



Stakeholders meeting
Dhaka, February 2019



Using climate information to increase farmers' resilience in Bangladesh

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CIMMYT - Bangladesh



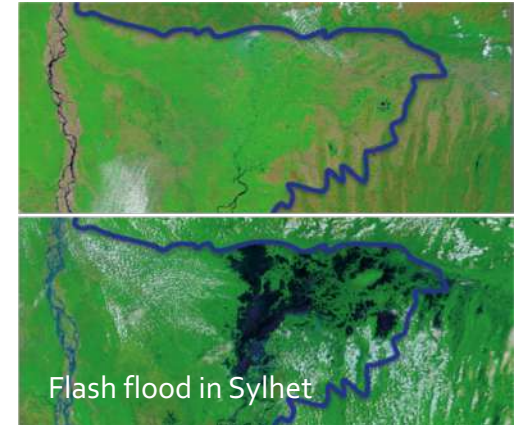
Climate variability and agriculture in Bangladesh

Monsoonal climate: high seasonality in precipitation and temperature

- **Amounts:** Water supply for *kharif* season crops
- **Timing:** land preparation, date of sowing and transplanting
- Consequences for *rabi* season crops: heat stress due to late planting date

Environmental hazards

- Bangladesh ranks as the sixth most food-prone country in the world
- Dry-season rainfalls: physical damage to crops



Institutional context: partnerships and objectives

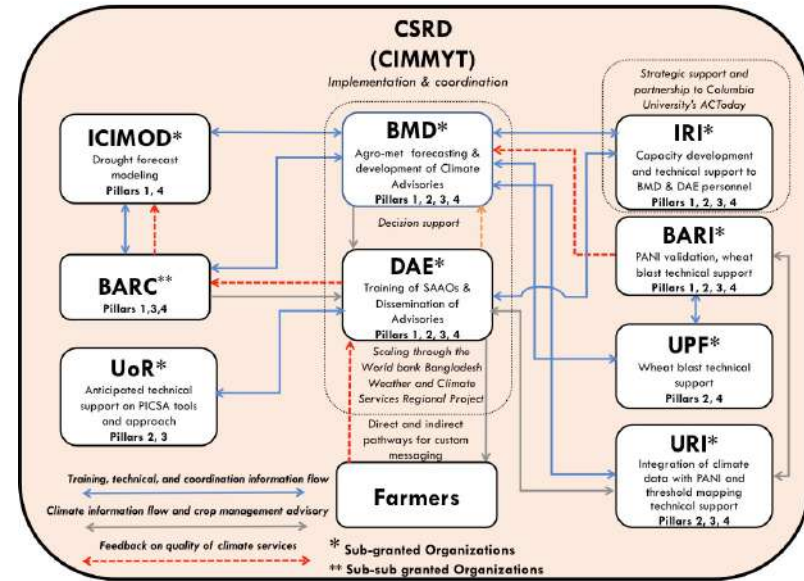


Collaboration



Key activities using climate information

- Updating meteorological forecasts: weather, seasonal
- Development of decision support platforms: communication
- Climate services capacity development
- Crop diseases and climate: wheat blast and lentil blight disease
- Regional drought forecasting decision support



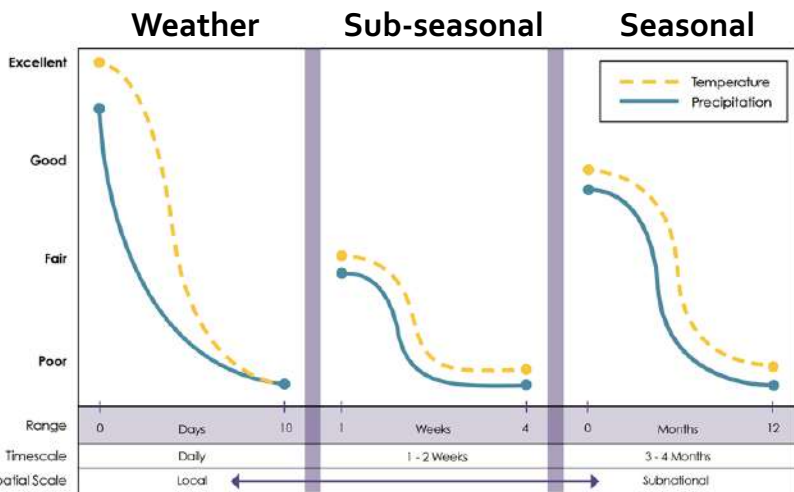
Field activities, research, training

Climatic forecasting for agriculture in Bangladesh

Variable in space and time scales

- Weather (daily)
- Sub-seasonal (1-2 weeks)
- Seasonal (3-4 months)
- Local (farms)
- Regional

Predictability associated to different scales, variables and mechanisms

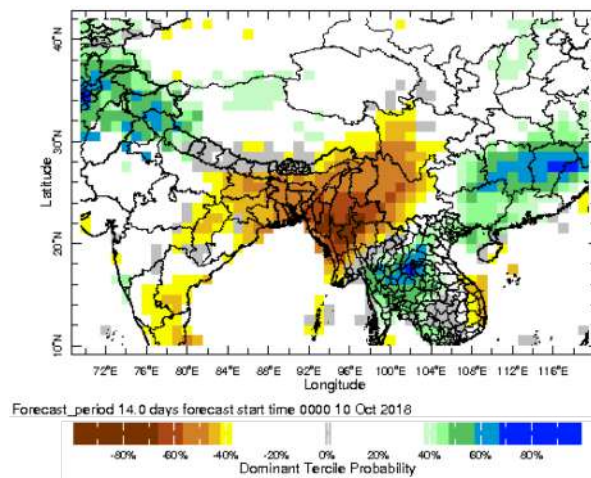


Multimodel probabilistic forecast generated from climate models

Global forecasts

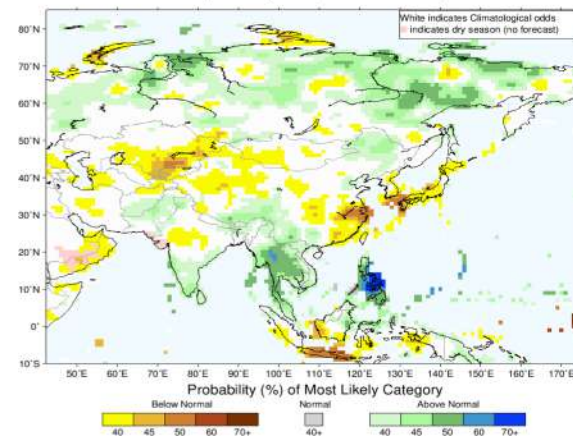


Sub-seasonal



Seasonal

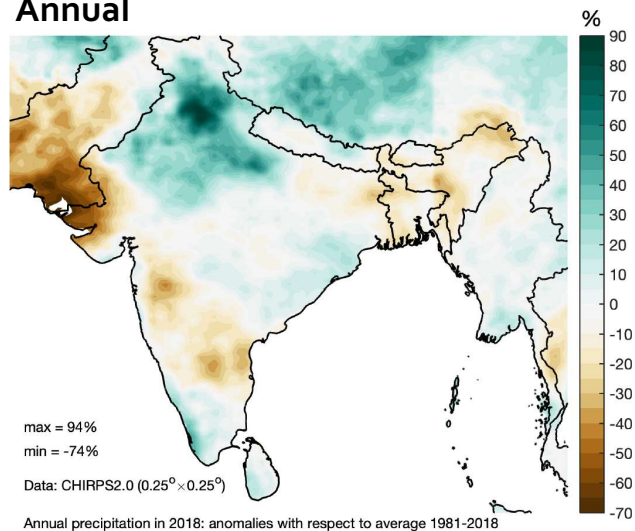
IRI Multi-Model Probability Forecast for Precipitation for March–April–May 2018, Issued February 2018



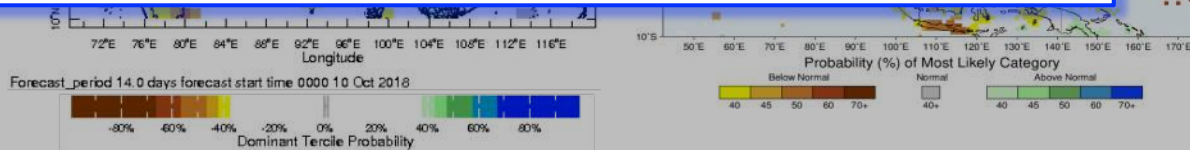
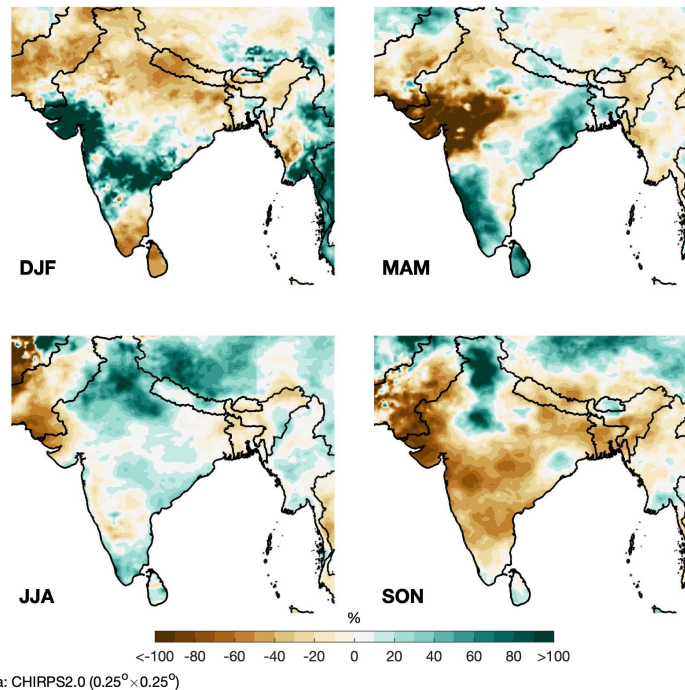
Climatic forecasting for agriculture in Bangladesh

2018 was a *dry* year in Bangladesh

Annual



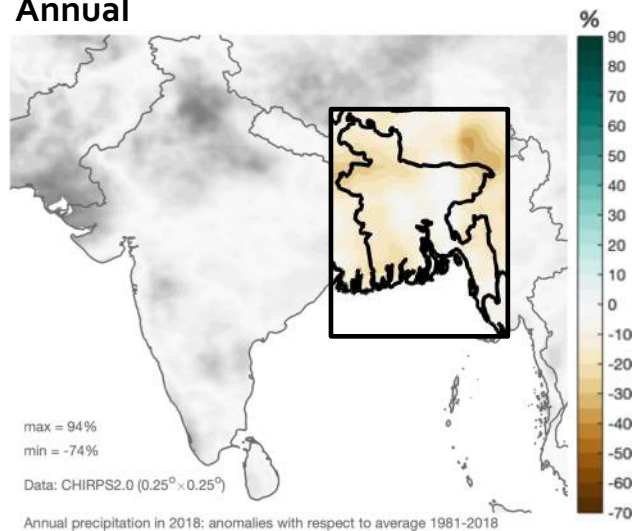
Seasonal



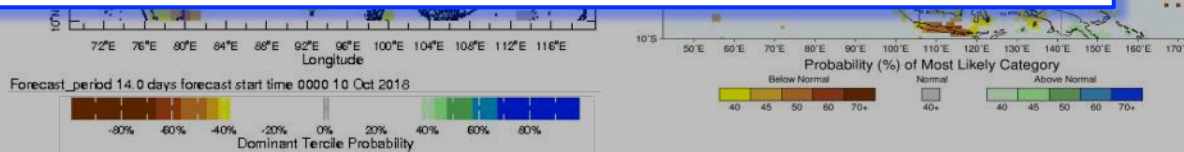
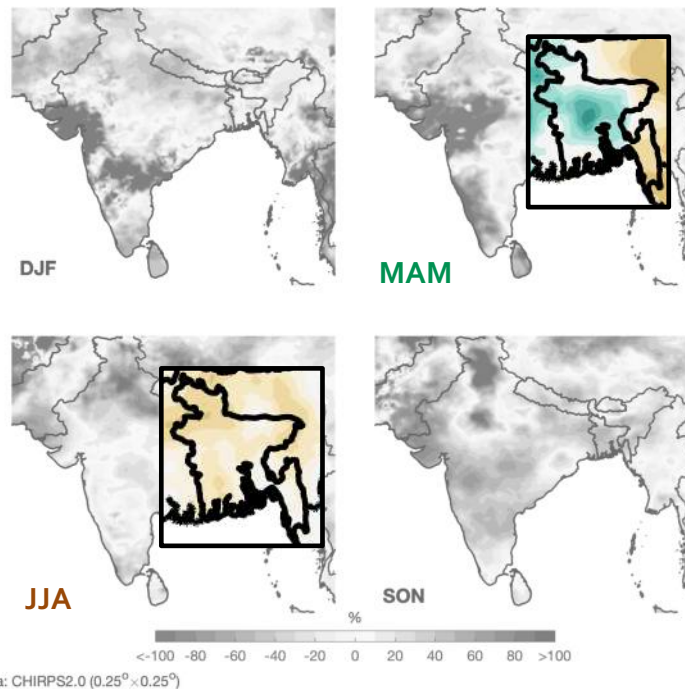
Climatic forecasting for agriculture in Bangladesh

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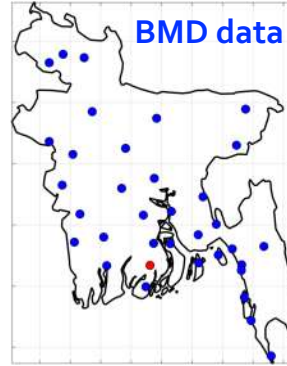


Weather forecasting for agriculture in Bangladesh

Example: heavy rainfall events



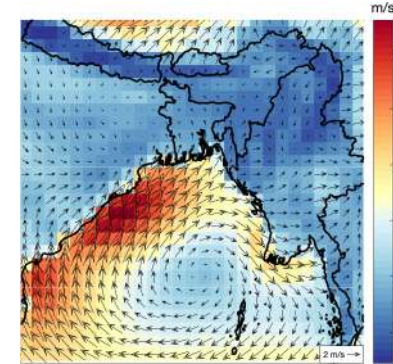
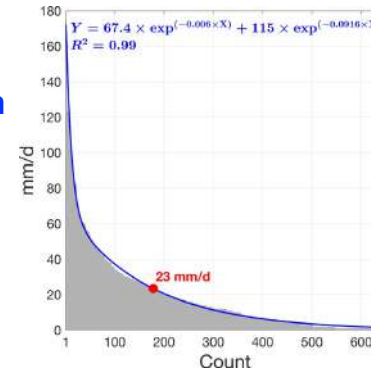
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Information



Identification and characterization



A sequence of positive feedback activities

Farmer's information needs
Decision making frameworks

Available forecasting
Available local data
Publicly available information

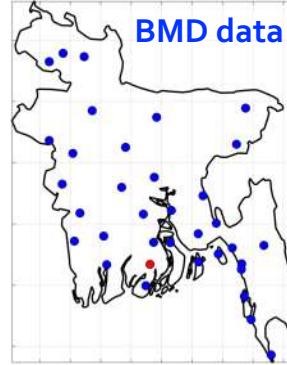
Communication
Advisory dissemination options

Weather forecasting for agriculture in Bangladesh

Example: heavy rainfall events



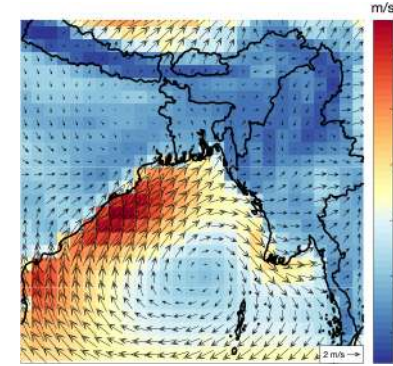
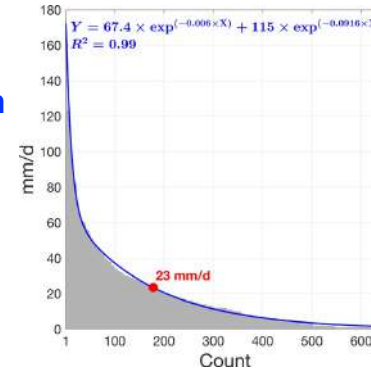
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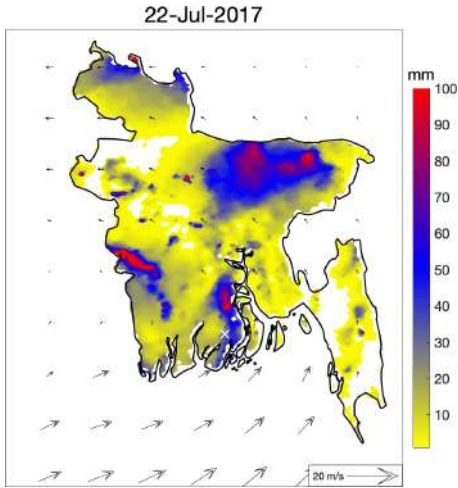
Information



Identification and characterization



WRF* deterministic forecasting generated by BMD: approach



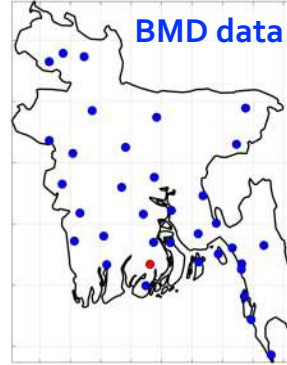
Satellite information
Daily rainfall

Weather forecasting for agriculture in Bangladesh

Example: heavy rainfall events



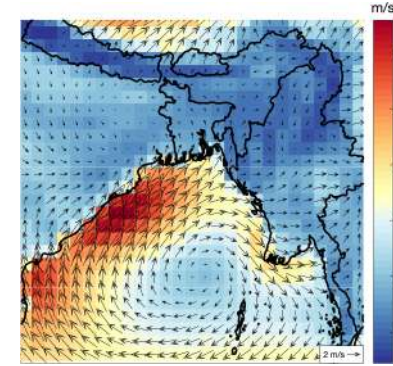
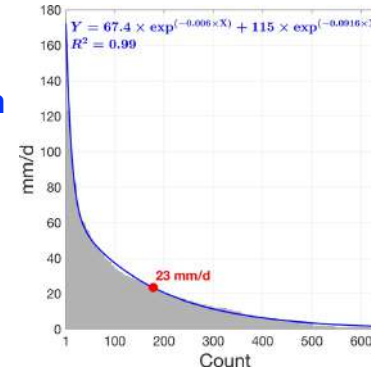
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Information

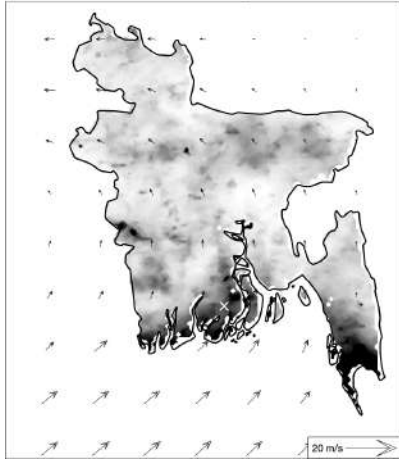


Identification and characterization

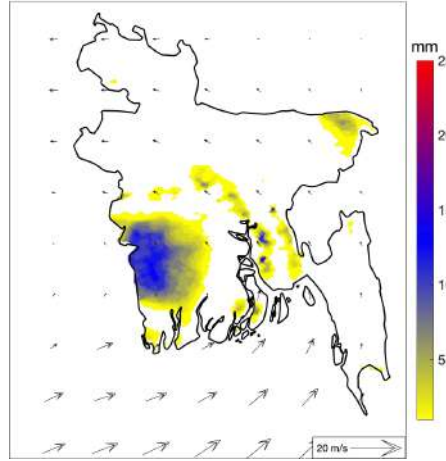


WRF* deterministic forecasting generated by BMD: approach

Mean 23-27 July 2017



22-Jul-2017 00:00:00



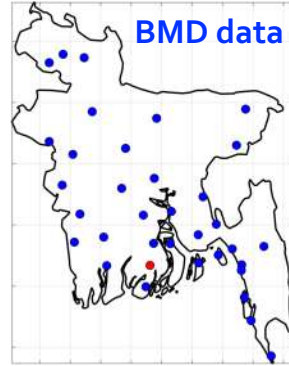
Satellite information
Hourly rainfall

Weather forecasting for agriculture in Bangladesh

Example: heavy rainfall events



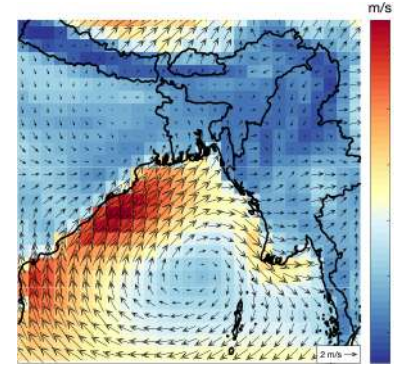
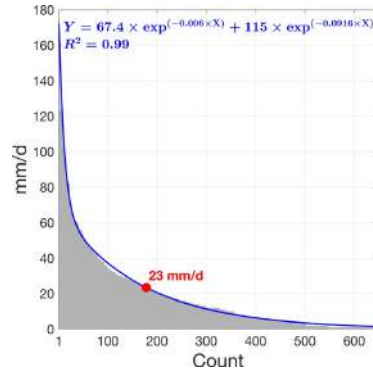
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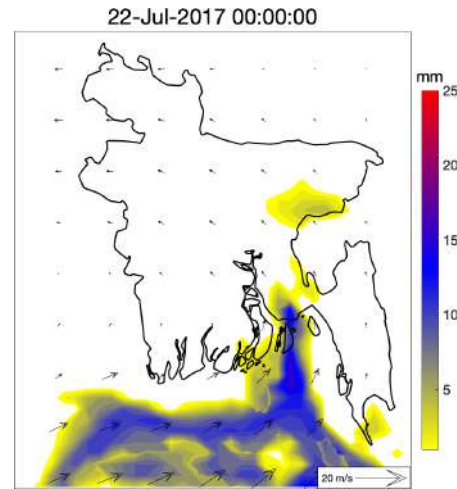
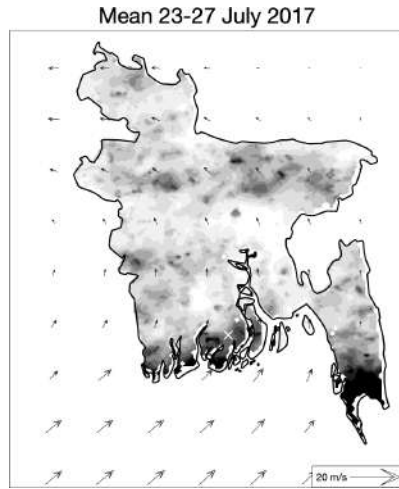
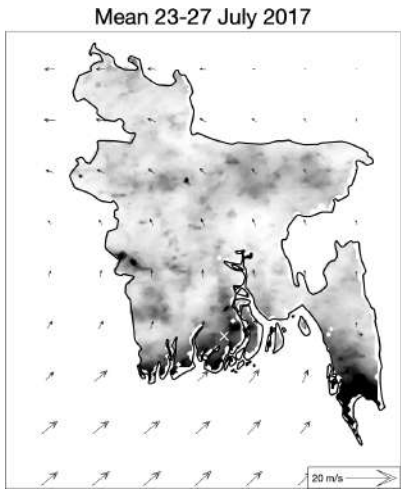
Information



Identification and characterization



WRF* deterministic forecasting generated by BMD: approach

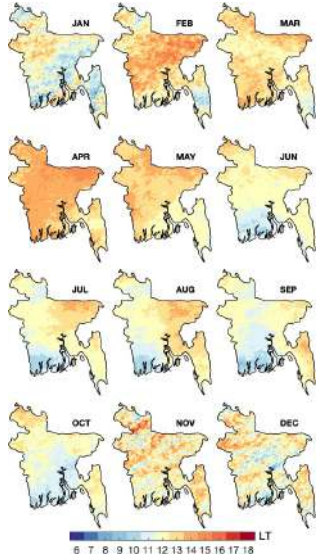


BMD forecasting
3-hourly rainfall

Exam

Weather forecasting information and climatological products

Time of maximum intensity



WRF from BDM



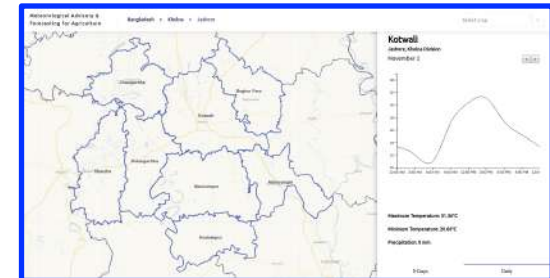
Division level



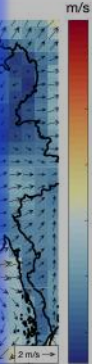
District level



Upazilla level



- Agromet information for upazillas
- Advisories for specific crops, locations and seasons



WR



Thank you

