

GROWING TEA IN A CHANGING CLIMATE

HOW CAN AFRICA'S TEA GROWERS ADAPT TO CLIMATE CHANGE

The impacts of climate change on the yields and quality of tea in Africa, significantly impact the economies and livelihoods dependent on the tea sector. As a crop which is already very sensitive to the climate, future climate change poses an increasing risk for tea production. Implementing climate smart agricultural practices is becoming more and more important to ensure African countries can continue to grow their tea industries in the future. Understanding what the future climate might look like and the types of hazards facing tea growing regions are important in identifying adaptation options that are relevant in the local context.



ADAPTATION IS LOCALLY SPECIFIC

There is no one size fits all for adaptation. While tea producers may face similar challenges, different farms may be dealing with a combination of different risks linked to local climate conditions, soil conditions and water availability. While low regret adaptation options help address the risks of both current climate risks and help build resilience for future climate change, the best adaptation options for each farm depends on the local climate and environmental conditions, access to technology and available resources. Investments in additional weather stations and improved climate change information, is vital in navigating the current and future challenges facing tea production in Africa.

RESPONDING TO MAJOR CLIMATE RISKS

Risk:

Increasing temperatures, longer and hotter heat waves.

- Planting shade trees and rows of trees around tea farms (tree belts) can help reduce air temperatures.
- Developing new clones of tea plants that can withstand higher heat.
- Establishing new plantations upslope and at higher altitudes where temperatures are lower
- Insurance can reduce the financial losses for estates caused by climate and weather events.
- Diversifying the types of crops farmers grow to provide an income when tea is negatively impacted by climate and weather events.

An illustration showing tea growers in a landscape with several large, mature trees providing shade. The sun is visible in the sky, and the tea plants are growing in rows. The growers are using traditional baskets to harvest the tea.

KEY CONSIDERATIONS

Planting shade trees in densely planted tea farms may come at the cost of reducing space for tea or increasing competition for water.

Long lifespan of tea plants and time taken for crop breeding and piloting makes it difficult to transform tea plantations in a timely manner. Additional heat tolerance may affect or yield

Various factors (e.g. land access and suitability) may restrict the set up of new plantations. Shifting growing regions, could also result in biodiversity loss and threaten sensitive ecosystems

While insurance can spread risk for climate extremes, it does not protect farmers against long-term changes

Tea farmers are set up for tea production, and introducing new crops into farms may bring a new range of costs and challenges.

Risk:

Droughts and dry spells may happen more often, last longer and be more intense

- Improved water management strategies which ensure water availability during dry periods. This could include on-site water harvesting and climate smart irrigation systems.
- Afforestation and rehabilitation of local ecosystem can improve soil moisture and improve soil nutrients
- Breeding new drought resistant tea clones can ensure future plants are able to cope in a drier environment.
- Adopt climate smart agricultural practices that conserve soil moisture and fertility, e.g mulching, pruning, using organic composts, tree belts or contour planting.

An illustration showing tea growers in a landscape with a water harvesting system (a large pot on a stand) and rows of tea plants. The sun is visible in the sky, and the tea plants are growing in rows. The growers are using traditional baskets to harvest the tea.

KEY CONSIDERATIONS

Investing in on-site harvesting and irrigation may be expensive and inefficient. Careful consideration is needed on the climate suitability and cost-benefit of these options.

In many cases restoring and maintaining ecosystems requires a collective effort, and may be too expensive for individual farmers.

Long lifespan of tea plants and time taken for crop breeding and piloting, makes it difficult to transform tea plantations in a timely manner. Possible trade off with yield or quality.

Densely planted tea make it difficult to use mulch and use cover crops on large estates, however these practices are importing when establishing new plantations

Risk:

Heavy rainfall events may happen more often with more rain falling during these heavy rainfall events.

- Improved water management, particularly in rehabilitating drainage channels can reduce flood risks.
- Afforestation, including planting tree belts along slopes to reduce soil erosion, the risk of landslides and also improve drainage.
- Adopt climate smart agricultural practices that improve soil drainage and limit erosion, e.g planting grass strips and contour planting along slopes.

An illustration showing tea growers in a landscape with a river and rows of tea plants. The sun is visible in the sky, and the tea plants are growing in rows. The growers are using traditional baskets to harvest the tea.

KEY CONSIDERATIONS

Managing and restoring drainage patterns is costly and requires a collective effort across watersheds.

Afforestation needs to be a collective effort. Additionally, the types of trees planted are important, with fast growing indigineous trees that offer long-term benefits being ideal.

Densely planted tea makes it difficult to plant cover crop or grass strips on existing farms, however these practices are important when establishing new plants

THE DIFFERENT CATEGORIES OF ADAPTATION:

Low regret adaptation options:

Adaptation options which can reduce the risk tea farmers currently face as well as building resilience for the future (i.e. good to do anyway). These options are early cost effective ways to help farms adapt.

Climate Smart Planning:

Adaptation options which include climate resilience in current and planned activities, especially those with long life-times, to ensure decisions made in the near term will benefit tea production in the future climate.

Early activities to address future changes:

Starting the process of iterative adaptation planning to provide information, build future options and help make decisions in the future, including the research and monitoring processes to provide knowledge and learning.