# Mapping drought for 100 Years

The Indian Meteorlogical Department (IMD) defines drought as ‘the consequence of a natural reduction in the amount of precipitation over an extended period of time, usually a season or more in length, often associated with other climatic factors (viz. high temperatures, high winds and low relative humidity) that can aggravate the severity of the drought event.

The Data

The monthly rainfall MET data of different stations for the period 1901 to 2002 for selected districts with long rainfall data series has been considered. The data that is used for this work, is the publicly available Climate Research Unit (CRU) TS2.1 dataset, out of the Tyndall Centre for Climate Change Research, School of Environmental Sciences, University of East Anglia in Norwich, UK. This published dataset consists of interpolated (on a 0.5 degree latitude-longitude grid) global monthly rainfall, temperature, humidity and cloud cover data, from 1901 to 2002 (Mitchell and Jones, 2005).

Calculation

The IMD calculates meteorlogical drought as:

"In India, according to India Meteorological Department, meteorological drought over an area is defined as a situation when the seasonal rainfall received over the area is less than75% of its long term average value. It is further classified as "moderate drought" if the rainfall deficit is between 26-50% and "severe drought" when the deficit exceeds 50% of the normal."

We decided to take our MET data and created maps showing incidence of drought across districts of India, from 1905 to 1997. A district is considered to be experiencing a drought if the annual rainfall for the district for the year is found to be less than 75% of the ten year moving average annual rainfall for the district for the year.

This calculation doesn't explain all drought, the following maps are just looking at decreasing rainfall patterns and not taking into account the numerous other factors that contribute to drought.

When the maps were generated we were able to see some interesting patterns and invite people to look at the data and contribute their own maps analysis and definitions of drought.

We hope this project inspires people to look at what contributes to drought and the data used and debate how we can improve the assessment.

Click the image below to look closer at the maps and go through the methodology.


1905


1906


1907


1908


1909


1910


1911


1912


1913


1914


1915


1916


1917


1918


1919