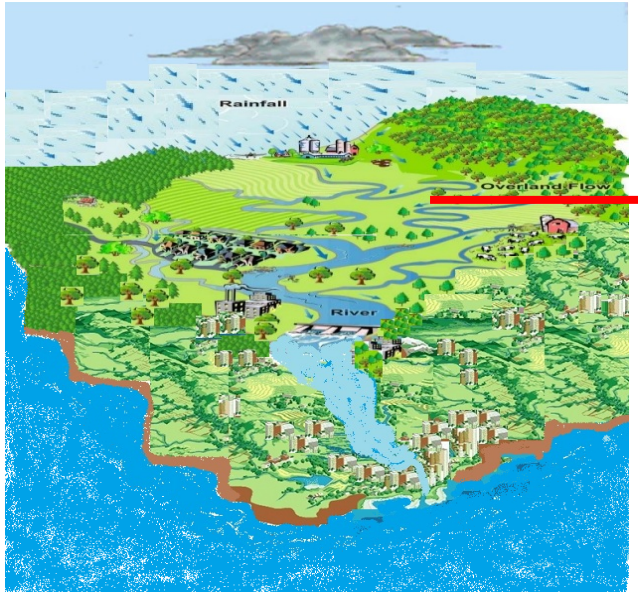
Sri Lanka Flood Advisory System

http://203.159.16.215/srilanka_flood/index.php/home



Reservoir Management System

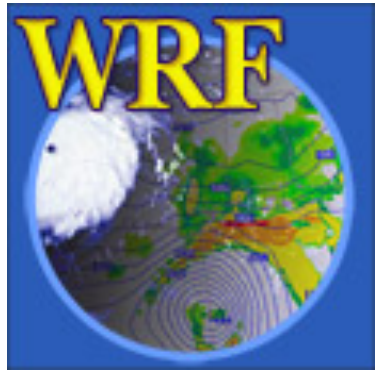




Modelling system

HEC-HMS
WEAP

Weather Forecast

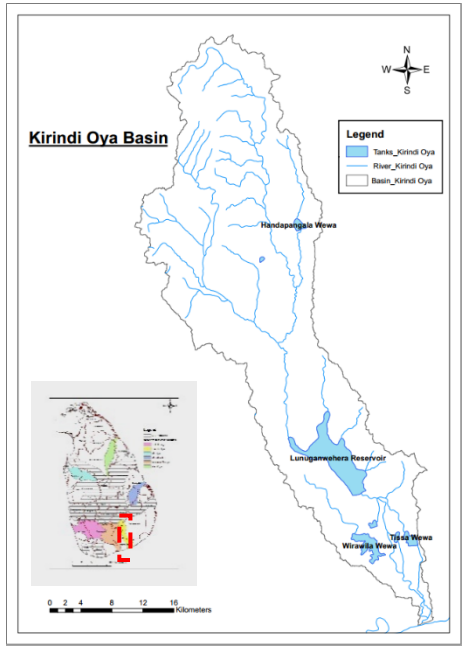


DOI

Instructions

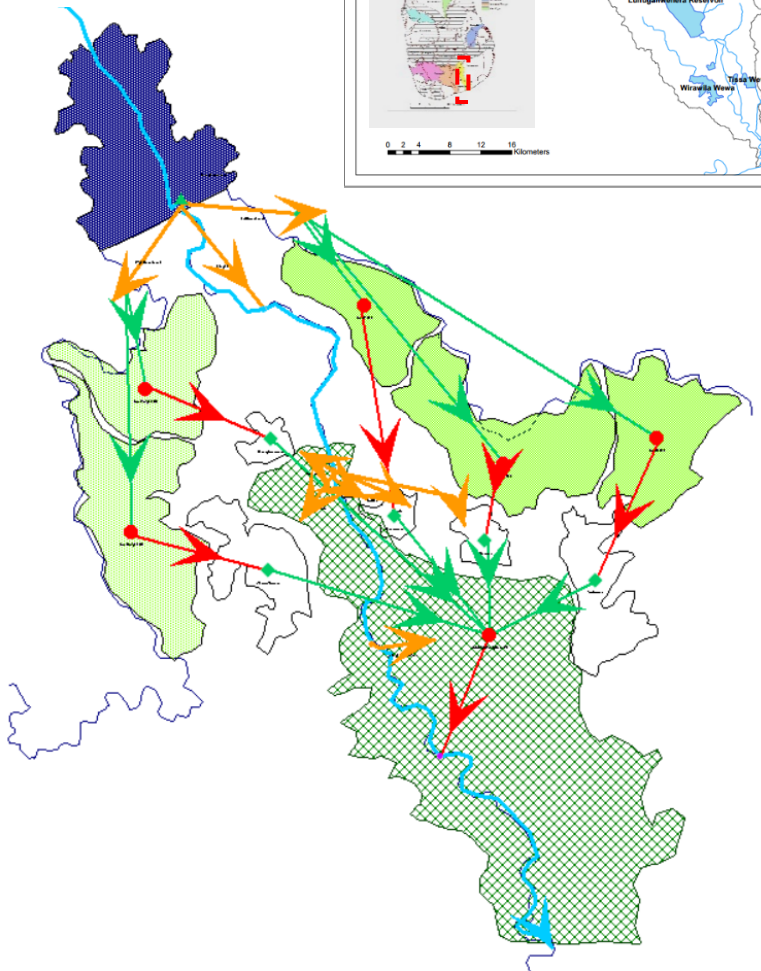
Reservoir release/
Management Decisions

Reservoir Management System



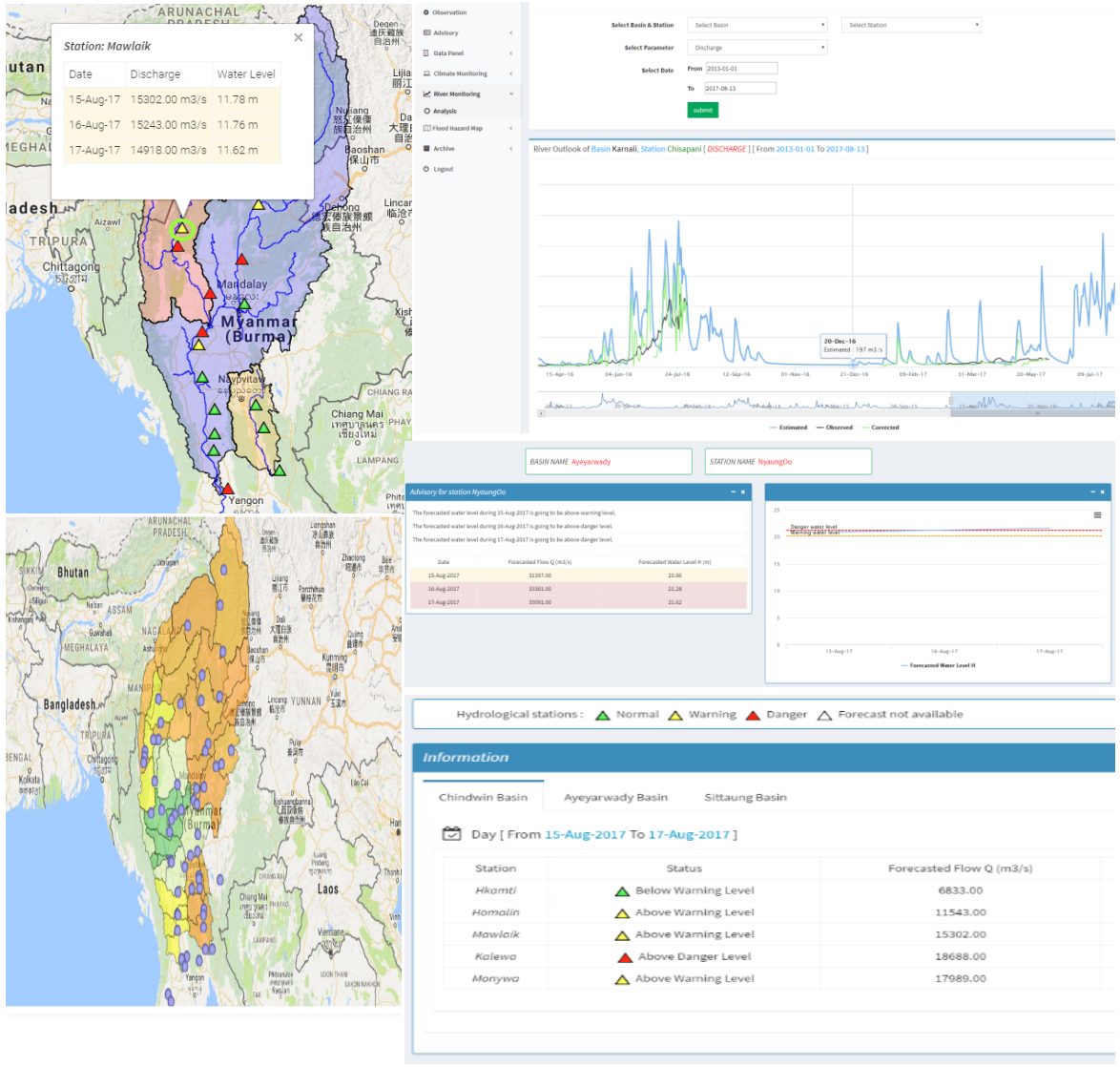
Connect climate information with irrigation and agriculture in Kirindi Oya basin, Sri Lanka

- Provides a mechanism to issue timely flood warning and, a suitable institutional/coordination arrangement
- Improved reservoir operation and management plans, which incorporate and synchronize the role of large, medium and small water storages, to mitigate the impact of floods
- Enhance the capacity to operate reservoirs and manage the river basin with a flood management objective



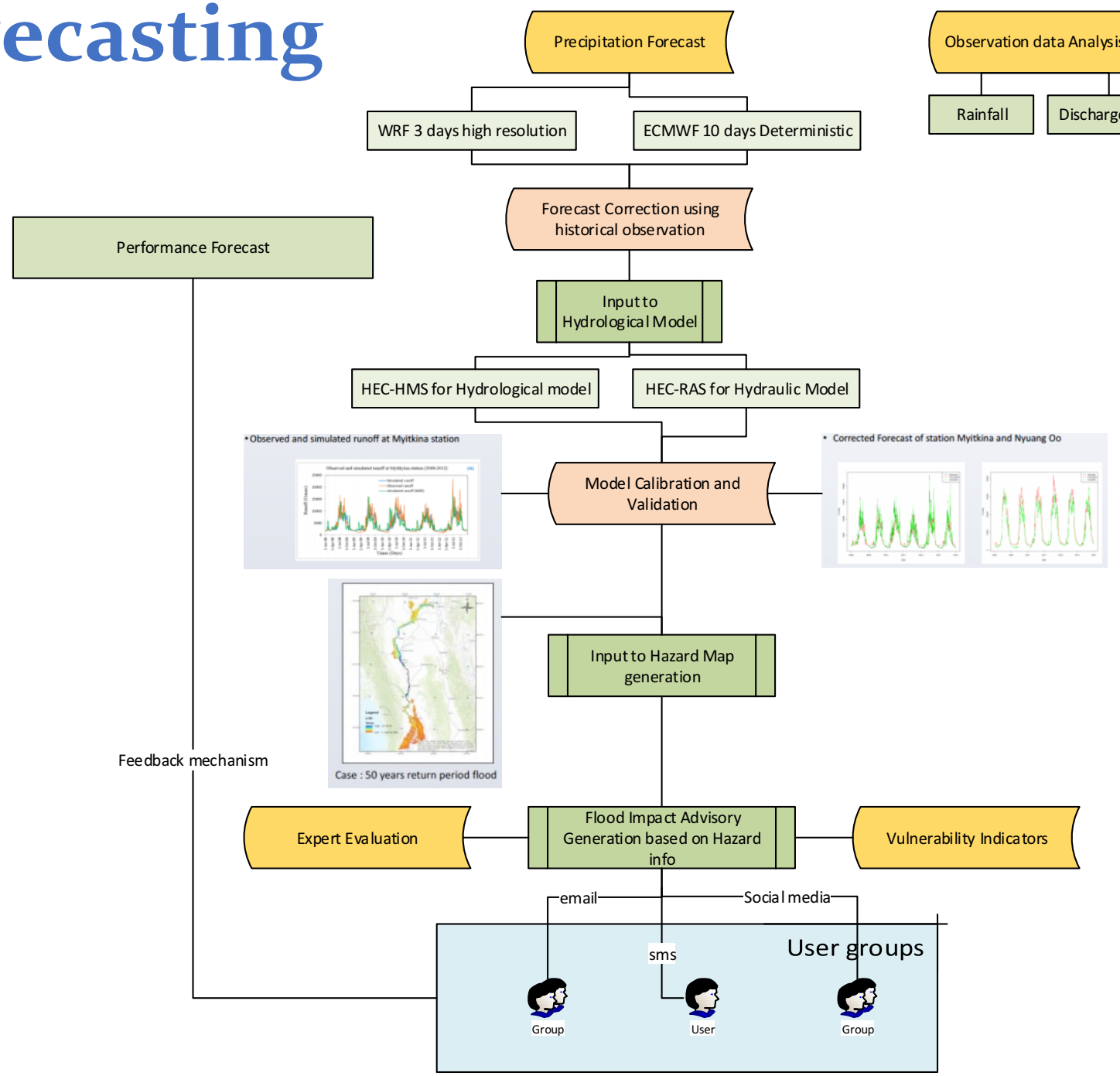
Flood Forecasting System

- Web based Decision Support tool
- 72 hours lead time forecast for Water level and discharge for selected locations in the river basins
- Real time monitoring of the river situations and color-coded advisories for warning levels
- Flood Advisory generation and dissemination with mapping of flood risk for the selected locations in the river basins
- Hazard Map generation for different return period of flood hazards
- Warning message formulation and dissemination mechanism



Flood Forecasting System

An Integrated Approach



Technical Capacity building

Capacity Building on using the DSS and products

RIMES Secondment Program

- Involve met services and users during the development process
- Capable of handling the system once it is transferred

Training at Pilot Locations

- Train the real users on the usability of new product
- Train met services on product development

Training on development of tool at RIMES Office

Training to DMH Officers at DMH office

Training to stakeholders at Nyuang Oo on 7th September 2015

Training to stakeholder at Monywa on 8th September 2015

Capacity building for Agro-Advisory Services

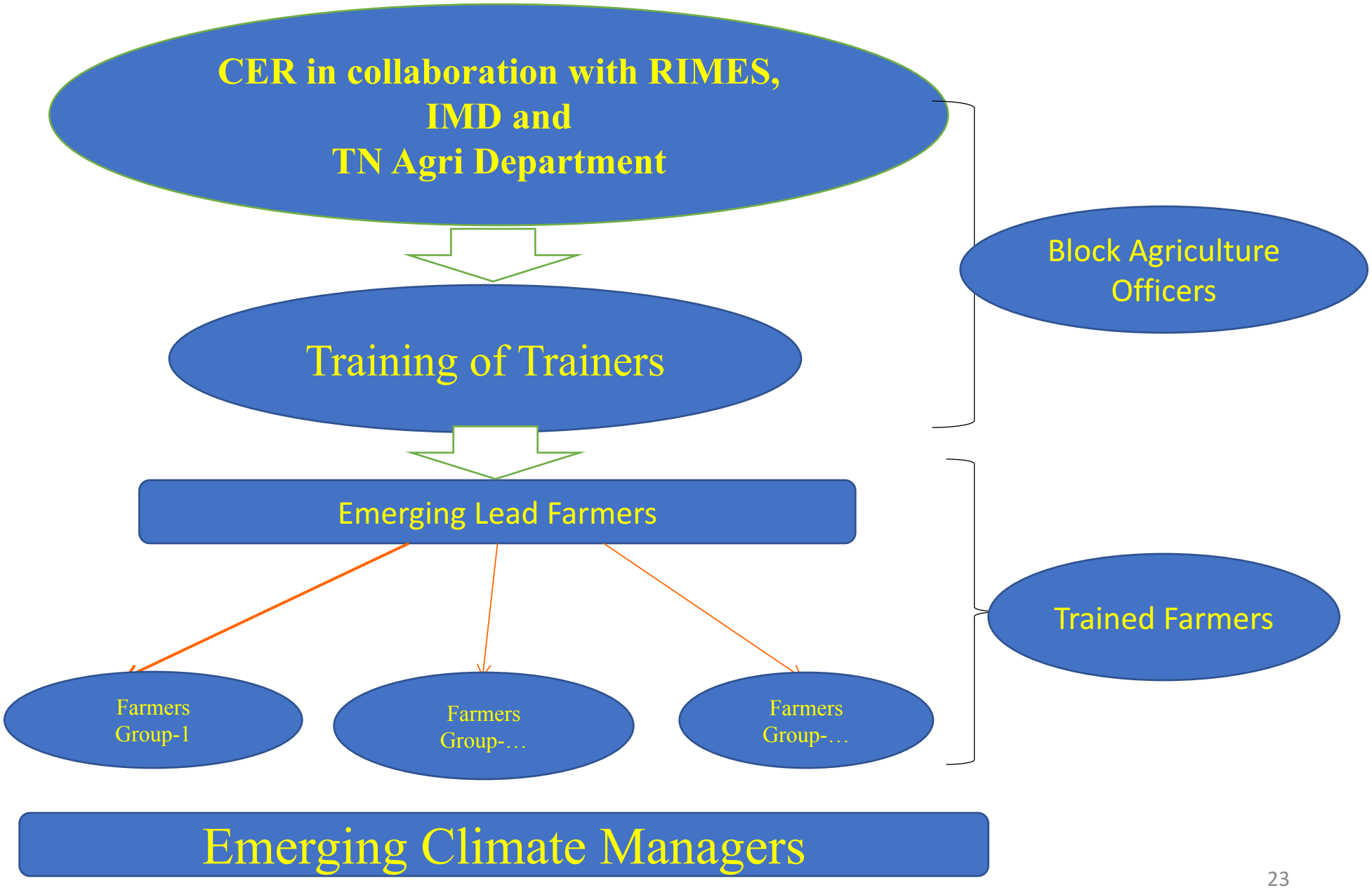
CRMFFS process provide customized modules for the Agriculture Department officials, extension workers and Farmers with help of local partners including NMHSs, Agriculture Department and local NGOs.

Goal: Increased capacity of farmers to understand the weather forecast and make use of it in their regular farming operations.

Objective: To employ methodologies to make scientific processes related to weather and climate understandable to farmers and to enhance its utilization in regular farming

LEARNING CONTRACT ⇨ WEATHER & CLIMATE ⇨ APPLICATION TO FARM ⇨ Small Infra for Flood and Drought Control ⇨ FIELD DAY

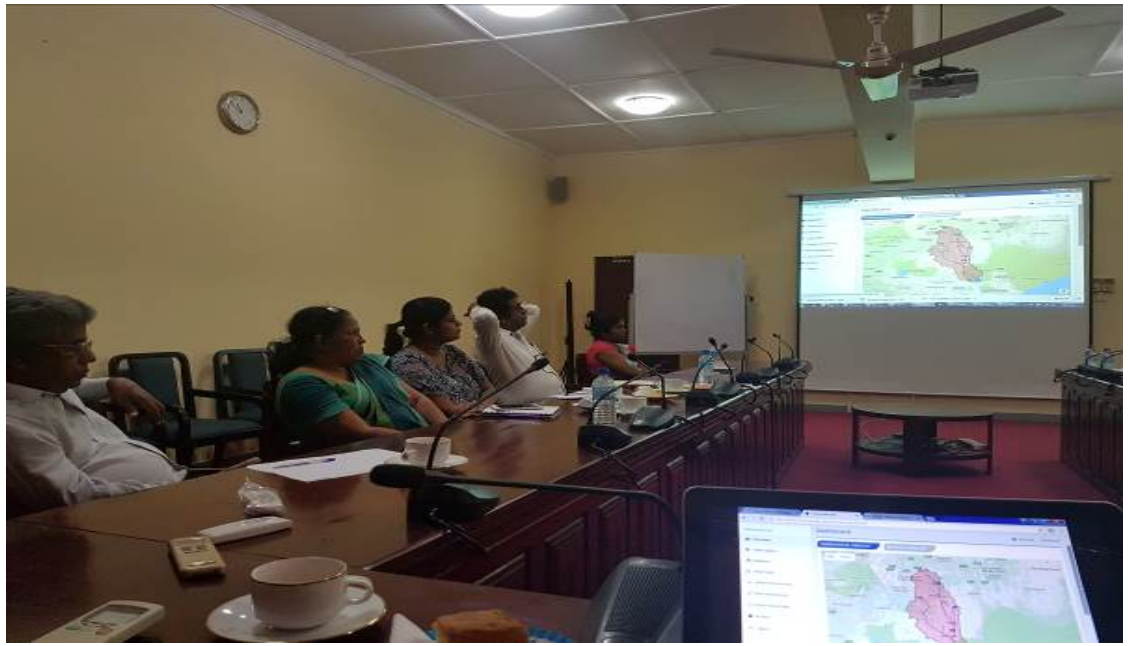
Multi Cycle Training Approach (Example from India)



Capacity Building on using the DSS and products

Training and Capacity Building

Training and Capacity Building



Continuous Support

1) Continuous engagement
   1) with technical team with series of training
   2) Technology transferred
   3) Backup support to all activities irrespective of project period
2) Feedback on the effectiveness of the information
3) Research and development for further improvement

As soon as I receive the forecast by SMS, I discuss with other members of UDMC and UP, and even share it with my children.
This year, we successfully used the forecast in preparing the seedbed for paddy.
- Md. Shahidul Islam


Regional Integrated Multi-Hazard Early Warning System
RIMES

Thank you