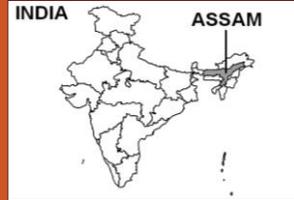


# THE TEA PLANTATION LANDSCAPES OF ASSAM

LOCATION: ASSAM, INDIA

The state of Assam is one of most globally important tea-producing regions of world; manufacturing high-end graded tea which contributes to around 17% of global tea production and annually produces more than 50% of India's total tea.



## RESEARCH OBJECTIVES

1. Identify which climate variables have the greatest impact on tea production
2. Investigate which land management practices will be most sustainable under future climate change
3. Determine the role of tea in the landscape to promote long-term livelihood resilience

## PRINCIPLE INVESTIGATORS



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## TEA GROWTH

Tea is a rain-fed perennial crop and is one of the most important beverage crops in the world. India is the world's largest and longest established producer of black tea. Tea is the primary crop of the north-east India 'green-belt' region of Assam. The eco-physiology of tea plants is closely linked to external environmental and climatic factors (e.g. elevation, precipitation, temperature, soil moisture etc.) and any adversity in these conditions can significantly impact yield, revenue and livelihood security.



ABOVE Tea harvesting is undertaken every 7-10 days in plantations; tea pluckers are generally female

The relationship between tea yield and climatic factors implies that long-term climatic change will impact the key physiological and developmental processes that determine the yield of tea.

## LIVELIHOODS

International trade in tea is among the largest in value among tropical and subtropical crops. Tea landscapes play a pivotal role in livelihood security at various global localities e.g. harvesting of tea crops needs a large labour force which provides employment opportunities.

Around 2 million labourers in Assam are dependent upon high tea yields, both in quality and quantity. Most tea workers have worked in the tea industry for more than three generations; it is their way of life.

RIGHT Rainfall has traditionally been plentiful for growing tea, but with recent changes in the climate, surface and ground water are becoming more important for potential irrigation systems



## CLIMATE CHANGE

Climate risk is high in Assam, ranging from annual flooding of the Brahmaputra River, due to intense monsoon rains and soil waterlogging, to winter precipitation deficits with seasonal droughts. Changes in temperature and precipitation are thought to be impacting tea productivity.

This project will use statistical methods to investigate changes in the climate and determine which climate variables have the greatest influence on tea production. Research will also explore likely tea impacts under future climate-change scenarios.

## PLANTATION PRACTICES

Large-scale monoculture tea plantations (also called estates or gardens) generally supply commercial cultivation. Contrastingly, local-scale smallholder production is traditionally used to supplement subsistence agriculture. Approximately 75% of tea crops are cultivated in plantations and 25% through smallholder plots. There has been a steady increase in smallholder production for cash crop export.

Agricultural practices and landscape management approaches need to be adaptive and focus on moving agricultural system operations towards 'safe spaces'. Such spaces exist where agricultural security and livelihoods are sustained without crossing critical environmental or social limits and the system is resilient to climatic changes.

## BEING CLIMATE-SMART

Climate-smart agricultural practices and management approaches aim to ensure sustainable increases in productivity and income, enhance agro-ecosystem resilience to climatic change and mitigate agriculture's contribution to climate change. Climate-smartening Assam's tea plantation landscapes would deliver multiple simultaneous benefits to livelihoods and the environment whilst developing resilience to uncertain and negative climate change impacts.

FOR FURTHER INFORMATION GO TO  
[www.teaclimate.com](http://www.teaclimate.com)