

Agriculture is fundamental to sustainable development in sub-Saharan Africa, where the sector employs 65 per cent of labour and generates about a third of GDP growth⁴. At the start of the 21st century, only 7 per cent of farm land in African least-developed countries (LDCs) was irrigated – the same as in the 1960s – while in Asian LDCs the ratio has trebled to more than 30 per cent⁵. The 2008 World Development Report notes that governments in sub-Saharan Africa spend far less on agriculture as a share of national budgets than the 11-14 per cent which helped fuel the Asian green revolution⁶. While developing countries as a group now spend more than developed countries on agricultural R&D, sub-Saharan Africa shows a declining trend in real terms (from US\$1.15bn in 1981 to US\$0.87bn in 2000, at 2000 international prices⁷).

A 2007 report from the OECD Development Centre⁸ pinpoints three crucial domestic supply-side bottlenecks constraining agricultural and fisheries growth in Africa: (i) poor access to credit by smallholder farmers who dominate the farm sector (as a result of which they do not invest in irrigation, fertiliser or technical inputs); (ii) underdeveloped markets characterised by fragmentation and low purchasing power; and (iii) insufficient capacity to meet reliability, quality and health standards, notably in international markets. For example, Ugandan fish exports halved between 1996 and 2000 because of their inability to meet these standards. The same OECD study estimates that a sustained 1 per cent increase in agricultural yields would lift 2 million people out of extreme poverty in Africa.

Yield improvements crucially depend on innovation. Successful innovations often occur at the local level as solutions for unique farm-level problems, involving improvement or adaptation of traditional techniques. Local innovations can have positive country-wide impacts if there are effective communication and information-sharing channels to spread knowledge of them widely⁹. Innovations credited to R&D in Africa include the creation of drought resistant crop varieties of rice, maize and legumes. In addition, a new variety of maize has been developed at the University of Cape Town that is resistant to the maize-streak virus, an insect-borne disease¹⁰. These are the first such trials of a genetically modified crop in Africa and, if successful, this maize would be the first genetically modified crop created in a developing country.

Recent literature on African indigenous knowledge, especially in agriculture, emphasises that Africans are informed innovators with success stories in crop breeding, grafting against pests, water harvesting, soil management, conservation and processing¹¹. Examples of innovative local practices include zaï technology, which replaced traditional 'flat planting', in Burkina Faso and Niger. The technology enhances water and nutrient use efficiency, resulting in increased agricultural production. For example, the increase in millet yield in Burkina Faso and Niger was around 4 and 6 times, respectively, compared to the control¹².

In Africa as in other parts of the world, many farmers are exploring new income-generating opportunities by experimenting with new crops as well as environmentally less harmful methods of growing traditional crops. Africa has begun to discover the niche market provided by the developed-country market preference for organic and other eco-labelled food products, but there is still considerable untapped market potential (Note a). Farmers are also actively diversifying to earn income from new sources. Honey Care Africa, a private sector company in Kenya, through a model of sustainable beekeeping, provides communities and individuals an opportunity to earn supplementary income.

In the area of fisheries, the village of Andavadoaka in Madagascar is another example of innovative local efforts. To address the growing threats to the coastal region, the community took control of marine resources and launched the world's first community-run Marine Protected Area (MPA) for octopus in 2004. This resulted in a significant increase in octopus fishing yield and mean size (both factors helped increased earnings of fishers). Within a year, the National Government of Madagascar used the project as a model to create seasonal octopus fishing bans across the country.

Note:

- a. The development of an African eco-labelling scheme is one of the important activities identified in the African 10-year Framework Programme on Sustainable Consumption and Production (SCP).