Early warning Early action

Science meets the Federation

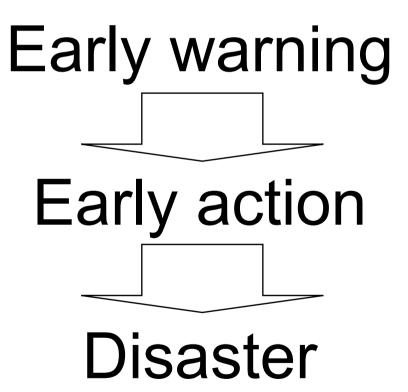
Improved early warning can have a significant impact on a more strategic approach to disaster response

Standard approach

Disaster

Reaction

New approach

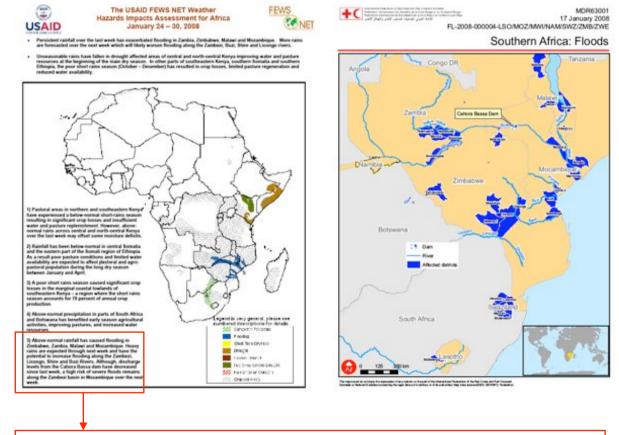


Seasonal forecast

IRI Multi-Model Probability Forecast for Precipitation for February-March-April 2008, Issued January 2008 Above-normal Precipitation N Near-normal Precipitation 8 Below-normal Precipitation D Dry Season Masking Probability (%) of Most Likely Category

One week forecast

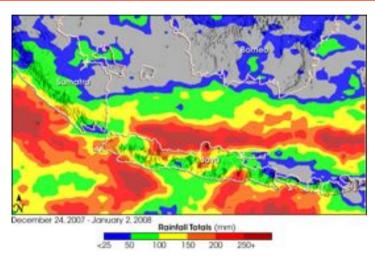




Above-normal rainfall has caused flooding in Zimbabwe, Zambia, Malawi and Mozambique. Heavy rains are expected through next week and have the potential to increase flooding along the Zambezi, Licongo, Shire and Buzi Rivers. Although, discharge levels from the Cahora Bassa dam have decreased since last week, a high risk of severe floods remains along the Zambezi basin in Mozambique over the next week.

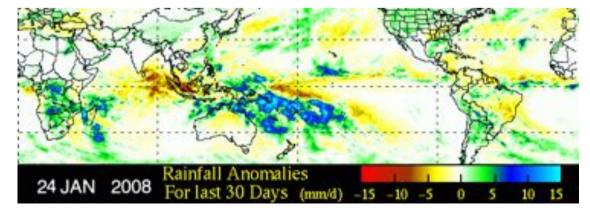
Science can help

 We can monitor the rainfall but we do not have analysis capacities

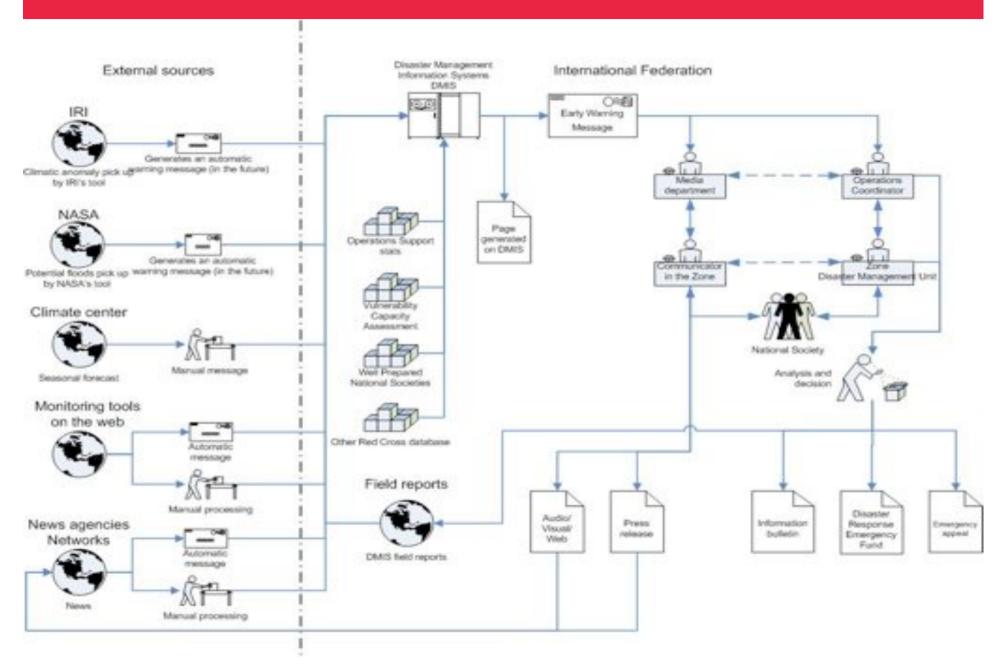


Scientists do. They can tell us if it is an anomaly

or not



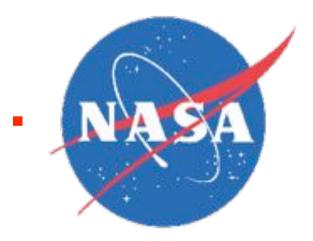
International Federation of Red Cross and Red Crescent Societies



Partners

Two scientific institutes want to work with us





IRI





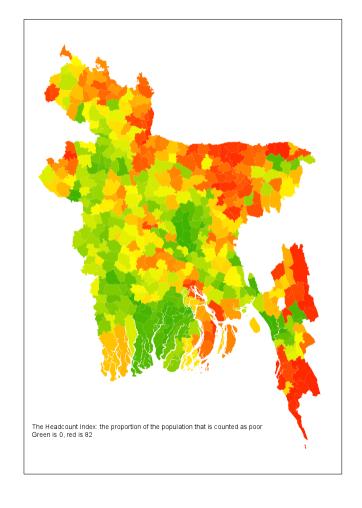
Partnership to save lives

- IRI is developing for the International Federation a map-based system to identify climatic anomalies
 - Population
 - Vulnerability (CIESIN)
 - Seasonal and extreme forecast
 - Sudden event
 - Anomalies
- Later, an automatic warning system will be implemented, with triggers



CIESIN (Center for International Earth Science Information Network)

- Specializes in on-line data and information management, spatial data integration
- Will provide data on population, poverty, vulnerability, ...



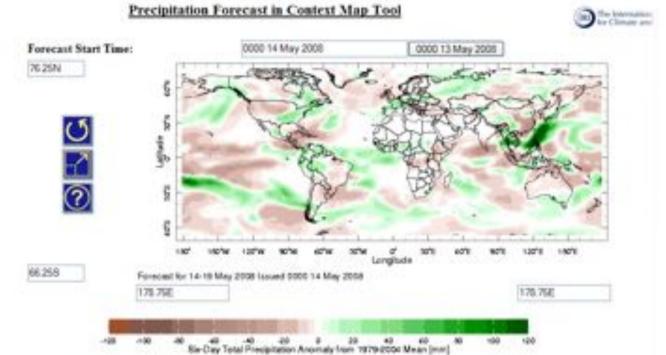
International Federation of Red Cross and Red Crescent Societies



matructions

help@el

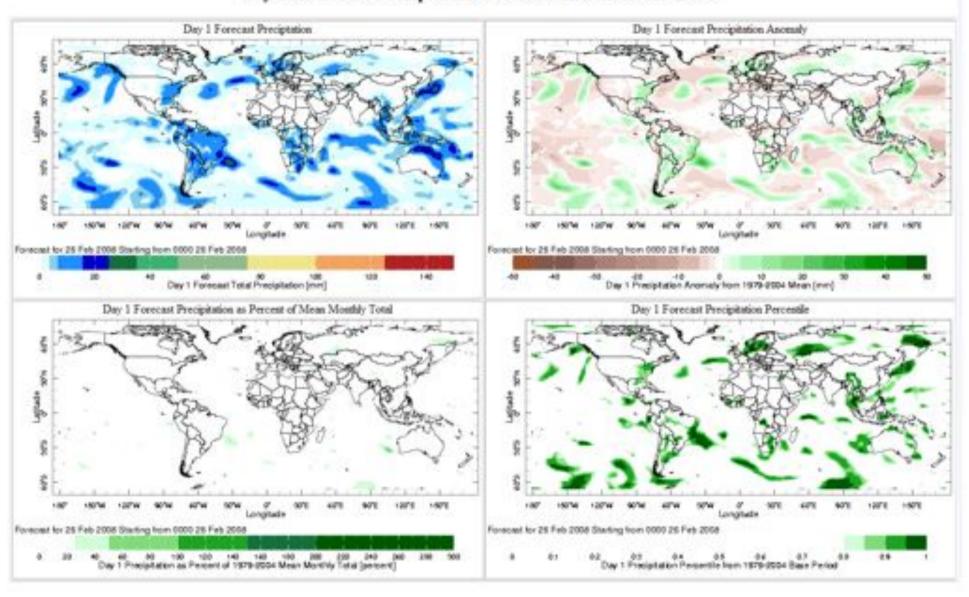
dable Page



This map displays the difference (in milimeters) between the current six-day total forecast precipitation value and the long-term (1979-2004) mean six-day total precipitation value in the model climatology for the same time of year. Although the precipitation amountly expresses how much the currently forecast precipitation value differs from the long-term 'normal' in terms of a precipitation amount, it does not clearly specify how unusual that difference is for that particular location or time of year. For instance, while an anomaly of 30 mm may be significant in North Africa, it might not be significant in Indonesia. The forecast data are courtesty of the NOAA ESEL Reforecast project.

Single-Day (24-Hour) Total Precipitation Forecast Maps					
		Day 3 Precipitation Forecast Maps			

Day 1 MRF/GFS Precipitation Forecasts in Context for IFRC

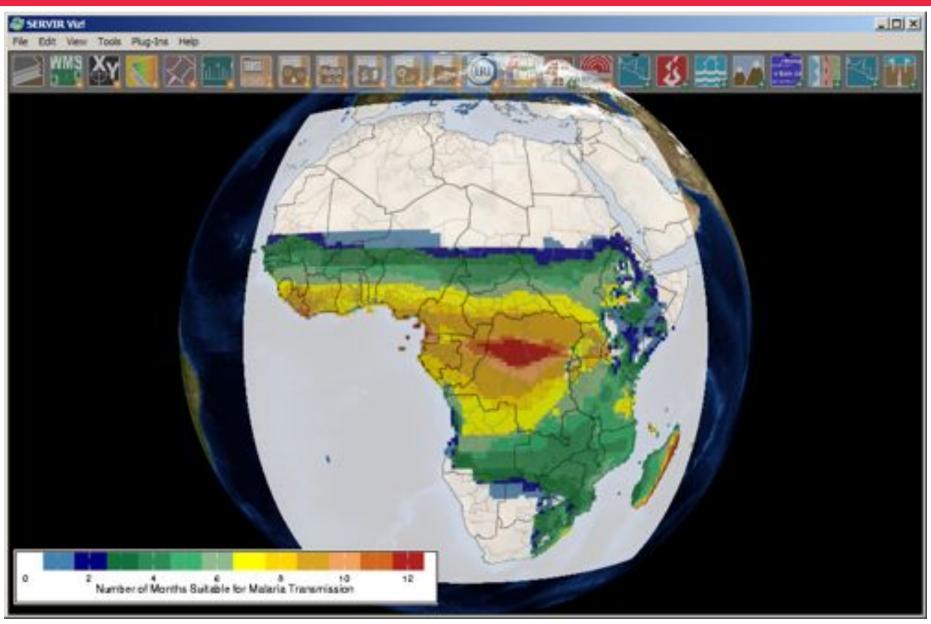




MEWS

- Malaria Early Warning System
- "By knowing when conditions are suitable for the transmission of malaria, health officials are sometimes granted several weeks, sometimes months, head-start to apply insecticides, stockpile medicines and alert hospitals."





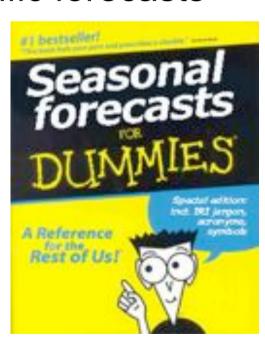
Number of months during the year that are suitable for malaria transmission based on climatological conditions



Future

- Seasonal forecast "for dummies"
 - How to understand scientific forecasts

- Health-related products:
 - Meningitis
 - Rift Valley Fever
 - Cholera



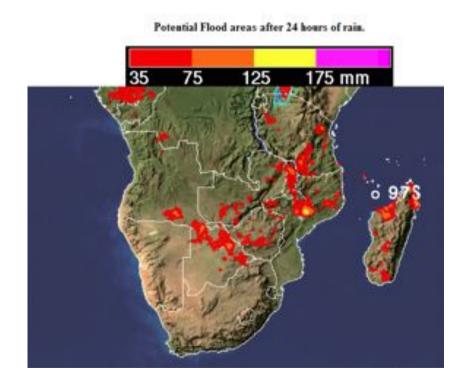
NASA

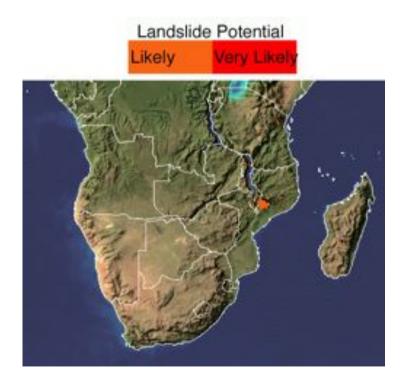




Current products

Flood potential and landslide potential products







Future collaboration - 1

Floods detection and

forecast in flood-

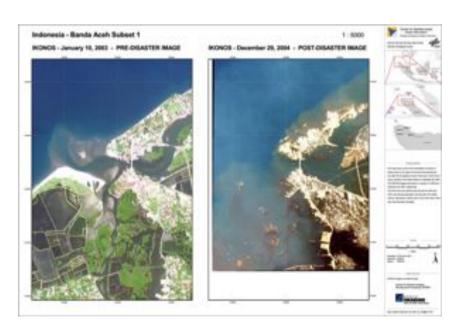
prone bassins

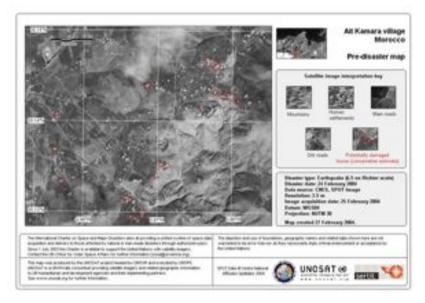




Future collaboration - 2

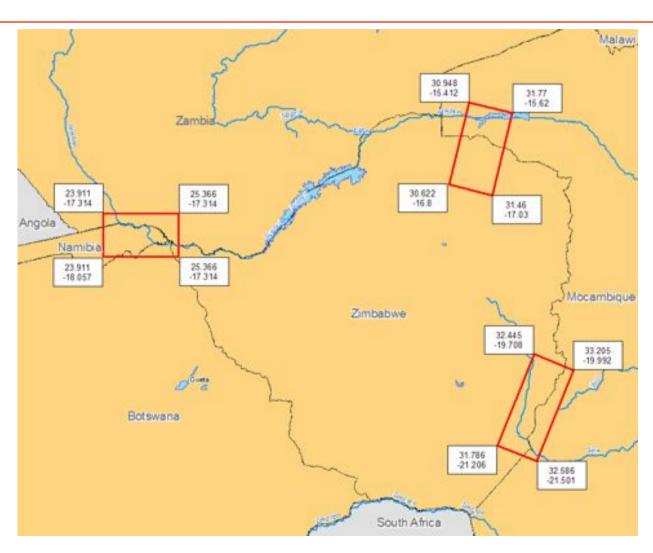
- Derived products
 - Pre- and post- event change detection mapping







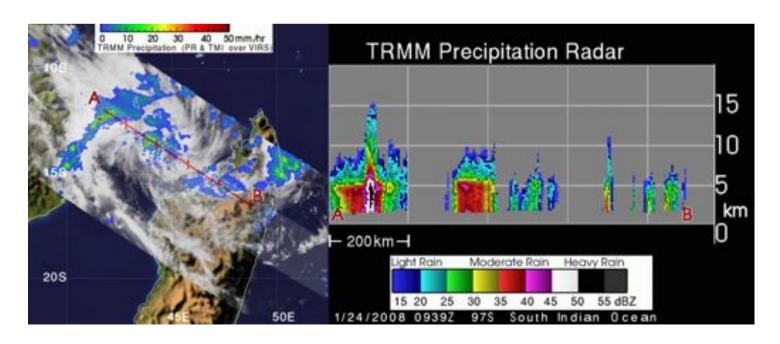
Future collaboration 2 – Test areas





Future collaboration - 3

- Derived products
 - Storm total rainfall
 - Near real time warning for potential hurricane intensification



Conclusion

- Now, we say:
 "The cyclone will bring a lot of rain, people will be affected"
- Tomorrow, we will be able to say:
 "I am 75% confident that the cyclone will bring 30 cm of rain; 200,000 people are at risk"
- We are adding a scientific validation to our experience