

Effort to confront Africa's soil health crisis helps millions of farmers triple yields

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With the steady drain of essential nutrients from African soils looming as a major threat to food security across the continent, a new report released today finds that over the last five years, 1.7 million African farmers in 13 countries have embraced farming practices that have rejuvenated 1.6 million hectares and helped them double or even triple crop yields.

The analysis from the Alliance for a Green Revolution in Africa (AGRA) focuses on intensive efforts initiated five years ago to move aggressively to support [smallholder farmers](#) in sub-Saharan Africa, where a lack of agriculture extension services and a scarcity of basic soil supplements have contributed to severely depressed yields for crucial staples like maize, banana and cassava. While [farmers](#) in many parts of the world regularly harvest up to five tons of maize per hectare (about 2.5 acres), African farmers typically harvest one ton. Overall, depleted soils cost African farmers US\$4 billion each year in lost productivity.

"We've shown that it's possible to work on a very large scale to help smallholder farmers adopt sustainable and profitable approaches to crop production, with the proof there for all to see in the form of significantly larger yields," said Dr. Bashir Jama, director of AGRA's Soil Health Program.

The new evidence of success in addressing what many agriculture experts view as the most significant soil health crisis in the world comes in the wake of a June summit in Equatorial Guinea during which the

leaders of African Union member countries pledged to significantly step up their support for the continent's long neglected agriculture sector. As part of their commitment to ending hunger in Africa by 2025, the heads of state cited the need to double agricultural productivity, with access to high quality "inputs" for crops at the top of the list.

According to the AGRA analysis, unsustainable farming practices, like a failure to rotate crops or apply mineral or organic fertilizers, along with persistent soil erosion, are depriving croplands across sub-Saharan Africa of 30 to 80 kilos per hectare of essential plant nutrients like phosphorous and nitrogen. The report warns that such losses threaten to "kill Africa's hopes for a food-secure future."

AGRA's Soil Health Program has approached the problem by supporting an extensive network of partnerships in 13 countries in which three million farmers have been trained in an approach to growing crops called "Integrated Soil Fertility Management" or ISFM. Already, some 1.7 million farmers have adopted ISFM practices, which involve doing things like mixing in organic matter such as crop residues and manure into the soil, applying small amounts of mineral fertilizers, and planting legume crops like cowpea, soybean and pigeon pea that can naturally deposit nitrogen into the soil.

The improvements in crop yields—the increase in the amount farmers are harvesting from the same piece of land—over the past five years have been substantial. Some examples follow:

- In Tanzania, farmers adopting a combination of ISFM practices and new, improved crop varieties more than doubled their maize yields, from 1.5 to 3.5 tons per hectare, while pigeon pea yields increased from 0.6 to 1.4 tons per hectare.
- In Malawi, maize yields more than doubled, from 2 to 4.6 tons per hectare and soybean yields rose from 0.7 to 1.3 tons per

hectare.

- In Ghana, maize yields increased from 1.5 to 3.5 tons per hectare and soybean from 0.9 to 1.5 tons per hectare.

A key priority of AGRA's Soil Health Program is to make it easier for farmers to acquire and properly apply mineral fertilizers. While overuse of fertilizers has caused environmental problems in other parts of the world, a [2009 study by scientists at Stanford University](#) warned that underuse of fertilizers by farmers in sub-Saharan was a major impediment to improving soil quality and increasing food production. Faced with high prices—fertilizers in Africa often cost twice as much as they do in other countries—and low supplies, African farmers use on average about 10 kilos of fertilizers per hectare, while the global average is around 100.

According to the AGRA analysis, the organization's efforts to help rural agrodealers stock more fertilizers have enabled smallholder farmers to acquire an additional 180,000 tons of fertilizer. If used as part of a broader soil management program, that's enough fertilizer to help about 1.8 million farmers revive 3.5 million hectares of depleted land and triple the amount of cereals they produce. AGRA also is encouraging innovative approaches to fertilizer use by working, for example, with Burkina Faso's Institute of Environment and Agricultural Research (the Institut de l'Environnement et des Recherches Agricoles or INERA) to develop a new machine that applies fertilizer in "micro-doses," adding just a few pellets for each seed.

In addition, AGRA is supporting an innovative effort called the African Fertilizer Agribusiness Partnership (AFAP), which also includes the New Partnership for Africa's Development (NEPAD), the International Fertilizer Development Center (IFDC), the African Development Bank (AfDB), and the Agricultural Market Development Trust—Africa (AGMARK). The goal is to develop new fertilizer production, storage

and retail operations, with an initial focus on providing an additional 225,000 tons of fertilizer to farmers in three countries—Ghana, Mozambique and Tanzania—and to lower prices farmers pay by 15 percent or more.

"There is much more to soil health than fertilizers, but they are an essential ingredient for unleashing the potential of Africa's smallholder farmers to create a uniquely African Green Revolution that delivers jobs and better incomes to rural communities and creates more sustainable approaches to farming," Jama said.

He said that going forward, AGRA's Soil Health Program wants to become even more ambitious, with efforts to work across an entire country to encourage adoption of ISFM practices. And it will continue to support governments in efforts to improve quality control for farm inputs and to develop a new brain trust of soil scientists, extension workers and farmer experts. The report on [soil health](#) noted that over the last five years, AGRA has helped train 4,800 extension workers and 134,000 lead farmers, while also supporting more than 170 students—half of whom are women—studying soil science and agronomy at African universities.

Provided by Burness Communications

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