# Darjeeling's tea struggles amid climate change as coffee cultivation rises



Darjeeling’s iconic tea industry, renowned for its muscatel-flavoured leaves, is confronting significant challenges from climate variability, even as coffee cultivation begins to take root in the same hilly terrain. Over the past decade, coffee plantations have expanded from a modest two-acre pilot project in Latpanchar to more than 500 acres spread across Darjeeling and Kalimpong districts, signalling a noteworthy diversification in the region’s agricultural landscape.

The introduction of coffee cultivation in these hills follows historical precedence, as both tea and coffee were initially introduced in the 1840s by the British. However, whereas tea thrived, coffee failed to establish itself owing to the extreme cold and frosty conditions prevailing at that time. Climate change has now altered these conditions: Darjeeling’s average temperature is rising, with projections suggesting an increase of 5.4°C by 2100, creating more favourable conditions for Arabica coffee, which requires temperatures between 18°C and 23°C and annual rainfall of 160 to 250 centimetres. Similarly, Kalimpong, situated at a lower altitude, has suitable conditions for robusta coffee, which prefers 20°C to 30°C and 100 to 200 centimetres of rainfall annually.

Dr Samuel Rai, director of the Directorate of Cinchona and Other Medicinal Plants (COMP), whose department spearheaded the coffee initiative, detailed the journey from experimentation to early success. “We ventured into coffee plantations as a pilot project at Latpanchar in Darjeeling district in 2014. Since then, we had been gradually increasing the plantation area every year,” he said. COMP initially harvested 500 kg of robusta coffee cherries in 2017, growing to one tonne by the following year. When market prices for raw cherries were unsatisfactory, the team processed the cherries themselves—manually pulping, roasting, and powdering the beans—and successfully marketed the final product locally, even receiving positive feedback from ministers and secretaries.

The enthusiasm has spread to local farmers. Arjun Rai from Kalimpong noted that switching from traditional spice crops such as ginger and black cardamom to coffee has been profitable. “Coffee is now supplementing the income of many farmers in my locality. They are now encouraged to go for further expansion of the plantation area,” he remarked. Coffee plants take around three years to yield cherries and six years to reach full maturity, with an annual yield of approximately 4.5 to 5 kilograms per mature plant. Since 2018, the COMP and the Gorkhaland Territorial Administration (GTA), a semi-autonomous council governing Darjeeling and Kalimpong, have supported the initiative through farmer training, sapling distribution, and land cultivation, with about 1,000 farmers now involved.

The West Bengal government is actively promoting coffee cultivation, aiming to establish sustainable production and stronger market linkages. The panchayats and rural development department has been shortlisting farmers for advanced training programmes, supporting the shift towards a market-responsive coffee industry.

The rise of coffee comes at a time when Darjeeling tea production experiences a significant downturn. In 2024, production plummeted to a historic low of 5.6 million kilograms, the lowest in its 169-year history. Industry stakeholders attribute this decline largely to erratic weather patterns, changing rainfall cycles, and climatic stress, compounded by policy and management issues.

Chinmoy Dhar, manager of the Majherdabri Tea Estate, highlighted key climatic requirements for quality tea production, including a minimum temperature difference of four degrees between day and night, high humidity, and consistent annual rainfall between 304 and 355 centimetres. “Currently, the rainfall is erratic. Sometimes we witness a deluge of as high as 250 inches within a short span, followed by a dry spell with less than 80 inches of rain. Even the season's pattern is changing,” Dhar explained. Such fluctuations undermine the biochemical processes in tea leaves, especially the development of flavour and aroma.

To address these challenges, the Tea Board has recommended measures such as planting drought-tolerant tea cultivars, maintaining adequate shade trees, improving drainage and rainwater harvesting, and enhancing pest management strategies. Recent regulations include a Plant Protection Code mandating responsible pesticide use, with a ban on 20 specific chemical pesticides. However, Dhar observed that the ban has had unintended consequences in some gardens, as non-chemical pest controls have proven less effective, leading to crop damage.

Trade union leader and Communist Party of India (Marxist) central committee member Saman Pathak pointed to managerial and labour issues as additional factors exacerbating production woes. He noted that workers in about 15 of Darjeeling’s 70 operational tea gardens staged a boycott this year over unpaid bonuses, directly impacting the harvest. He also cited shifts in garden management priorities, highlighting that some estates are leasing land for tourism ventures, thereby reducing tea cultivation areas.

The contrasting trajectories of tea and coffee in Darjeeling encapsulate a complex interplay of environmental change, economic adaptation, and policy response. When asked whether coffee might eventually replace tea in the region, Dr Rai refrained from speculation, calling it “a very sensitive issue,” though he acknowledged the rapid growth of coffee plantations.

As Darjeeling’s hills witness coffee planting gain momentum alongside the venerable tea industry’s struggle with climate and market challenges, the evolving agricultural landscape reflects broader transformations in a region historically synonymous with tea. The developments underscore an ongoing realignment of crops and livelihoods amid changing environmental and economic conditions.

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