

A case in point of how green industrialization has contributed to economic growth in Kenya is of the Kiamokama Tea Factory, commissioned **in 1976** in the western Rift Valley, one of the oldest factories managed by the Kenyan Tea Development Agency (KTDA), which currently oversees 68 small-scale tea producers. Kiamokama manufactures and sells **CTC** (Crush, Tear, and Curl) Black Tea, most of it exported.

Climate change has had a profound effect on the industry. Between October and **December 2016**, the factory saw a **40% decline** in tea leaf harvesting – stark evidence of the fluctuations caused by erratic rain patterns and extreme temperature swings triggered by climate change. Kiamokama realised it needed to stabilise production costs and lower fixed costs – most of which were going to energy.

The factory began energy-saving measures by implementing suggestions made by the Kenya Cleaner Production Centre as part of a technical assessment. It replaced **36W and 58W fluorescent lights** in sorting and CTC areas, with **30W LED floodlights**. Translucent roofing sheets allowing for natural lighting during the day were fitted. And 'Switch off lights when not in use' signs are visible at various switch points.

Kiamokama also commissioned an in-depth energy audit by an external expert – who found that the factory's most energy-intensive processes were withering, drying and 'Crush, Tear, Curl', which accounted for **32%, 31% and 30%** of energy consumption, respectively.

In tea processing, the withering and drying processes are the most energy intensive. They can account for as much as 60% of electricity consumption, are sensitive to fluctuating temperature and moisture and are thus highly vulnerable to the impact of climate change. So, it was on these very processes that Kiamokama decided to really focus its climate adaptation response.

The more efficient fans and electronic controls were put in place that ensure the appropriate air volume for specific climate conditions are applied to the fresh leaves. This improvement of the withering process, which is particularly sensitive to moisture control, increased efficiency. Because the installed motors, in combination with the efficient blades, needed less power to generate the required air volume, these allowed energy savings of more than 60%. And this has, in turn, lowered production costs - which has also benefited the farmers who own shares of the factory.

Kiamokama's implementation of a low-carbon and the climate-resilient solution has already led to electricity savings in comparison to business-as-usual and that can be translated into a significant **CO2 reduction.**"

- United Nations Industrial Development Organization Report 2019