Data gaps beyond India are holding monsoon forecasts back

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Context:

The convenience of using the ‘all-India monsoon rainfall’ index for seasonal outlooks is undermined by the uncertainty India’s farmers face at local levels. Forecasts of rain weeks ahead of a date are getting better but they also increase the demand for even more accurate hyperlocal forecasts.

This demand is not only from farmers but also from water managers and energy companies, among others. We need a broader perspective of the monsoon circulation to help understand where the limitations exist and how they can be resolved.

The season began on May 30 as expected

The rainfall distribution looks as patchy as ever, though with some unexpected patterns.

IMD uses ‘all-India monsoon rainfall’ index for seasonal outlooks-is undermined by the uncertainty India’s farmers face at the local level

India have a rainfall monitoring network since the 19th century.

Factors outside India contributing to Monsoon:

The western edge of the winds over the African highlands, the heating over West Asia and even the dust from the deserts there, the active Bay of Bengal and even Pakistan is very much a part of the monsoon circulation and it experiences high rainfall variability.

The land encompassed by the Himalayan foothills, and thus Nepal and Bhutan, as well as the eastern edge of the Bay of Bengal (including Myanmar), is also involved in regulating the monsoon and the transfer of its heat to the Indian subcontinent

Data gaps and data insufficiency beyond India contribute to the less accuracy at the local level.

El Nino and La Nina are complex weather patterns resulting from variations in ocean temperatures in the Equatorial Pacific Region. They are opposite phases of what is known as the El Nino-Southern Oscillation (ENSO) cycle.

El Nino is typically known as the warm phase (a band of warmer water spreading from west to east in the equatorial Pacific Ocean)

La Nina is identified as the cold phase (a band of cooler water spreads east-west) of ENSO.

What is the India Meteorological Department?

About:

IMD was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied subjects.

It works as an agency of the Ministry of Earth Sciences of the Government of India.

It is headquartered in New Delhi.

IMD is also one of the six Regional Specialized Meteorological Centres of the World Meteorological Organization.

Way forward:

India does share its forecasts with some countries, but it may benefit more by extending this strategy to also establish a broad network to monitor weather and climate across the subcontinent. Improved forecasts for the subcontinent will make everybody safer and less vulnerable. This can only mean better opportunities for safety for all, including food, water, and energy, as well as better health.