

OPINION

India: When the rains don't go away

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A warmer world may be leading to a delayed withdrawal of the Indian monsoon, hitting crop yield and affecting the livelihoods of small farmers and agricultural workers.

The joys of a bountiful southwest monsoon are increasingly changing to anxiety as the rains unseasonably drag on in many parts of India. "The normal rains should be from June 1 to mid-September. In fact it usually reduces by August 15, and is not too strong after that. But it is raining at this time, hard," my uncle, who grows paddy in our village Adve near the South Karnataka coast, told me on October 6.

HEAVY PRECIPITATION

A delayed withdrawal is happening in many regions. The New Delhi Regional Meteorological Centre has said that Delhi is slated to have its longest monsoon in 50 years. Rains persist in many parts of eastern India. In Gujarat, not just were they late, "many stations reported extremely heavy rainfall (over 250 mm a day) consecutively for six days" until end-September (IMD, "Preliminary Report of Recent Heavy Rains in Gujarat and Rajasthan," October 2013), causing heavy flooding in parts of Gujarat and southern Rajasthan. The delayed withdrawal of the monsoon is becoming a pattern, at least in some parts. In southern Karnataka for instance, this year has been the fourth time in seven years. It raises three questions: why is it happening? How does it impact livelihoods? And what issues does it throw up in a warmer world?

Las Ninas, the stronger than usual winds that bring ocean waters and heat from east to west along the Equatorial Pacific, have often been given as the cause of recent extended monsoons. But not this time. Neither El Niño nor La Niña conditions have been present since the spring of 2012 (WMO, El Niño/La Niña Update, October 7, 2013). The India Met Department report mentioned earlier gives primacy this year to the Madden-Julian Oscillation (MJO) for the Gujarat floods in particular and "the large-scale revival of the Indian summer monsoon" in general. The MJO is a tropical disturbance that travels eastward around the tropics in a cycle of varying duration, significantly influencing patterns of rainfall and surface temperature in the tropics and subtropics.

Impacting agriculture

A late monsoon retreat damages standing crop, particularly paddy, which needs some days of clear sunshine to dry, change colour and fully ripen. If you cut it when it's still wet, it affects the yield and quality of both the grain and fodder. Leave the crop standing in late rains, and there's a heightened threat of insect attacks in the dampness. If the unseasonal, late rain is strong, as happened this year, it results in some of the grain falling off, hurting yields. This also happened when I visited my village in November 2007. Everyone I spoke to said it was a bad year — a 25-40 per cent loss of paddy seemed the most common refrain. In 2010, late rains extended well over a thousand kilometres along western India, from Rajasthan to Kerala. The Maharashtra Chief Minister admitted that more than half the crop grown on 1.3 million acres had been damaged, and suicides occurred among

grape farmers . And the last time was late October 2011. The paddy crop was damaged, every time.

And it's not just the farmers. It can also affect agricultural workers, for whom the extent of loss depends upon the number of potential days of earning lost, or getting less work. In 2010, we were carrying out a study of climate change impacts in Gujarat; extended rains again had severely damaged the cotton crop. In a number of villages in Sabarkantha district, women told us, "No one calls us for work now as all the crop has been damaged." Since cotton picking happens in repeated cycles, these women lost 30-40 days of work over the cotton season, or thousands of rupees per head. One can imagine its effects of earning, nutrition and nurturing on women already on the margins. Agricultural workers are usually missing from narratives of those affected by a changing climate. As are sharecroppers (DP/GALU/IUF, Where Have All the Seasons Gone? May 2011).

HINT OF CLIMATE CHANGE

Given the above, warnings in the latest IPCC report should make us pause. "Monsoon retreat dates will likely be delayed, resulting in lengthening of the monsoon season in many regions," says the Summary for Policymakers (p.16). More specifically, the subsection on the Indian monsoon in the full draft report says, "Regarding seasonality, model agreement is high on an earlier onset and later retreat (chapter 14, p.12)." Increased moisture flux from ocean to land in a warmer world is the reason given for increased precipitation but the report is not forthcoming (to me) about whether that is also the reason why monsoon retreat will be delayed. However, given that reality in many impact areas is manifesting earlier or more intensely than climate models predict, it would not surprise me if some of these late rain events already have the fingerprints of climate change.

This raises three issues: one, the IPCC report implies that delayed rains will become a repeated pattern. Not every year, but over time, with greater regularity and intensity. And intensity is something we may be unable to anticipate, as the Met Department report mentioned earlier says repeatedly. Two, we need to find out — this is work for government bodies and mass organisations — what adaptation strategies by farmers to cope with delayed monsoon retreats are successful, so they can then be reproduced. Three, the parameters of compensation need to be refined to compensate lower levels of yield loss for farmers than at present, and — a demand made by labour unions — widened to include agricultural workers and sharecroppers, who already are and will continue to be the less visible victims of global warming.

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P.S.

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