



# DROUGHT 2009 India



# Disaster Preparedness using IT Tools: Case Studies on the use of ICT and GIS Derived tools for Micro-Level Drought Preparedness

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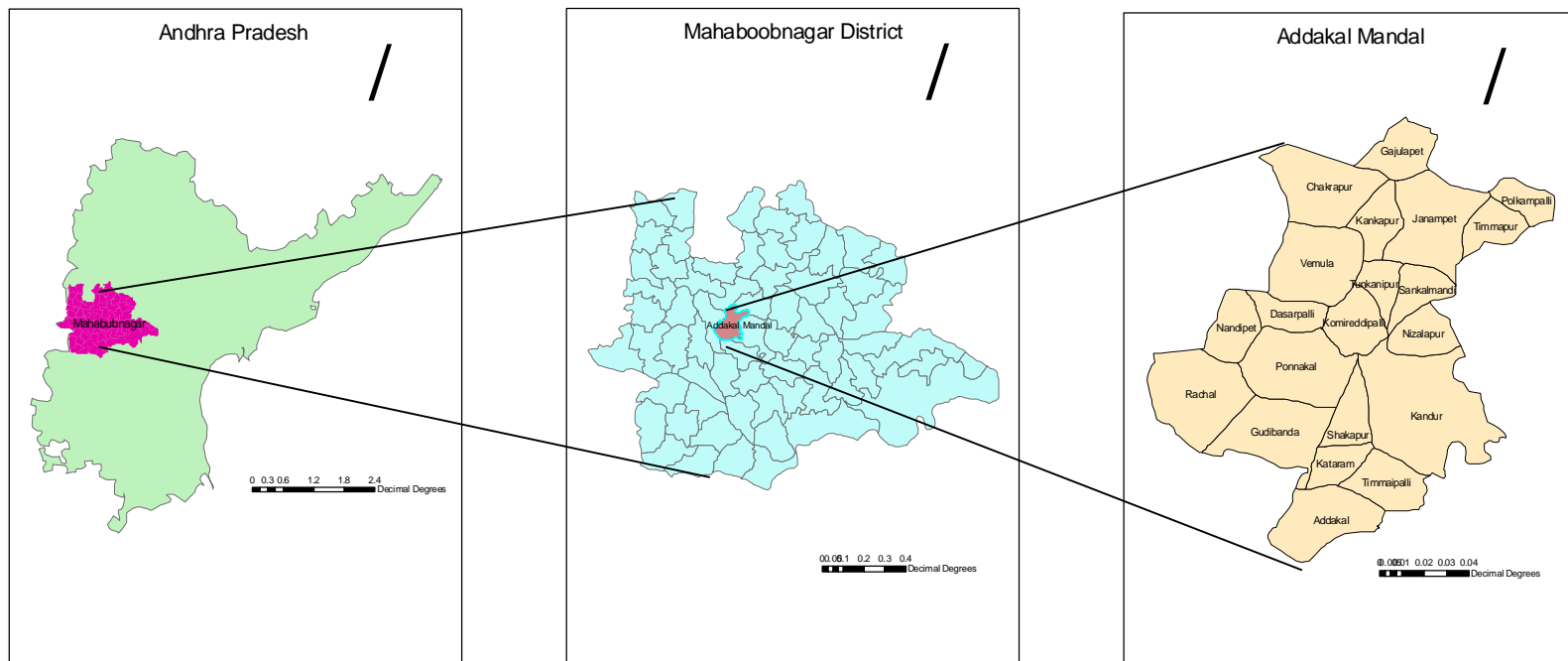
# Prediction....

- India Meteorological Department (IMD) has predicted **near normal** southwest monsoon for 2009. (May, 2009)  
(<http://www.imd.gov.in/section/nhac/dynamic/lrf.htm>)
- International Research Institute for Climate and Society, Columbia has predicted **below normal** rainfall for **India for 2009**. (May, 2009)  
(<http://portal.iri.Columbia.edu/portal/server.pt>)

# Drought Vulnerability and Agroadvisary

- Based on this, a below normal rainfall (400 mm) was predicted for addakal block, Mahaboobnagar.
- ICRISAT also recommends growing an array of crops together with livestock along with other income-generating activities that can lessen the risks of total crop failure and enhance farm income.  
(<http://www.hindu.com/2009/07/05/stories/2009070555380900.htm>)

# Location of Adakkal *Mandal*, Mahabubnagar, AP



# ICRISAT-AMS

- ICRISAT helped AMS with 8 Village Knowledge Centers and One Hub (Internet)
- ICRISAT – AMS use VC (2-way) provided by ISRO (Since March 2007)



**Gudibanda**



**Janampet**



**Vemula**



**Kandur**



**Thimmapur**



**HUB**

**Komireddipalli**



**Polkampalli**



**Nijalapur**



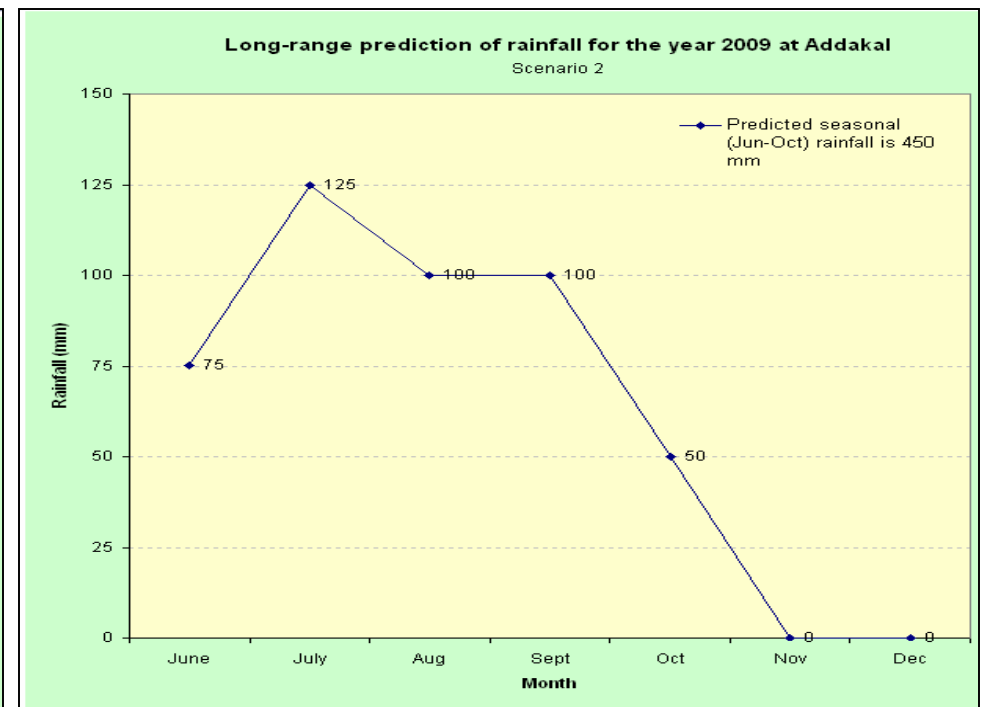
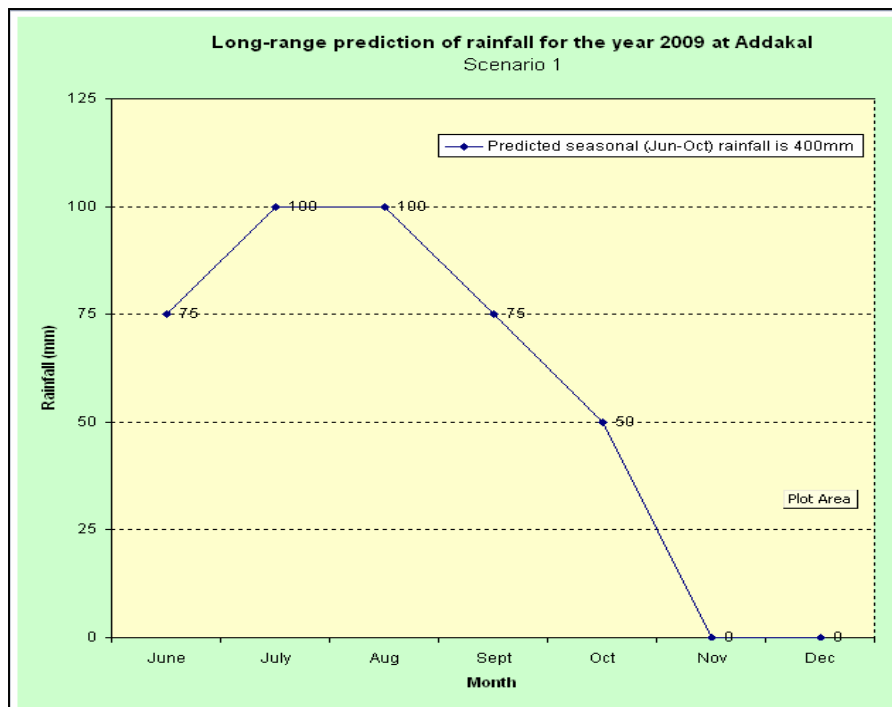
**HUB and SPOKE MODEL**

# Drought Vulnerability Assessment Framework

- ICRISAT adopted a method developed at IIT Bombay.
- Water deficit \ surplus information
  - demand
  - available from rainfall-runoff
- Cadastral maps – ArcGIS Software.
- Choropleth Maps → Color coded maps



# Seasonal Prediction of Rainfall for the Year 2009 at Adakkal



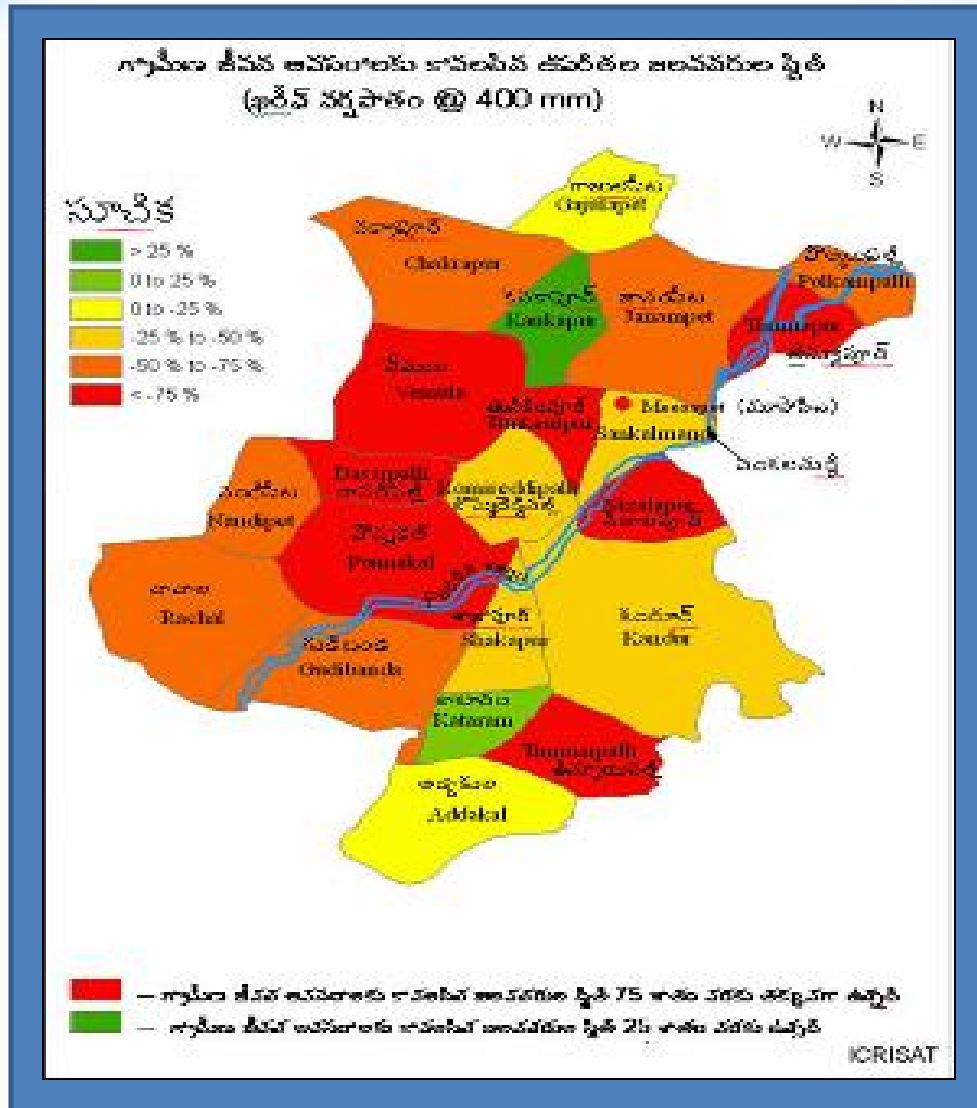
# Micro-level Drought Vulnerability Maps

## Most Drought affected villages

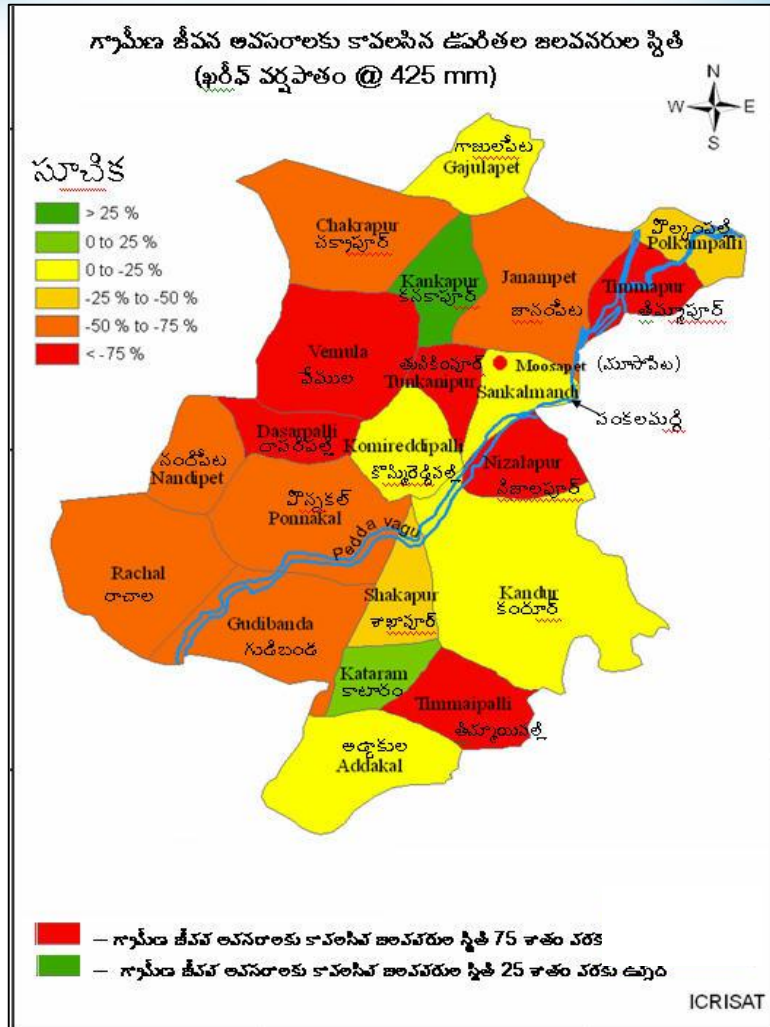
- Vemula
- Thimmapur
- Nijaralapur
- Ponnakal
- Thimaipalli
- Thunkanipur

## Problems aroused due to these condition

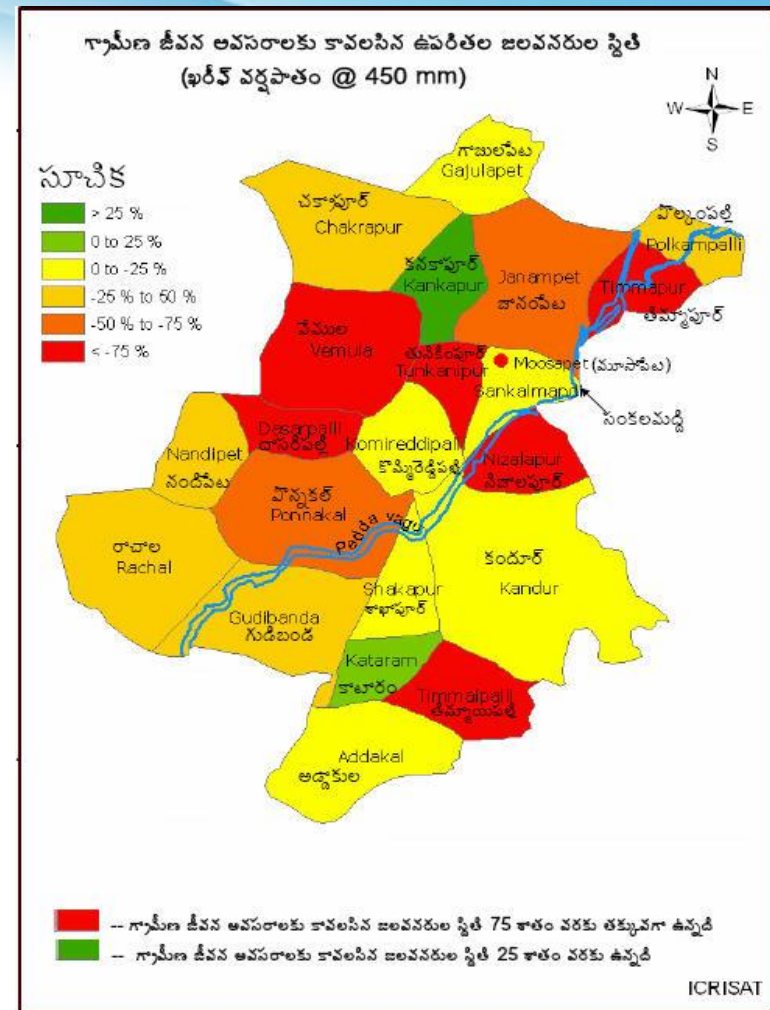
- Drinking water
- Inadequate irrigation
- shortage of feed and fodders for livestock
- People are selling their livestock



# Next likely Drought situation



425mm



450mm

# Drought awareness raising using color-coded maps



ICRISAT scholars with help of village volunteers contact rural residents to exchange information on upcoming drought

# Validation of Drought Vulnerability Maps



**Rural women  
measuring rainfall**

Adakkal నా రురింది చర్చ నా అభిరుచులు నా వీక్షణ జాబితా నా మార్పులు-చేర్పులు విప్లవించు

వ్యాసము చర్చ మార్పు చరిత్ర తరలింపు వీక్షించ వద్దు

### Rainfall 2009 kharif

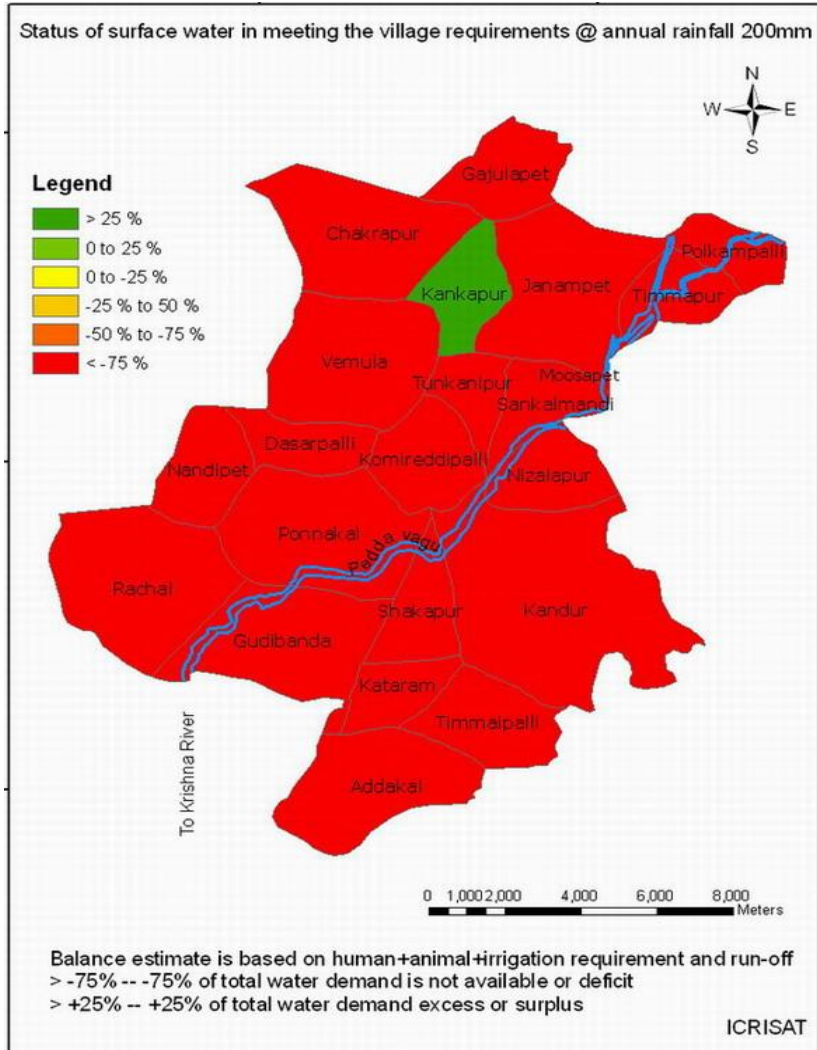
RAINFALL DATA FOR ADDAKKAL MANDAL DURING 2009 KHARIF SEASON

గ్రామము/village	రాచాల/Raachala	కందూరు/Kandur	తిమ్మావూర్/Thimmapur	మూసాపేట/Moosapet	జానంపేట/Janampet
తేదీ Date	వర్షపాతం Rainfall(mm)	వర్షపాతం Rainfall (mm)	వర్షపాతం Rainfall(mm)	వర్షపాతం Rainfall(mm)	వర్షపాతం Rainfall(mm)
25/05/2009	nil	nil	nil	nil	nil
26/05/2009	nil	nil	nil	nil	nil
27/05/2009	NA	NA	NA	7.0	NA
28/05/2009	nil	nil	nil	nil	nil
29/05/2009	nil	nil	nil	nil	nil
30/05/2009	nil	nil	nil	nil	nil
31/05/2009	nil	nil	nil	nil	nil
1/06/2009	15.0	14.5	17.1	23.0	17.0
2/06/2009	22.5	6.0	6.75	4.0	11.5
3/06/2009	nil	nil	nil	nil	nil
4/06/2009	nil	nil	nil	7.0	nil
5/06/2009	nil	nil	nil	nil	nil
6/06/2009	nil	nil	nil	nil	nil
7/06/2009	nil	nil	nil	nil	nil
8/06/2009	12.5	2.5	22.5	20.0	nil
9/06/2009	nil	nil	nil	nil	nil
10/06/2009	nil	nil	nil	nil	nil
11/06/2009	nil	nil	nil	nil	nil
12/06/2009	37.1	40.0	19.75	53.0	25.5

Rainfall data uploaded by rural volunteers on VASAT wiki @ [http://vasatwiki.icrisat.org/index.php/Rainfall\\_2009\\_kharif](http://vasatwiki.icrisat.org/index.php/Rainfall_2009_kharif)



# Present drought Situation



Month	Normal (mm)	Predicate d (mm)	Actual Rainfall (mm)
June	68	75	83
July	145	100	11.65
August(till 26 <sup>th</sup> )	122	100	39.85

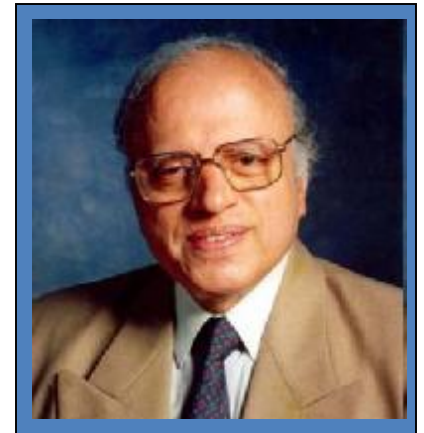
**Total rainfall received till now: 134.4mm**

# Drought 2009 India



Ø The Prime Minister of India, Dr. Manmohan Singh also noted the “difficult situation” following delayed and deficient rainfall that the country was facing.

Ø Dr. M.S. Swaminathan has emphasized the need for a science-based contingency plan.





**Present framework gains significance and emphasizes integration of scientific inputs for local - level contingency plans .**

- Ø Soil management**
- Ø Land planning**
- Ø Crop management**
- Ø Integrated Watershed Management**



THANK YOU

# Climate



## Program Divisions

- Overview
- Dynamical Modelling
- Global Prediction Development
- Downscaling & Tailoring
- Climate Diagnostics

## Climate Monitoring

## Climate Forecasts

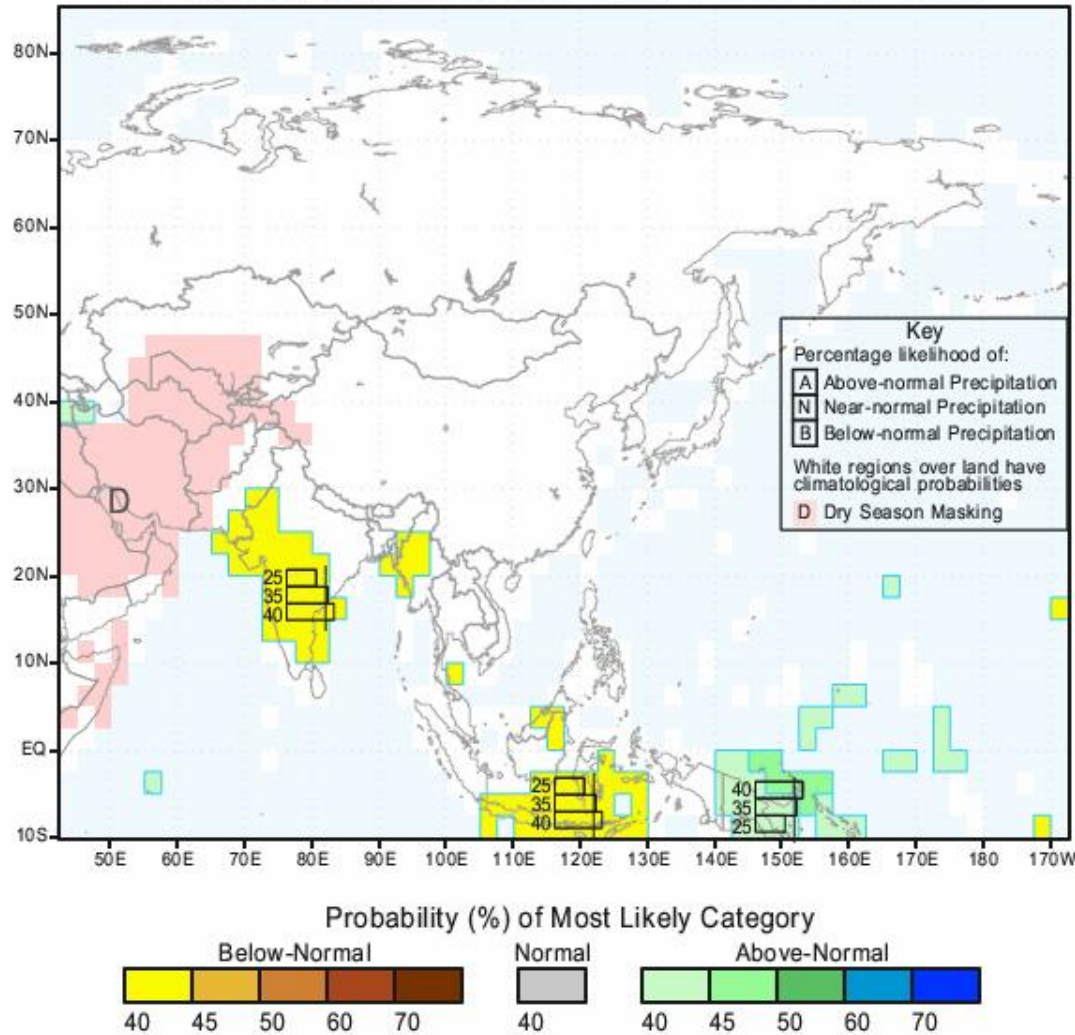
- Forecast Products Overview
- **IRI Seasonal Climate Forecasts**
  - **Net Assessment Forecasts**
    - Interactive Net Assessments
  - AGCM Predictions
  - SST Forecasts
  - Probabilistic ENSO Forecasts
  - Experimental Tropical Cyclone Activity Forecasts
  - Forecast Methodologies

## Research

## Software Tools

[Discussion](#) | [this map in PDF](#)

### IRI Multi-Model Probability Forecast for Precipitation for July-August-September 2009, Issued June 2009



Last modified: 06/19/2009 02:05.

## Seasonal Climate Forecasts

- Forecasts in Context of Recent Observations
- Prob. Forecasts for User-Selected Precip. Amounts
- NAME Forecasts
- Global & Regional Seas. Climate Maps

## Additional Resources

- Forecasts Overview
- What are Climate Forecasts?
- Science & Practice of Forecasting
- Forecasts Schedule
- Subscribe to Forecasts

## Map Archives

- 2009
- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002
- 2001
- 2000
- 1999
- 1998
- 1997

