



## Productivity and Constraint: Agricultural Scenario of Assam, India

### KEYWORDS

Assam, agriculture, productivity, rice, irrigation

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**ABSTRACT** Assam is blessed with fertile soil and its climatic conditions favours agriculture. Agriculture accounts for more than a third of the state domestic product. In the last fifty years, the total production of food grains and other crops have recorded an increase, but the per capita food grain has showed a decline. There is also evidence of productivity declines in recent years of major crops, particularly rice. Some factors constrain low productivity in the agricultural sector, most important being the frequent occurrences of the flood. Moreover, the introduction of modern technology and market-oriented agriculture has also been left aside in the state Assam of India. Economic and real sector growth in most of the districts of Assam, India hinges on agriculture and results in declined irrigation facilities, marketing and storage facilities.

### Agricultural scenario of Assam

The economy of Assam, India is agrarian in nature with about 53 % of the population dependent on agriculture (Survey period: 2012-13). Chief agricultural products of the state are rice, tea, jute, mustard, pulses, sugarcane, potatoes, oranges, pineapples, coconut, betel, black pepper, citrus fruits and bananas besides many types of vegetables (Gadgil et al, 2000; Nath, 2014). The total annual production of rice in the state is about 2.02 million tons. Assam excels as number one tea producing state in the country contributing to over half (215,157,000 Kg) of the total annual production of the country and the state earns about 11% of its revenue from tea production.

Assam's faunal wealth is matched by the diversity of its plant resources (Ahluwalia, 1978; Jeeva et al, 2006). The North East region has been identified by the Indian Council of Agricultural Research (ICAR) as a center of rice germplasm and is a center of origin of commercially important plants such as banana, citrus, Zizyphus and tea recognized by Department of Environment and Forests. The National Bureau of Plant Genetic Resources (NBPGR) has highlighted the North East region as being rich in wild relatives of crop plants. Assam is also very rich in medicinal plants and many other rare and endangered taxa and is characterized by high levels of endemism (Das, 2008). Assam's richness of flowering plants is estimated at 3010. About 293 species of orchids have been reported from Assam representing 44.39% of North East species and 24.42 % of species occurring in India. The state also holds much bamboo (41 species) and cane species diversity (14 species) including some species reported only from Assam.

The agro-climatic conditions of Cachar district of Assam, India are favorable for various agricultural activities (Singh, 2010). Agriculture in this district is characterized by over-dependence on rainfall, the predominance of seasonal crops and traditional methods of cultivation (Goyal, 2014). The gross cropped area in Cachar district is 1,46,219 hectares while the net sown area is 1,15,489 hectares; the cropping intensity in the district is 126 percent. The district has a total of 2,07,119 numbers of farm families and the majority of whom are landless and marginal farmers. Irrigation facilities cover only about two percent of the net

cropped area. It has been found that the present rate of cropping intensity at 123.5 % can be raised up to 150 % by extending assured irrigation facilities. Further, the use of certified seed covers only 1.15 % of the total cropped area, and the fertilizer consumption is only 30.58 kg/ha in the district.

### Impact of climate change on cropping

Like the rest of the northeast region of India, Assam is extremely vulnerable to climate change (Traub et al., 2004). Assam has a high reliance on agriculture that is likely to increase only in given growing population. Climate change poses additional challenges as higher temperature increases the need for irrigation and the risk of heat stress or crop failure. Changing weather patterns and rising temperatures leave farmers vulnerable to crop losses. Additional precipitation increases the risk of crop flooding. Climate change will also negatively impact the water resources sector by increasing freshwater scarcity, which is already a problem for Assam in the summer. The Northeast region has the highest forest cover in India, which provides some adaptive advantages. Forests can reduce soil erosion and runoff, regulate flooding and temperature and mitigate climate change. However, Assam has the lowest forest cover in the region at 35.5%, and reports indicate that it is decreasing.

Various problems like low seed and varietal replacement rates, deteriorating soil health and ground water, high humidity, and low shelf life, etc. are some of the very critical problems for the agriculture sector in Assam. The overall growth rate in agricultural sector since 1980's has been a little over 2 %, which is not sufficient to generate surpluses for investment, or create purchasing power in the rural sector to provide a market for local industries. Cropping intensities and crop productivities remain low, and crop diversification is, at best, nascent. Fragmentation of land holdings, low irrigation coverage and the limited adoption of new technologies and practices are some of the constraining factors that are detrimental to the advancement of the sector.

Every year, Assam suffers from devastating floods. These are likely to become more frequent due to increasing precipitation, more frequent storm events, deforestation and

a growing population living in the most flood-prone river area. The combination of climate-related agricultural stress, growing population, frequent disasters and poverty may increase the strain on Assam's already stressed public health system, food distribution programs, and public assistance schemes.

### Conclusion

The economic and real sector growth in Cachar District of Assam, India, which hinges on agriculture, is constrained by poor irrigation facilities and poor marketing and storage facilities in the district. The increasing casualisation of labor together without migration for livelihood speaks about the levels of deprivation. The most difficult part of adapting to

climate changes would be to change the mindset of the growers. It would take a great deal of continuous and tireless efforts to change the age-old practices of crops productions before many of them quit the practice of agriculture and shift the mode of livelihood.

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