



International Federation
of Red Cross and Red Crescent Societies

Early warning Early action

Science meets the Federation

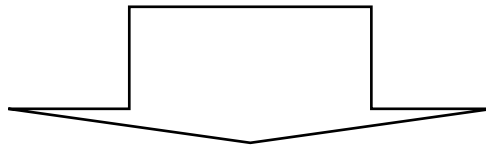


Improved early warning
can have a
significant impact
on a more strategic
approach
to disaster response



Standard approach

Disaster

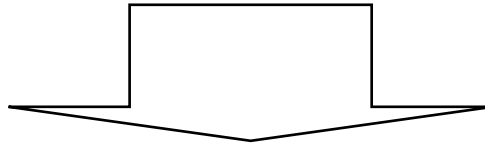


Reaction

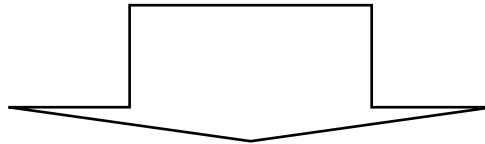


New approach

Early warning

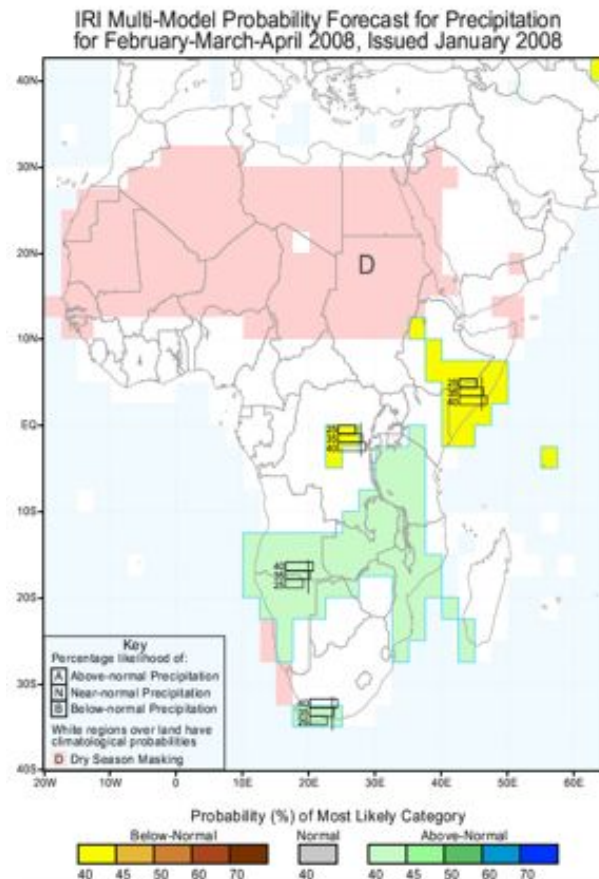


Early action

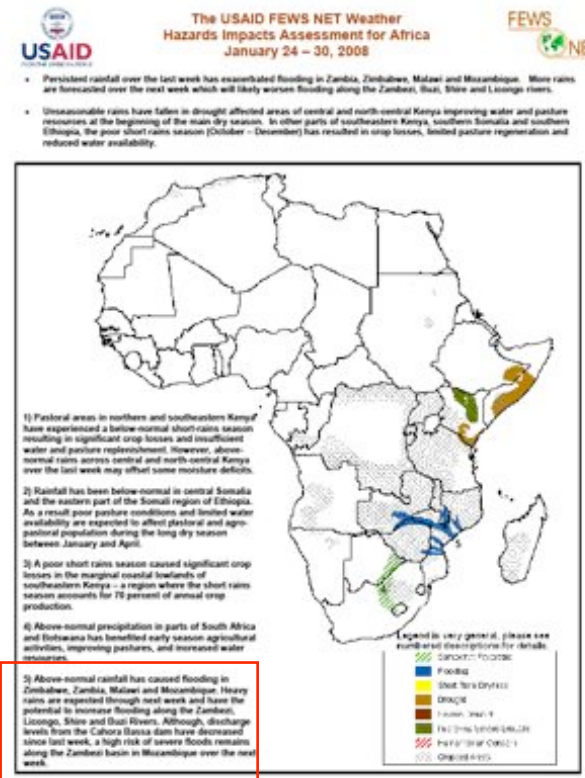


Disaster

Seasonal forecast

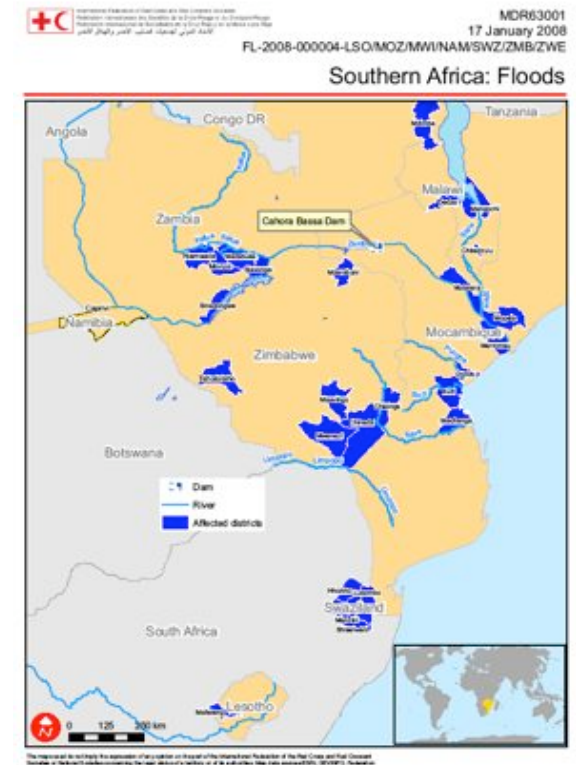


One week forecast



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.

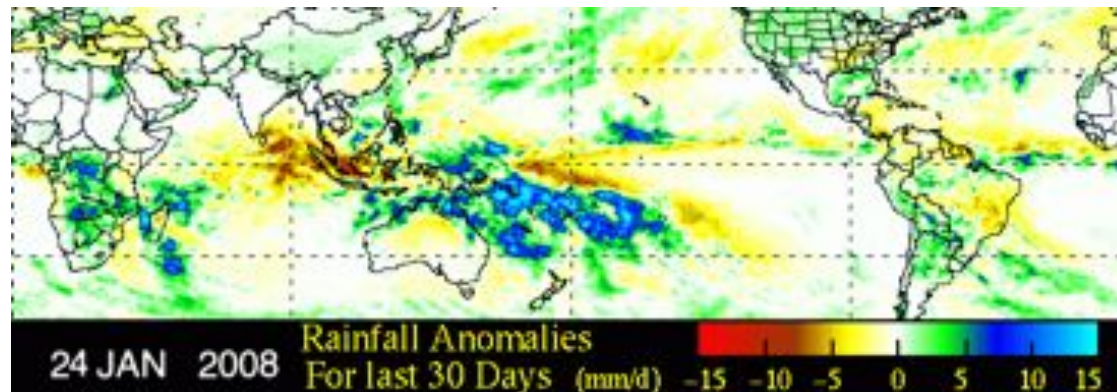
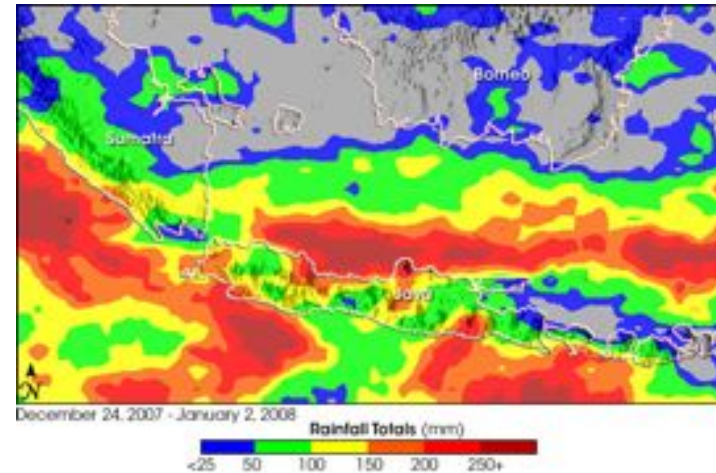
Observation





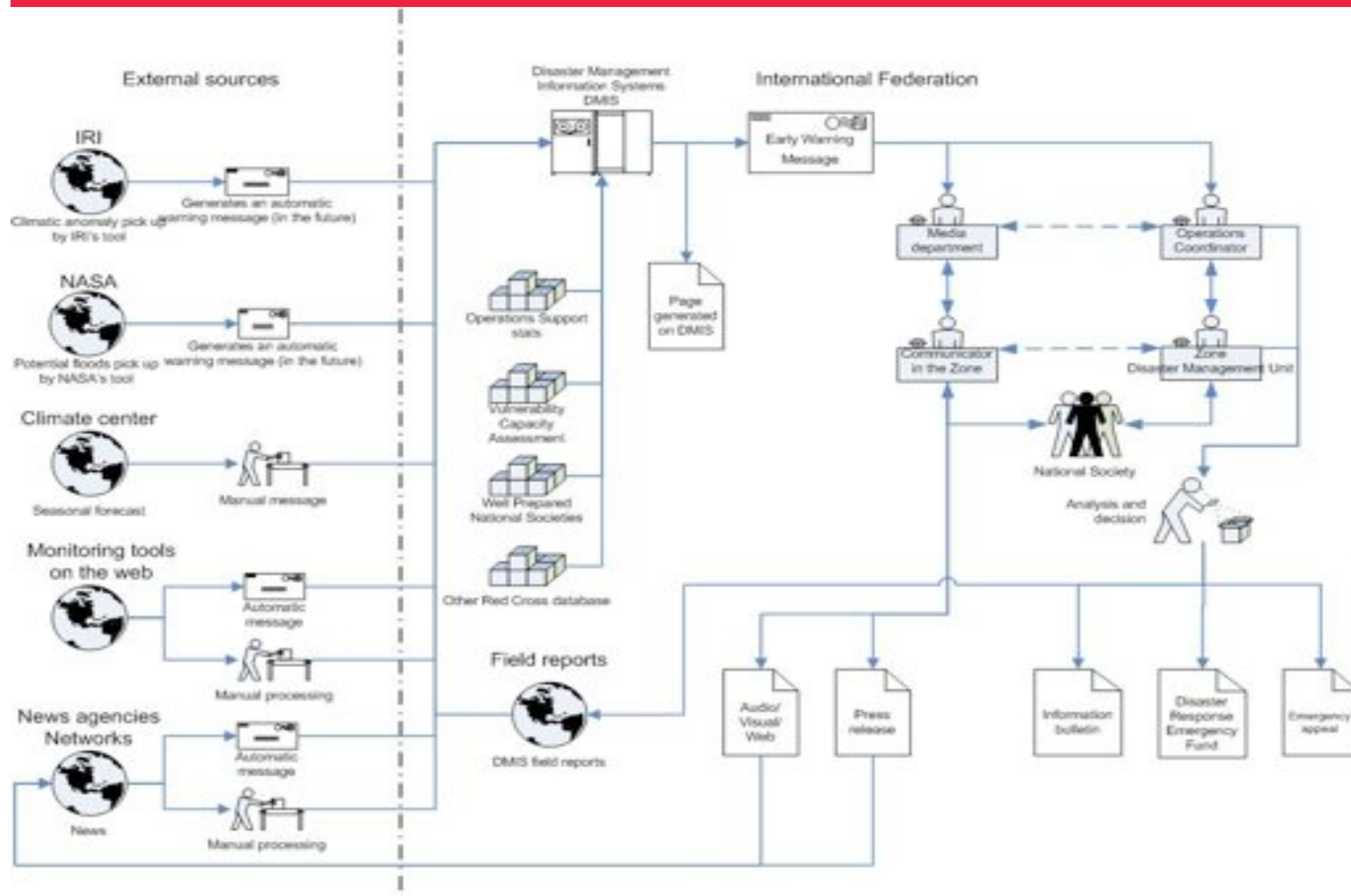
Science can help

- 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





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Partners

- Two scientific institutes want to work with us





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IRI



**The International Research Institute
for Climate and Society**



Partnership to save lives

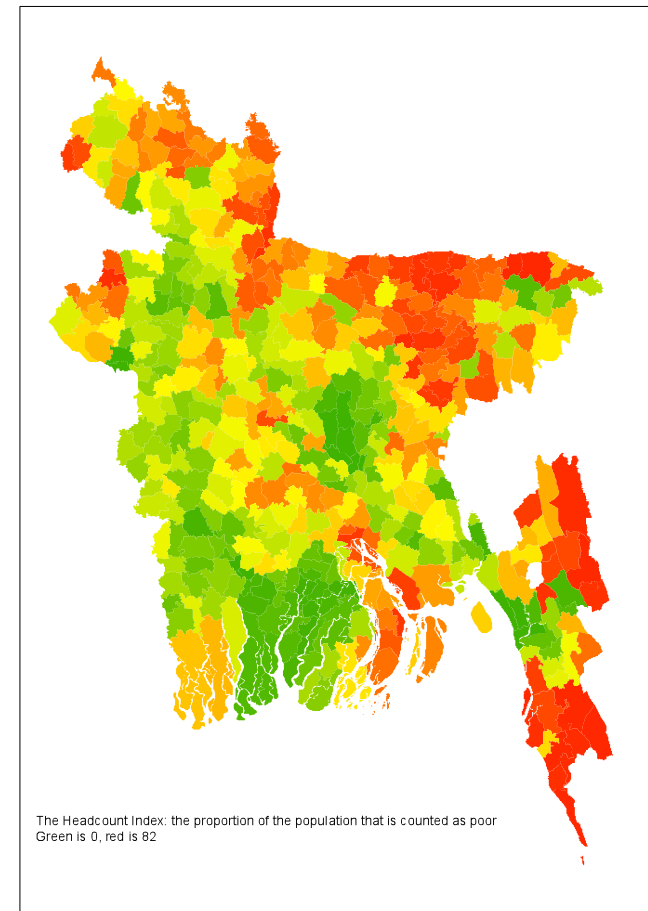
- IRI is developing for the International Federation a map-based system to identify climatic anomalies
 - Population
 - Vulnerability (CIESIN)
 - Seasonal and extreme forecast
 - Sudden event
 - Anomalies
- Later, an automatic warning system will be implemented, with triggers

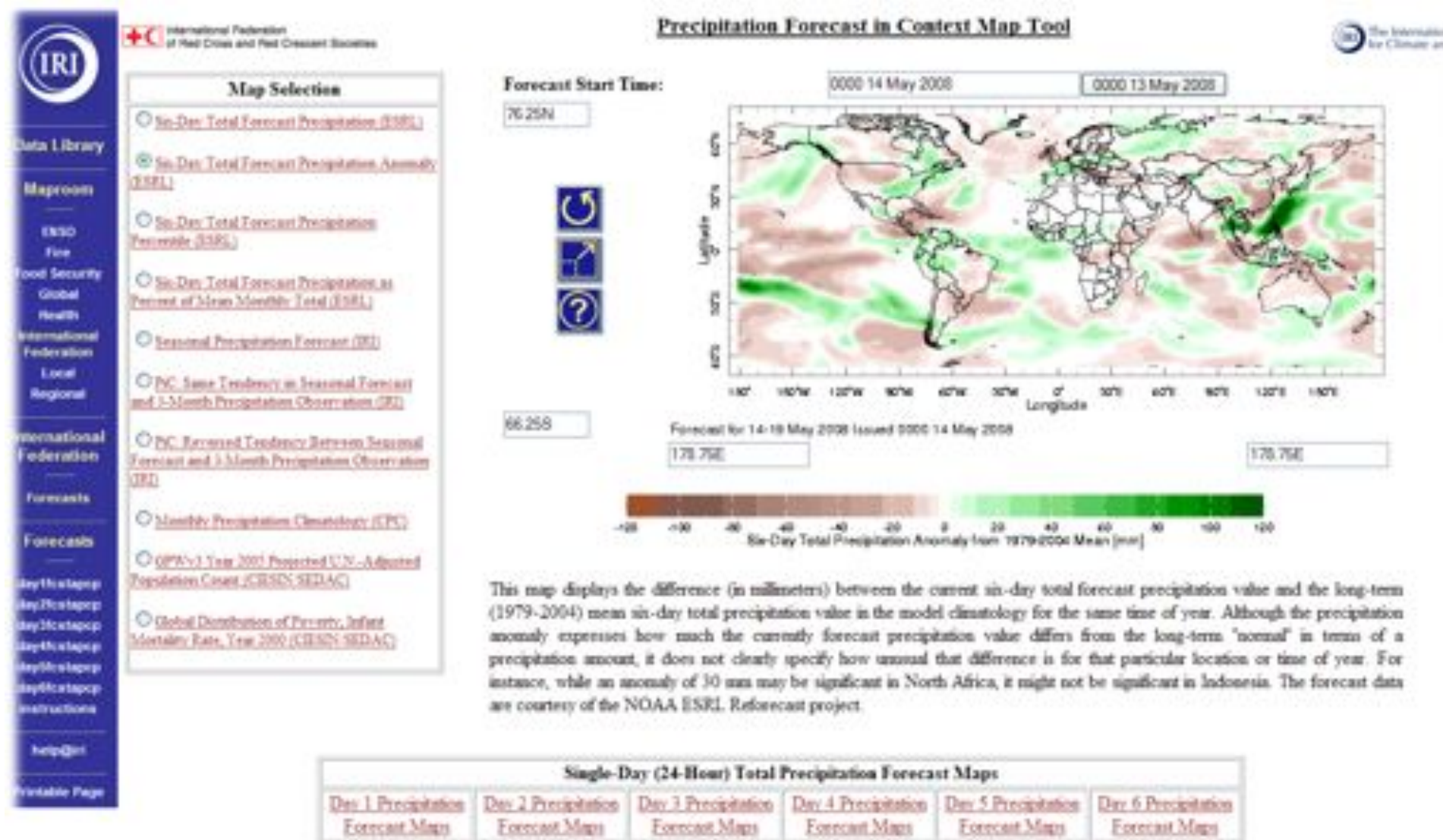


CIESIN

(Center for International Earth Science Information Network)

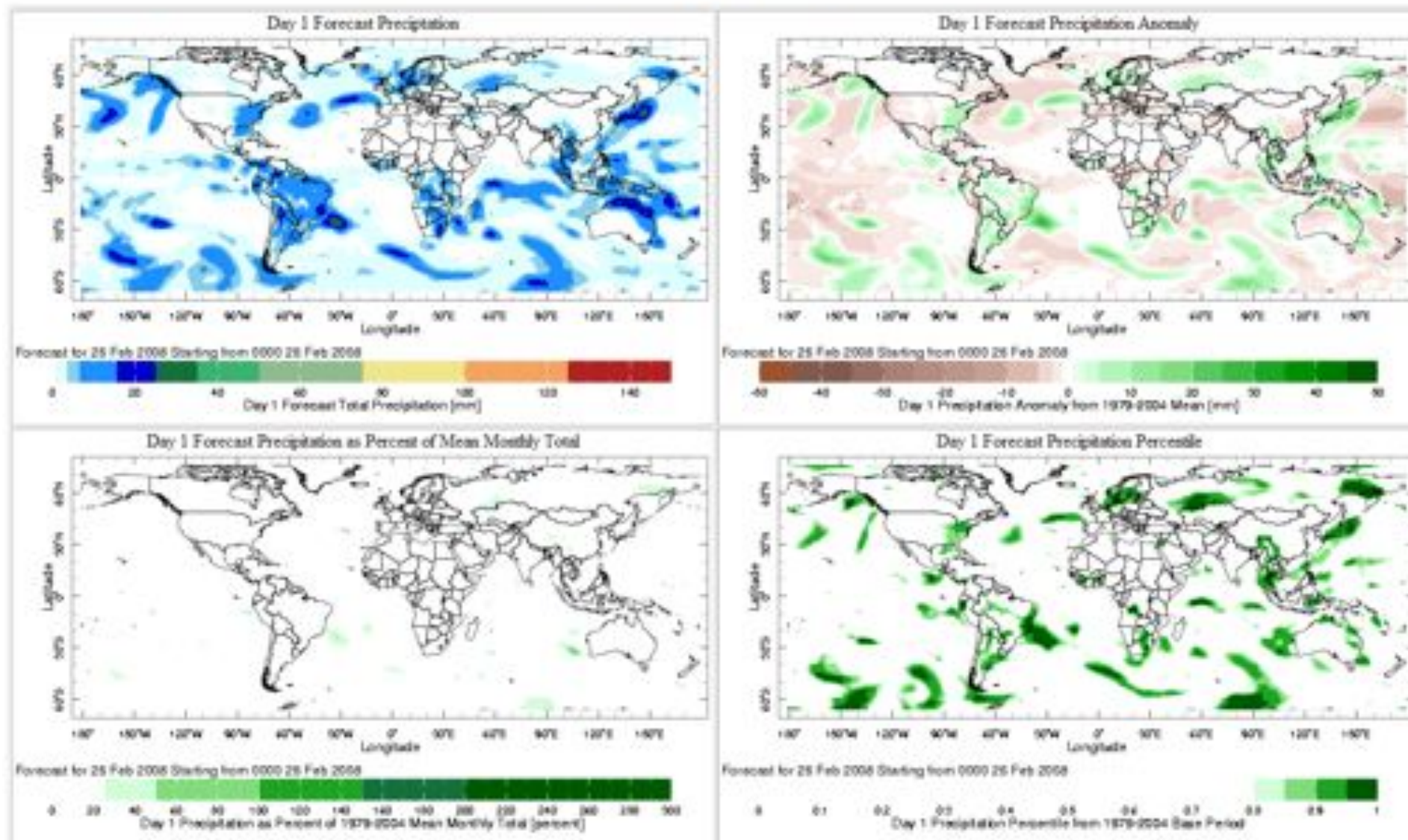
- Specializes in on-line data and information management, spatial data integration
- Will provide data on population, poverty, vulnerability, ...







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.”



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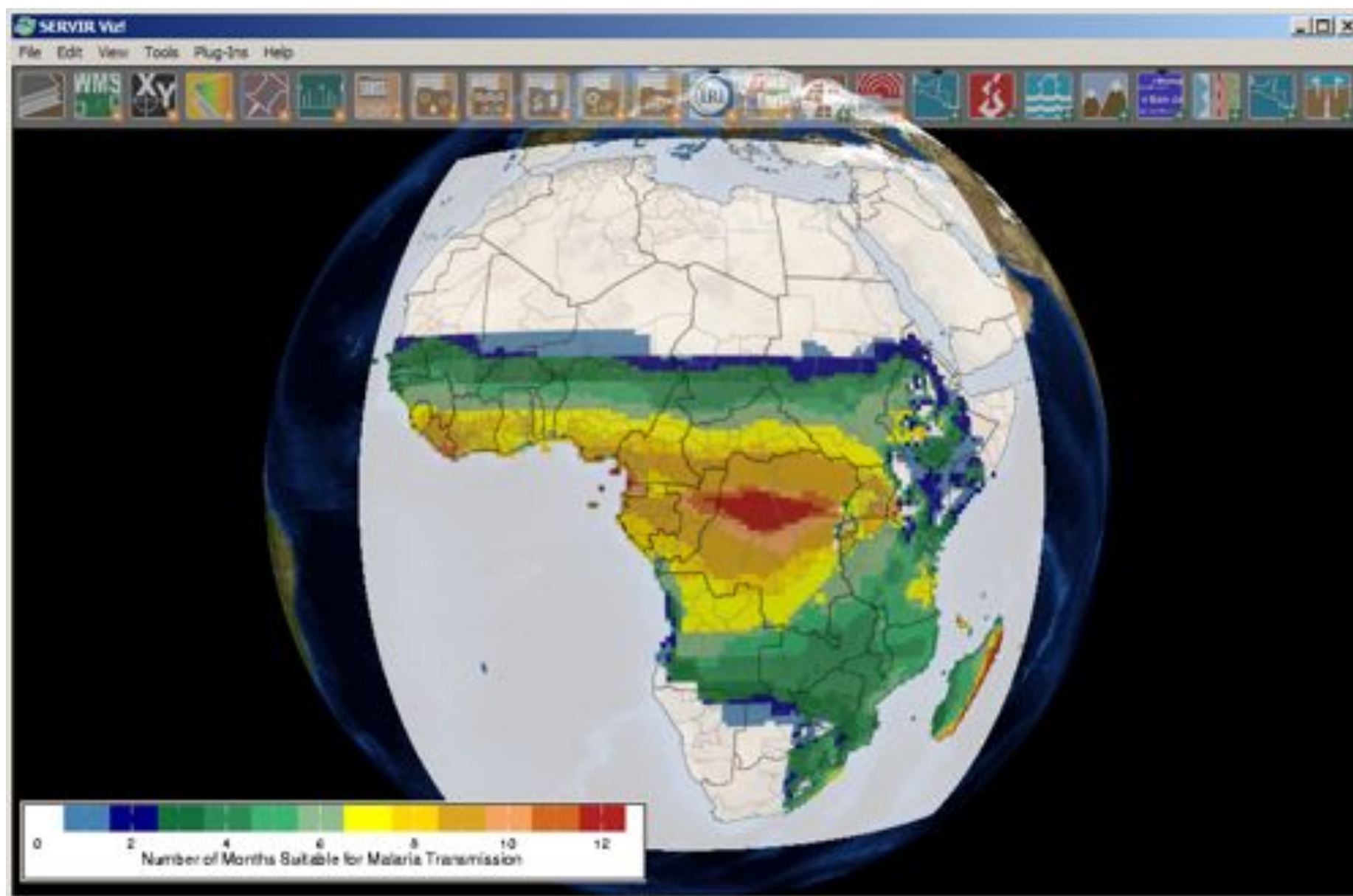




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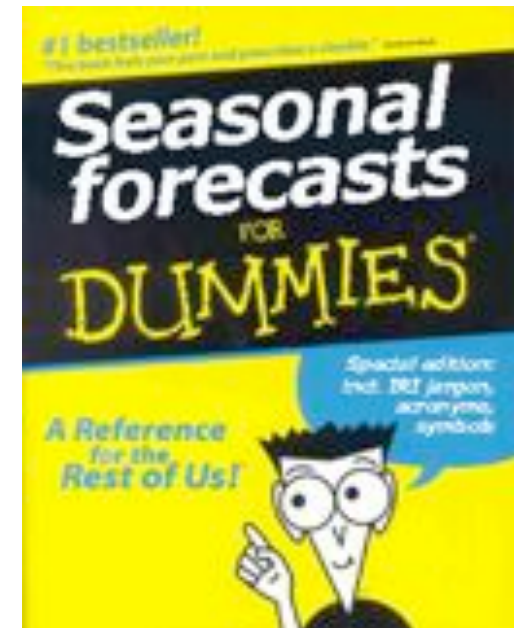
Number of months during the year that are suitable for malaria transmission based on climatological conditions



Future

- Seasonal forecast “for dummies”
 - How to understand scientific forecasts

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





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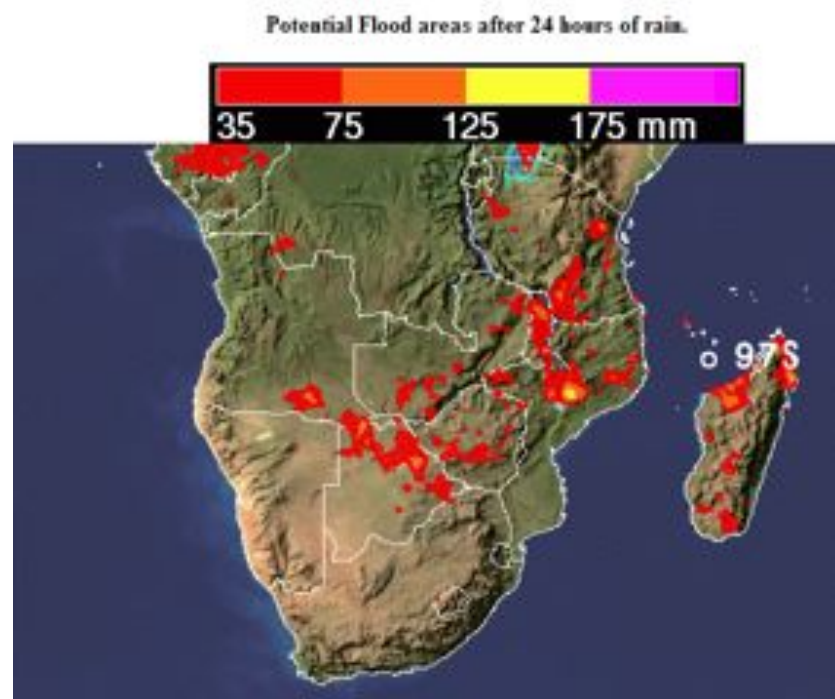
NASA





Current products

- Flood potential and landslide potential products





Future collaboration - 1

- Floods detection and forecast in flood-prone bassins





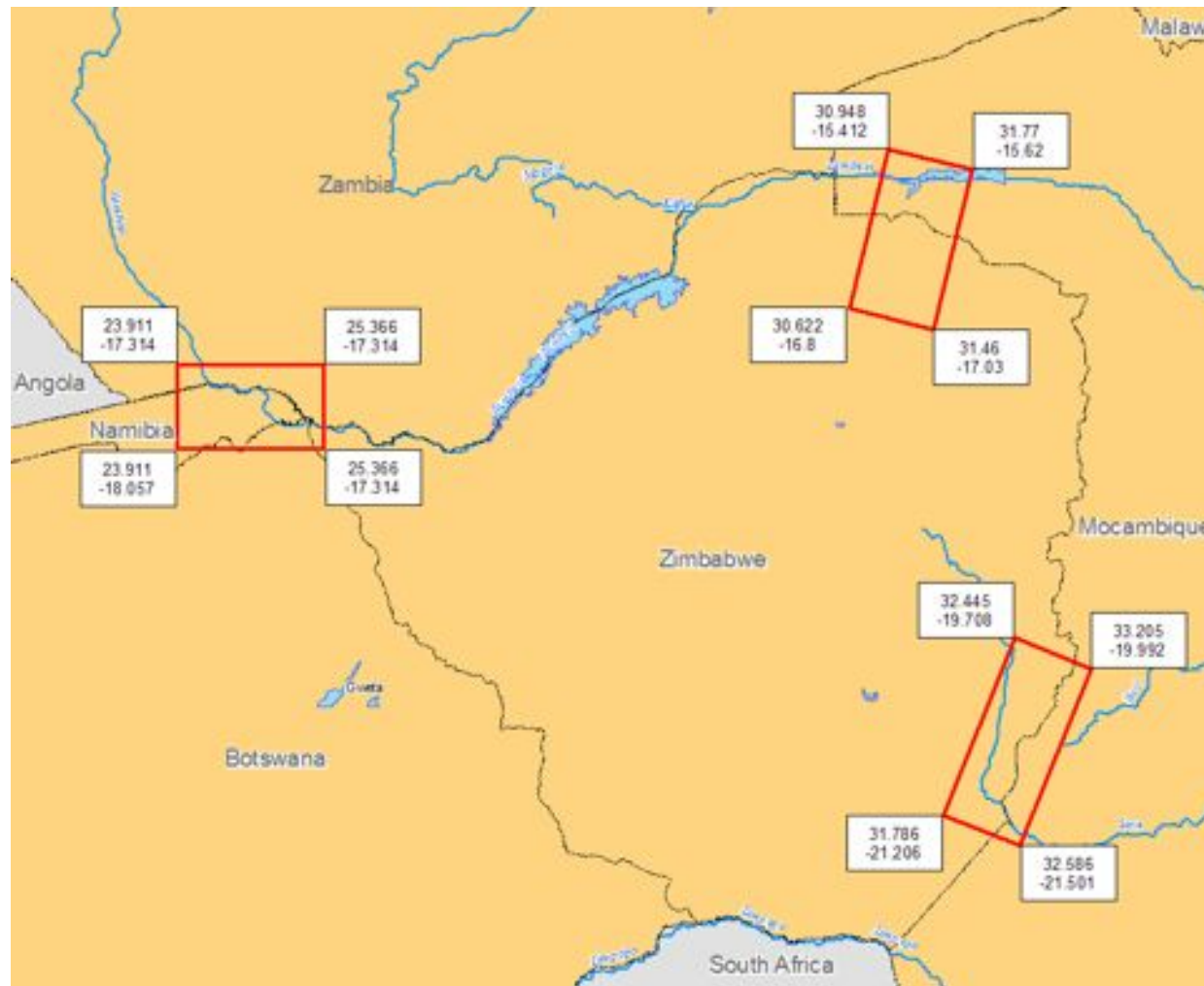
Future collaboration - 2

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





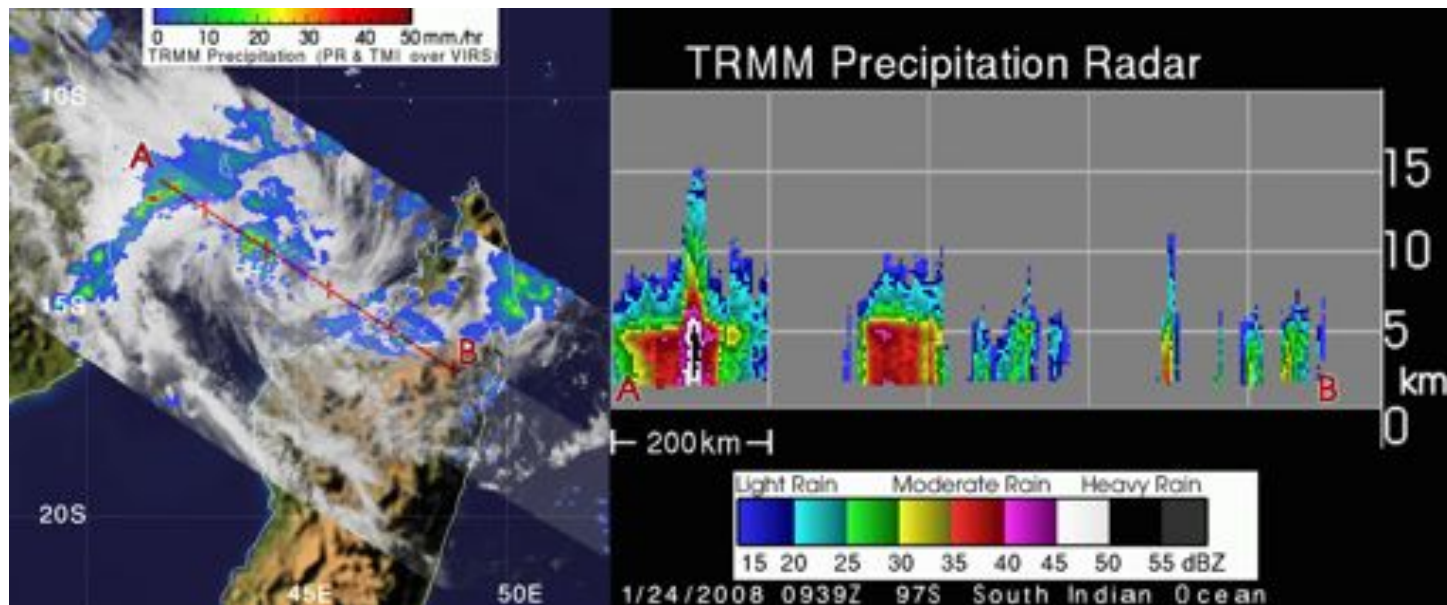
Future collaboration 2 – Test areas





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