



Background on some of the issues raised in “Leandro and the mysterious case of the disappearing and reappearing river”

Tea around the world

After water, tea is the world’s most popular drink - 70,000 cups are drunk each second. Globally, as many as 50 million people are involved in the tea industry in many developing countries. Tea is usually grown on plantations and less typically by small scale farmer cooperatives.

Tea grows in bushes that take up to five years to mature. Once grown, they can keep producing tea leaves for decades, with pluckers picking the freshest top leaves every week or two. Once tea is plucked, it must be processed at tea factories.

Market prices for tea haven’t increased in real terms over the last 30 years. Meanwhile, farmers have faced significant increases in living costs due to food price inflation, reduced yields and increases in the price of farm inputs like fertiliser.

Tea in Kenya

Around 3 million people are involved in the tea industry in Kenya, so it’s vitally important for Kenya’s economy. Tea grows best at altitudes between 1500m and 2100m. It needs well-distributed rainfall and stable temperatures. Tea is heavily reliant on established rainfall patterns, and is sensitive to evapotranspiration and frost.

Tea plucking removes nutrients from the plants and soil. This means fertiliser is a necessary input to making tea a sustainable livelihood for farmers. This has implications for water quality and pollution, however if farmers can use natural fertilisers (like animal manure) these help maintain soil productivity in the long-term.

There are concerns over the long-term viability of tea. Over 500,000 small-holder tea producers are finding out that they can no longer rely on growing tea alone because they can’t earn enough from it, even where they farm intensively using artificial fertilisers. This way of farming also damages the soil in the long-term.

Tea and climate change

Climate change can impact farmers and crops through rising temperatures, shifting of seasons, drought, storms and flooding. Because tea is dependent on regular rainfall, climate change poses a threat to tea globally. Kenya is already undergoing changing weather patterns, which include increasing temperatures, decreasing rainfall and increases in hail, droughts and frosts.

So as climate changes, and temperatures and rainfall patterns change, the quality and quantity of tea produced changes, affecting how much farmers earn from selling their crop. In recent years there has been a reduction in overall rainfall levels in many tea-producing regions. The rainfall that does come is often more extreme with long dry periods punctuated by violent floods. As a result, water is not properly absorbed into the soil and/or water table.

Current climate modelling actually predicts that average annual rainfall in Kenya tea growing regions will *increase* by 4% by 2050. However this will likely be counteracted by increased evapo-transpiration resulting from more than 10% temperature increase (2.3°C) by 2050. The altitude at which it is suitable to grow tea is likely to change - to altitudes of between 2000 and 2300m.