



Dr. Susan Bliss

Photograph: Indian villagers cross a parched land looking for drinking water in Vastral Gam near Ahmedabad
<http://indianexpress.com/article/india/india-news-india/drought-hit-regions-india-marathwada-vidarbha-latur-beed/#sthash.AYy2lZKC.dpuf>

'A staggering 3,228 farmers committed suicide in Maharashtra in 2015, the highest since 2001—that is almost nine farmers every day. In 2016, many regions are already in the grip of a drought with the rains at least a couple of months away.'



No cricket in Maharashtra 2016

Source: <http://quintype-01.imgix.net/thequint%2F2016-04%2F4aed054f-58fa-411d-af85-1d96bb8aaf4b%2FIPL%20Water%201.jpeg?auto=format,compress&q=60&w=976&fm=pjpg>

A grain of rice or a spoonful of sugar may not look like much, but litres of water went into making sure they are on plates and in mugs of people across the country. These crops pose a bigger problem for Maharashtra's drought than the Indian Premier League (IPL) cricket tournament.

This week, the Board of Control for Cricket in India faced criticism for holding the Indian Premier League's 20 matches in Maharashtra. A Public Interest Litigation filed against the organisation claimed that the stadiums used to house the matches will guzzle 60 lakh (*lakh is 100,000) litres of water – a substantial amount in the water-starved state.

For two years, many parts of Maharashtra have faced severe water shortages. More than half of the state's 43,665 villages were declared to be in a state of drought.

Petitioners told the Bombay High Court that water use for recreational purposes should not be a priority. But while 6,000,000 litres could be used in other parts of the state, it would barely scratch the surface of the drought.



For Maharashtra's farmers, the drought has been devastating. In 2015, almost nine farmers committed suicide a day, according to data from IndiaSpend.

Factors like climate change and the El Niño weather phenomenon contribute to the drought, but agricultural practices are also drying up the state's wells. Sugarcane and rice are among the most common crops in Maharashtra and each crop absorbs a lot of water.

Reducing how much water these crops need could help farmers cope with drought, studies show.

On average, urban-dwellers eat around 4.5 kilograms of rice per month, according to the National Sample Survey. For every kilo of rice produced, 3,500 litres of water is required.

Around 131 crore (*core is 10,000,000) litres of water go into one day's worth of rice for 2.5 million people, which is roughly 20 percent of Mumbai's population.

Similarly, around 10,000 kilograms of sugar are stirred into tea daily for 2.5 million people in Mumbai. Those 10,000 kilos require a total of 1.5 crore litres of water.

Drought across India May 2016

There is more to this drought than Maharashtra. Many other parts of the country are parched.

Source: <http://indianexpress.com/article/india/india-news-india/drought-hit-regions-india-marathwada-vidarbha-latur-beed/Gujara>

Telangana

Telangana has been hit with droughts over the last three years. In villages, wells and irrigation projects are dry. As a result about 2,100 farmers have committed suicide since 2014, causing large scale migration to urban areas.



Gujarat

The Gujarat government declared 623 villages as water scarce due to poor monsoon rains last year.



Chhattisgarh

117 Tehsils (administrative districts) are suffering from drought due to deficient rainfall. They have lost more than 50% crops in the Kharif season (monsoon season).

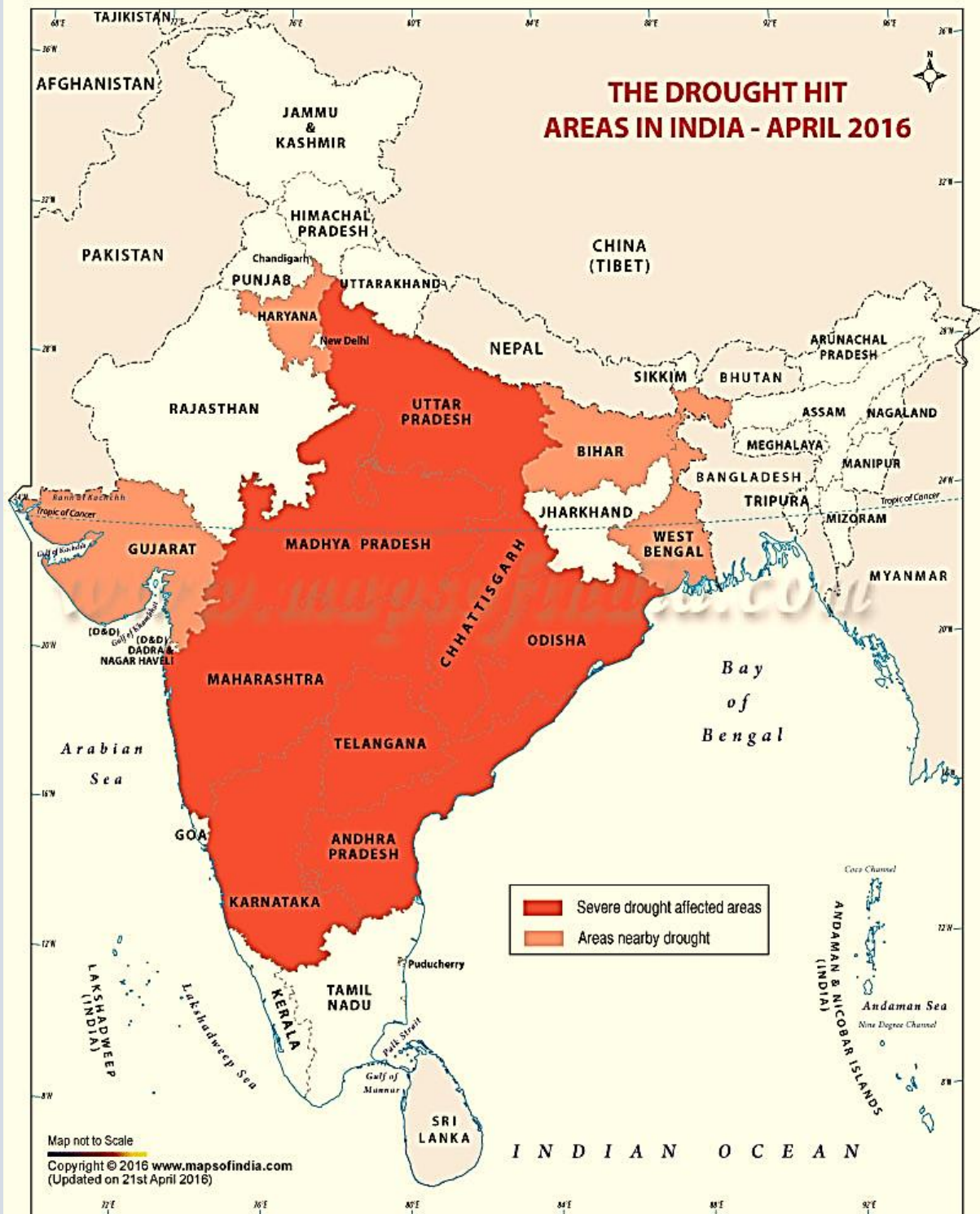


Drought hits areas in India, April 2016

Source: <http://www.mapsofindia.com/maps/india/drought-prone-areas.html>

About 10 Indian states out of 29 have declared they are experiencing a drought.

Approximately 330 million people are affected by this drought: 30 million in Karnataka, 36.9 million in Maharashtra, 16.7 million in Orissa, 23.5 million in Andhra Pradesh, 17.8 million in Telangana, and 99 million in Uttar Pradesh. The water reservoirs are down to about 22% of their capacity. Farmers are committing suicide because their lands are not yielding crops and animals are dying because of little available water. The land is too barren to sow seeds.

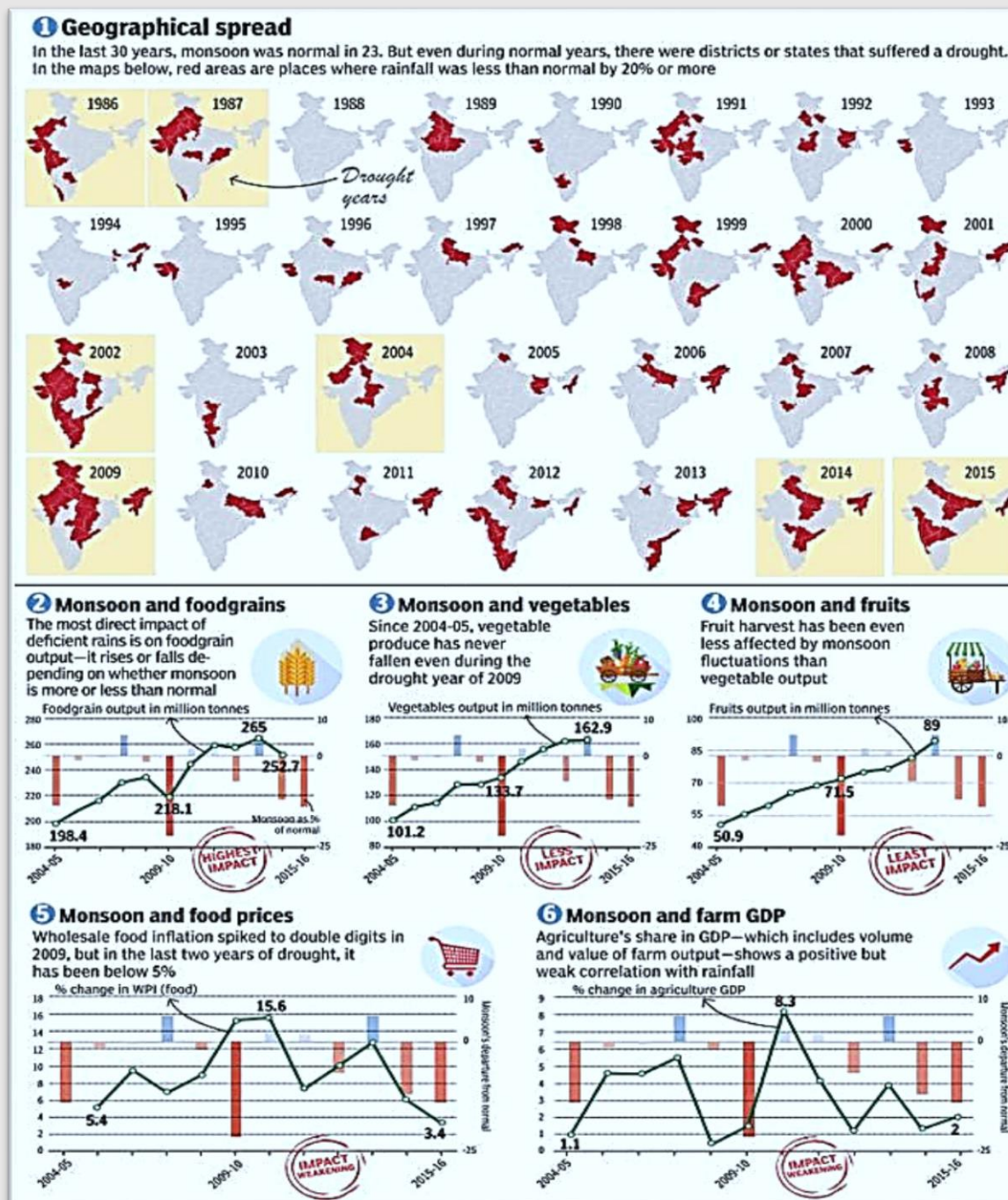


How the Monsoon controls India's destiny

'A normal monsoon will surely be good for the economy--both national and household. But how good?

That depends on more than just the adequacy of total annual rainfall. Will the monsoon start and end on time? Will its geographical spread be even across all states? A good rainfall could even be an average of a few weeks of scanty and a few weeks of excessive rains. There are many factors that determine a monsoon's impact. Here are the six key ones':

Sources: http://articles.economictimes.indiatimes.com/2016-04-18/news/72424581_1_normal-monsoon-good-rainfall-destiny
<http://epaperbeta.timesofindia.com/Article.aspx?eid=31808&articlexml=HOW-MONSOON-CONTROLS-OUR-DESTINY-18042016012015>



India drought: Bihar state bans daytime cooking

Adapted source: <http://www.aljazeera.com/news/2016/04/india-bans-daytime-cooking-drought-160430053807088.html>



India's drought has killed hundreds and affected more than 300 million people [Ajit Solanki/AP]

With sizzling temperatures claiming more than 300 lives this month in India, officials have banned daytime cooking in some parts of the drought-stricken country in a bid to prevent accidental fires that have killed nearly 80 more people.

Bihar took the decision to ban daytime cooking after accidental fires exacerbated by dry, hot and windy weather swept through shantytowns and thatched-roof houses. Much of India is reeling under a weeks-long heat wave and severe drought conditions that have decimated crops, killed livestock and affected at least 330 million Indians - many of them left without enough water for their daily needs.

Rivers, lakes and dams have dried up in parts of the western states of Maharashtra and Gujarat, and overall officials say that groundwater reservoirs are down to 22% capacity.

Rains weeks away

In some areas, the situation is so bad the government has sent tankers of water for emergency relief. Monsoon rains are still weeks away as they are expected to start in June.

At least 300 people have died of heat-related illness this month, including 110 in the state of Orissa, 137 in Telangana and another 45 in Andhra Pradesh where temperatures since the start of April have been hovering around 44°C.

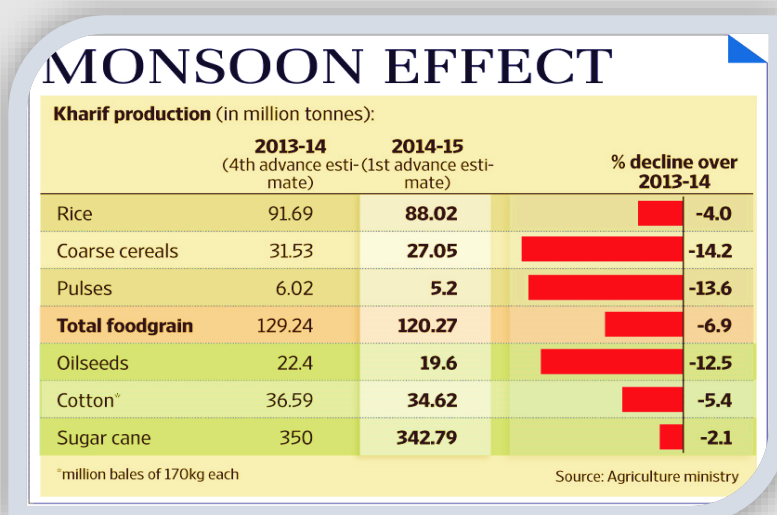
That is about 4-5°C hotter than normal for April, according to state meteorological official YK Reddy. He predicted the situation would only get worse in May, traditionally the hottest month in India.

Huge numbers of farmers have migrated to nearby cities and towns in search of manual labour, often leaving elderly and young relatives behind in parched villages.

This is the second consecutive year southern India has suffered from a deadly heat wave, after about 2,500 people died in scorching temperatures last year (2015).

Activities

- Design an annotated e-collage of drought across India <http://www.youthconnect.in/2016/04/29/pictures-drought-india/>
- Describe how the spreading drought ravaged India. <http://www.catchnews.com/india-news/disaster-map-how-the-spreading-drought-has-ravaged-india-1461853357.html>
- *'Southern and Eastern India are struggling with the consequences of severe drought caused by an early season heat wave and the lack of relief from monsoon rain. Tankers of water have been sent to farming communities in Maharashtra. People have been banned from drilling deep wells, and farmers instructed to stop growing sugarcane crops, which swallow large amounts of water.'* (<http://thewatchers.adorraeli.com/2016/04/20/330-million-affected-by-severe-drought-and-water-shortage-across-india/>). Discuss the impacts of drought on six key areas in India.
- Refer to the diagram and describe the links between a decline in monsoon rains and food production over the last few years <http://www.livemint.com/r/LiveMint/Period1/2014/09/20/Photos/w-Khariff.jpg>



- List the causes and effects of drought on the environment and the Indian population. Present as a two column table

Photograph: A train carrying half a million litres of water has been dispatched to the worst-affected areas of India's drought-hit western Maharashtra state. <http://www.bbc.com/news/world-asia-india-36013263>

ICT

Heatwave and drought map 28/4/2016 <http://reliefweb.int/map/india/india-heatwave-and-drought-echo-daily-map-28042016>

Drought Watchers <http://thewatchers.adorraeli.com/2016/04/20/330-million-affected-by-severe-drought-and-water-shortage-across-india/>

Map: Drought affected areas <http://www.catchnews.com/india-news/disaster-map-how-the-spreading-drought-has-ravaged-india-1461853357.html>

World Wide Daily Drought Risk Map <http://www.eldoradocountyweather.com/climate/world-maps/world-drought-risk.html>

Did you know?

An estimated 833 million people out of the 1.3 billion population in India depend on agriculture for their livelihood and the sector accounts for 14% of the nation's GDP.