

ENRICHING AFRICAN SOILS KEY TO BOOSTING CROP YIELDS

In African countries where farmers have access and can afford to buy fertiliser, there is a profound difference in agricultural yields, a feature in *Nature* notes.

The red soil found across much of the continent is low in organic matter and key nutrients, and intensive farming in Sub-Saharan Africa is estimated to have removed 22 kilograms of nitrogen, 15 kilograms of potassium and 2.5 kilograms of phosphorus from every hectare, every year, for the past 30 years the equivalent of US\$4 billion in fertiliser.

Average grain crop yields are now less than half those in South Asia, and a quarter of average yields in South-East Asia, where chemical fertilisers are widely used.

Experts say the situation in Africa is now at crisis point, and governments, donors and scientists agree there is an urgent need to revitalise soils. How this is to be done is a matter of intense debate.

The issue will be discussed at the UN Conference on Sustainable Development (Rio+20) in Brazil in June, but whatever that meeting decides must still pass muster with farmers.

Many people are promoting approaches without understanding the conditions in Africa and the communities and what works for them.

They mean well, but they need to appreciate the realities of the smallholder farmer, says Bashir Jama, director of the soil-health programme for the Alliance for a Green Revolution in Africa (AGRA), based in Nairobi.

Regional governments and agricultural scientists have argued for large doses of inorganic fertiliser, while the UN Food and Agriculture Organisation is keen to promote greener, cheaper options such as growing plants that fertilise soil naturally, and farming techniques that conserve soil.

Although these techniques tend to be more labour-intensive, and farmers have been slow to adopt them, they do boost soil quality and yields.

And the growing urgency to replenish soil quality has prompted Kenya, Malawi, Niger and Kenya to actively promote the planting of such trees on farms, and international donors are beginning to support tree programs.

Nonetheless, many agricultural experts and farmers say Africa needs chemical fertilisers, even if these are supplemented with greener, cheaper alternatives.

One significant issue is the cost of fertilisers, and of the transport needed to deliver them to farmers. Fertiliser subsidies were available from the World Bank and other donors in the 1970s and 80s, but these institutions began to see this as a drag on private sector development and they withdrew the subsidies, the article notes.

But following success of Malawian domestic subsidise project launched in 2005, which lead to tripling of maize yields, other African countries have introduced subsidies including Rwanda, Zambia and Mali. Rwanda has also encouraged the development of a fertiliser distribution industry, which has attracted support from donors and the World Bank.

Other efforts now underway include mapping the continent's soils to better inform agronomists and agricultural extension services about nutrient levels, and exploiting the region's phosphate deposits to provide cheaper, locally-produced fertiliser.

Source: <http://www.scidev.net/global/biotechnology/feature/enriching-african-soils-key-to-boosting-crop-yields.html>