



Dependence of Indian Agriculture on Monsoons: The Growing Farming Woes

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The Indian economy is heavily dependent on agriculture and the livelihood of the Indian farmer largely depends on the Monsoon rains. If figures are to be believed, 70 per cent of the Indian population depends on farming, either directly or indirectly. Around 58 per cent of the total employment in the country is through agriculture. Also, the agricultural sector in our country contributes to around 18 per cent of the GDP.

Monsoon & Agriculture Linkage

- The Southwest monsoon plays a crucial role in India's agriculture and affects the livelihood of a fifth of the world's population.
- About 80 per cent of the annual precipitation over India occurs during the summer period, supplying water to crops during the prime agricultural season.
- Monsoon friendly crops with a high requirement of water like sugarcane, jute and paddy can easily be cultivated during southwest monsoon.
- The agriculture sector in India is both economically and politically important. The industry accounts for around 14% of the country's \$2.7 trillion economy and 42% of total employment.
- Further, about one-third of India's manufacturing output — which makes up around 18% of the country's gross domestic product — is linked to turning agricultural products into food.
- Therefore, too much rainfall or too little or a volatile monsoon pattern, can damage crops.

Impact of Changing Monsoon

- **Depletion of Water Table:** In India, a little over 50% of India's net sown area is under rainfed farming and a large part of the irrigated area depends on groundwater extraction through borewells, which needs to be recharged with the groundwater. In the event of a poor monsoon, these aquifers may not get adequately recharged, leading to water crisis.
- Further, according to a NITI Aayog's report, nearly 21 Indian cities — including New Delhi, Hyderabad and Chennai — could run out of groundwater by 2020.
- **Fiscal Burden:** Multiple crop failures may require the government to actively support farmers. Most likely, it may prompt the government to raise minimum support prices for all of the current season's crops to help support farmers' incomes. This will have a diminishing effect on investments into agricultural investments.
- **Impacting Electricity Generation:** Monsoon rains can be harnessed as hydropower, a valuable energy resource. Hydropower currently provides 25% of India's electricity.

Reservoirs are filled during the southwest monsoon rains and then the water is gradually released through dams, turning turbines to create electricity year-round.

- During years when there is little monsoon rainfall, the reservoirs are not replenished, limiting the amount of hydroelectric power produced during the year.
- **Impacting Inflation:** Normal monsoon rains keep a check on food inflation due to availability of food produce. However in a situation of drought, prices soar significantly. Also, if a poor monsoon results in less crop output, the country may need to import.
- It also impacts as many as a dozen sectors which depend on monsoon either directly or indirectly.

Way Forward

- **Addressing Water Scarcity:** Water availability is a national challenge. We have 18% of the world's population with just 4% of freshwater resources.
- Thus, the Indian government needs to put a high priority on investing heavily in improved water storage systems for the agricultural sector.
- It would be worthwhile to give high priority to "more crops per drop" approach, rainwater harvesting, aquifer recharge, revival of water bodies and conservation technologies.
- **Addressing Inefficient Water Use:** Water use patterns are awfully inefficient in India, where Indian farmers use two to four times more water to produce a unit of any major food crop.
- Thus, Indian agriculture needs to adopt newer, less water-intensive technologies faster.
- In this case, it needs a doubling down on efforts such as the ongoing government of India schemes to incentivise the use of micro irrigation measures that use water more efficiently.

Conclusion

Global climate change is not a new phenomenon. The effect of climate change poses many threats; one of the important consequences is bringing about changes in southwest monsoon and its impact on agriculture. As India has set a target of halving greenhouse gas emissions by 2050 [15]. There is an urgent need for coordinated efforts to strengthen the research to assess the impact of climate change on agriculture, forests, animal husbandry, aquatic life and other living beings.

Southwest Monsoon in India is a four month long affair from June till September. More than 75 per cent of India's annual rainfall occurs during this period itself. The fate of the Kharif crops depend on the performance of the southwest Monsoon. Good rains during the season result in bountiful crops which further benefit the farmers. A major portion of the country's crop area is completely dependent on Monsoon rains as they're not equipped with methods of manual irrigation. Simply speaking, the Indian economy gains due to good Monsoon rains in the country. On the other hand, weak Monsoon rains result in crop failure which affects the economy in a negative manner due to lower production. Later on, this translates into price-rise, low industrial output, and other issues.

More than anything else, the failure of Monsoon has a huge impact on the life of the Indian farmer. Most Indian farmers rely on good crop produce during Monsoon to earn their living and in order to overcome debts incurred. Crop failure and/or deficient rainfall is one big reason for mass farmer suicides across the country. This further cements the importance of Monsoon in an agrarian economy like India. Lastly, agriculture isn't the only sector which is affected by the performance of Monsoon. In fact, as many as a dozen sectors depend on Monsoon, either directly or indirectly. Thus it is safe to say that Monsoon does play a big role in India. The agricultural output of rain-fed crop areas in the country has social, political, as well as economic implications.