

COCOA FARMERS ADAPTATION TO CLIMATE CHANGE IN GHANA



COCOA intercropped with timber and other economic tree crops Photo credit: Arhin Patrick

Sub-Saharan Africa (SSA) is one of the most vulnerable regions in the world to climate change (IPCC, 2014). Approximately 62% of the population of SSA is employed in agriculture (IFAD, 2011), and in 2014 it was estimated that 75% of those in rural areas were living in extreme poverty (less than 1.90\$/day) (OPHI, 2014). Sub-Saharan Africa faces massive impacts from climate change particularly with regards to agricultural production. Climate change projections for this region point to a warming trend, particularly in the inland subtropics; frequent occurrence of extreme heat events; increasing aridity; and changes in rainfall. In the recent past, Ghana's agricultural performance and that of the sub region has increasingly raised questions of sustainability.

Whilst the historical average rate of agricultural growth in Ghana has been lower: 2% for 1991-95 and 3.9% for 1996-2000, the scope for productivity growth is large and data on yield gaps between Ghanaian productivity levels for crops, compared to achievable yields show gaps in the range of 20% for oil palm, 40% for maize and rice, to 60% for cocoa, cashew and citrus. Rural and urban areas continue to remain heavily dependent on natural forests for fruits, green foods, meat, building materials, raw material for household goods, timber, fuel wood, charcoal and water.

The significant annual increases in population and human activities also puts more pressure on the land and other natural resources, whether if it is areas for more farming or incursions for more game and forest products, much pressure is brought to bear on the environment with species extinction. Subsequently, we are faced with species depletion and climate change. Temperatures and rainfall pattern variability and predictability. Cocoa farmers in Ghana totally depend on their previous knowledge on weather conditions to make predictions into next season cultivation, maintenance, and work accordingly. However, due to climate change, the rate of failure of these predictions appears to impart negatively on the farm outputs. This unfortunate change can be attributed to high surface temperatures of the Earth leading to drought or long dry spells. Until this current situation, the rain season was consistent and reliably predictable. This used to aid farmers to know when to plant, control weed and administer pesticide and bountiful harvests. Nevertheless, that is one out of several ways to

correctly predict rainfall pattern for the forest zones including the use of modern-day technology.

While the negative impacts of this climate change immensely outweigh that of the gains, the impact on cocoa production is very telling as output drastically reduces due to;

- Increase in cocoa flower abortion
- Smaller cocoa beans sizes.
- Increase in Cherelle wilt (wilting of pods) incidence.
- Increase in cocoa seedling mortality due to wilting and drying up.
- Unexpected attack like capsid and other insects on the cocoa trees.
- Pesticide application yielding less results.
- Low crop yields and loss of appetite for cocoa production.



COCOA species extinction Photo credit: Arhin Patrick

Most often than not, these farmers' main source of income is generated from the seasonal cocoa harvests. The livelihoods of these farmers is threatened and further exacerbated by abject poverty. As an additional alternative mechanism to their already meagre incomes, some farmers end up encroaching on forest reserves around their communities as a means of survival through to the next cocoa season. Most farmers refuse to acquire legal permits to harvest responsibly from forest resources and eventually contribute to deforestation and degradation further providing impetus to fuel climate change.

As an adaptive measure, farmers living in these climate zones are encouraged by supported by Pledge Ghana to adopt to diverse cash crops and other conservation farming options that

contribute to renewing the vegetation. For instance, people living in Techiman, Akomadan, and others transition zones of the country where land used to be suitable for cocoa production have lost that status to other crops like cashew due to the negative impacts of climate change. Bee keeping which also adds to the rich biodiversity of ecosystems is adopted to enhance standards of living of farmers in these zones. As a means to reducing poaching activities and the extinction of wild and endangered species, the government places a ban on hunting activities in Ghana from the 1st of August to the 1st of December every year.

An agroforestry approach, which emphasizes the deliberate integration of trees and shrubs into farming and pastoral systems, which complement and enhance the sustainability, productivity and resilience of those systems through biological interaction. These practices can be easily adopted, practiced and scaled-up by vulnerable small-scale farmers. It focuses heavily on low-cost, rapid and proven effective technologies, such as Farmer Managed Natural Regeneration and the integration of leguminous 'fertilizer' trees into cropping systems to enhance soil fertility.

In a nut shell, a delay at controlling the rate climate change incursions in cocoa growing regions may lead to unfavourable transitions for cocoa production in Ghana to other more thriving crops as a means of survival. A further delay at reversing the climate change effects in these areas may lead to loss of entire landscapes to desertification in the very near future. Therefore, it is Pledge Ghana's highly recommended policy for farmers living in communities around forest reserves to exercise first oversight on forests resources, a strategy akin to the CREMA of FC as a shared interest to towards protecting our future. Conservation approaches coupled with this inverse protectionism will sustain healthy environments and the cocoa landscapes and the people in those areas.

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