

Climate Change Impact on Tamil Nadu's Agricultural Economy

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Introduction

Climate change is causing a rise in sea levels as well as increased flooding and cyclones in some parts of the world, and drought and water shortages in other parts. For the 72 million inhabitants of Tamil Nadu, it's both. This is likely to have severe impacts on the state's agricultural economy since agriculture contributes nearly 10% of the state's GDP. With a net cropped area of nearly 51.29 lakh hectares of land, agriculture also provides employment to 60% of Tamil Nadu's rural workforce.(Krithiga Narayanan 2021)

According to a study conducted by the South Asian Network for Development and Environmental Economics (SANDEE), the change in rainfall and temperature will particularly affect the growth of crops like rice and sorghum that are very sensitive to these changes. It predicts climate change will cause a reduction of rice yields of 283 kg per ha per decade and a reduction in sorghum yields of 88 kg per ha per decade by the year 2100 – a 10% and 9% decline in yields respectively by the end of the 21st century, relative to average yields during the base period 1971–2009.

Monsoon of Tamil Nadu

Tamil Nadu is one of the most water starved States and is endowed with only 2.5 percent of the Nation's water resources putting high stress on irrigation water availability and vulnerable to seasonal fluctuations causing uncertainty in agriculture production. The average annual rainfall of the State is around 987 mm which is less than the National average of 1,200 mm. The quantum of rainfall received during winter (January - February), summer (March - May), South-West Monsoon (June – September) and North-East Monsoon (October -



December) is 3, 14, 35 and 48 percent respectively. The per capita availability of water is 900 cubic meters per year as compared to the all India average of 2,200 cubic meters. The major crops in Tamil Nadu are rice, maize, cotton, urad bean, groundnut, jowar, bajra, mungbean, banana, and sugarcane, paddy being one of the major food crops in the state.(FAO 2008)

Are Existing Policy Initiatives Enough to tackle?

Climate change affects agriculture in a number of ways, including through changes in average temperatures, rainfall, and climate extremes (e.g., heat waves); changes in pests and diseases; changes in atmospheric carbon dioxide and ground-level ozone concentrations; changes in the nutritional quality of some foods, and changes in sea level. Research and development to improve crop productivity, mitigating effects of extreme weather events, recharging groundwater and countering seawater intrusion, soil and water conservation are some of the areas highlighted in the strategies to counter the effects of climate change in Tamil Nadu. But several gap areas such as fund allocation, technology transfers, weather-based crop insurance, capacity building, alternate agro-based livelihood options still exist which need to be resolved for the successful implementation of climate change mitigation strategies.(Nawale, 2011)

The State of Tamil Nadu came up with its first Climate Change Action Plan in March 2015. It highlighted several climate-resilient policy interventions for the agriculture sector which include the development of suitable cropping systems for changing climate scenarios and soil test results. It notes that small farm holdings are highly vulnerable to the changing climate as nearly 48% of the farming area is dependent on inconsistent rainfall.

In February 2020, it drafted another state action plan on climate change, the Draft Tamil Nadu State Action Plan on “*Climate Change-2.0*”. This plan prioritizes sustainable agriculture strategies like popularizing strategies to reduce the loss in agriculture due to extreme weather, increasing the use of micro-irrigation technology, creation of ponds to harvest rainwater, strengthening existing crop insurance program, forecasting disease outbreaks in plants, and popularizing breeding of an indigenous variety of plants.

According to the draft action plan, the total amount required for the implementation of the proposed activities in agriculture and allied sectors in Tamil Nadu is approximately INR 71,731.94 Crores. However, the two plans never saw the light of the day. The Tamil Nadu Government is presently in the process of finalizing the draft, but experts are of the view that



other supplementary issues are likely to make it even more difficult for the effective implementation of these policies (Rakshit, 2009).

Some of these issues are,

- Labour shortage during peak seasons
- Stagnation in yield levels
- Indiscriminate use of fertilizers and pesticides that increases the cost of cultivation as well as pollution levels
- Pollution of water bodies due to mixing up of industrial effluents that affect human and animal health
- Political instability
- Lack of minimum support price for most of the crops which lead to uncertainty in farmers' incomes

Keeping many of these challenges in mind, the State government has also announced three big-ticket initiatives

- Tamil Nadu Climate Change Mission
- Tamil Nadu Wetlands Mission
- Green Tamil Nadu Mission in August this year, to help the state deal with the vagaries of climate change.

Conclusion

As the challenges of climate change keep evolving and its impacts become more intense, it is imperative now more than ever to keep updating existing climate policies constantly and also invest more in sustainable policies for resilient climate action that protects the environment and the farmers alike (Minaxi, 2011).

References

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