

AGRA Impact Series



Improving agricultural income in Western Kenya brings biodiversity gains

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A project by the Alliance for a Green Revolution in Africa (AGRA) and other partners in Kenya's Western region has shown how increasing the agricultural incomes of farmers living next to protected lands can lead to better outcomes for biodiversity.

The project sought to reverse the damage caused to the Kakamega Forest, Kenya's only tropical forest as a result of human encroachment linked to a bulging population density in the area around it. The Kakamega Forest is home to unique floral species that are now suffering from unregulated exploitation as the population density in the region increases.

Western Kenya has the highest population density in the country, with some counties - like Vihiga - reaching up to 1000 people per square kilometer. In comparison, Kenya's national population density is 90 people square kilometer, according to World Bank data.

Together with the United Nations Environment Programme (UNEP) and the Kenya Agriculture and Livestock Research Organisation (KALRO), AGRA discovered that the rising population growth was linked to declining agricultural income and, eventually, the advancement into the Kakamega Forest.

"The population bulge in Western Kenya has resulted in increased demand for food, shelter, water, energy, and waste disposal. In order to meet these needs on their low-production landholdings, locals have encroached into the forest to open up new farms and obtain timber, fuelwood and medicinal herbs for sale to supplement their incomes. The end result has been increasing levels of degradation of the forest," said AGRA's resilience officer, Assan Ng'ombe.

To achieve the economic turnaround needed to tame the rapid exploitation of the forest, the project sought to address systemic failures in three cropping systems – maize, beans, and traditional African vegetables.

The project was further designed to promote sustainable forest management through farmer engagement, policy development and building government capacity to address biodiversity threats.



This is following research showing that enhancing farmer incomes from their own legal landholdings plays a key role in enabling the protection of vital ecosystems such as the Kakamega Forest, according to George Ayaga, the senior principal research officer and center director at KALRO.

On this note, farmers were trained on modern techniques that reduce the pressure on the land while keeping agricultural productivity sustainable. The farmers were also taught to capture high-value markets through value addition and other strategies such as produce aggregation for better prices.

So far, the project has been a success with targeted farmers reporting a 17 percent increase in income since 2017. Households in the area earned an average income of over US\$1,000 in the two growing seasons annually, mainly from the sales of maize, beans and indigenous vegetables.

“Additionally, as a result of the improved financial positions of the farming communities, there is evidence of agroecological landscapes being restored,” said John Macharia, AGRA’s lead program officer for Kenya, Uganda and Rwanda.

The evidence suggests that farmers with access to agricultural advisory services have a greater

likelihood to implement sustainable land and forest management (SLFM) strategies in their agricultural production than those without.

“In this regard, partnerships have been established by local governments, academic institutions and non-State actors in the agriculture value chains with the aim of incorporating biodiversity protection and better landscape management into agricultural land use training,” said Macharia.

In the end, the project created a model for improving the welfare of agricultural communities by training farmers on risk management. This investment in turn encouraged communities to invest in high-value production systems that take into account the importance of biodiverse ecosystems in the improvement of human health and jobs creation.

The model, says AGRA’s program coordinator, Dr. Abednego Kiwia, can be replicated elsewhere around Africa to protect biodiversity in local communities that live next to protected or threatened natural resources.



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