

# AFRICA: THE FUTURE OF FOOD?

By *Carol B Thompson*

The author is a professor of political economy at Northern Arizona University. For over two decades, she has worked with smallholder farmers in Botswana, Zambia and Zimbabwe in the Community Technology Development Trust

**A**frica's genetic wealth has been attracting increased global attention as an untapped resource for the biotech and food industries – but the commercialisation of seed patents poses a threat to food sovereignty and the biodiversity of food production.

Treasure. Wealth. With biodiversity far surpassing that of Europe or the US, the genetic resources of Africa are as rich as the oil and minerals under its soil. Since the 1920s, scientists have recognised Ethiopia/Eritrea as a centre of biodiversity and it is now a hot spot. The forests of central Africa not only offer the second largest carbon sink on the planet, but also a treasure trove of biodiversity. The US, the “breadbasket of the world”, relies on just 12 crops for 75 percent of its marketed food, while Africans eat from a food base of about 2 000 plants. Over the last two decades, Africa's genetic wealth has attracted increased global attention as an untapped resource for the biotech and food industries.

## **BIOPIRACY: ALL TAKE AND NO RETURN**

The tradition of freely sharing or accessing

seeds is as old as human agriculture and provides the means for experimental cultivation, which is the key to sustaining food biodiversity. This global tradition has been recognised by national and international plant gene banks.

International law concerning “access and benefit sharing” (ABS) was established by the Convention on Biological Diversity (CBD, 1992) and its Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits (2010), and the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA, 2004).

The regulations for sharing benefits from the breeding of new seeds – the complementary tradition to free access – have been neither implemented nor enforced. The treaties call for material rewards to recognise previous breeders when a new commercial seed is marketed. However, the practice of patenting a variety after even one gene has been inserted ignores previous breeders and their indigenous knowledge. International mechanisms, such as material transfer agreements (MTAs) and certificates of compliance, remain inoperative.



These international laws are ignored with impunity, for their governing bodies rely on funds donated by those who have the most to lose if benefit sharing were enforced. The donor countries are also the home base of corporations that do not honour the principle of free access for seeds they have developed. They benefit from free access, receiving seeds on request from the public seed banks, only to privatise any offspring in the name of intellectual property rights – thus erasing the rights of the cultivator's originators. Access to genetic materials therefore remains quite open, and shared parent materials provide the resources for breeding new food varieties.

The privatisation of a new variety without recognition or benefit sharing for those providing the parent materials is an act of “biopiracy” – but patenting seed is only a minor part of the international



Governments would lose the ability to enact their own laws for biosafety protection, or to honour farmers' rights, or to authorise any decision related to protecting plant varieties. A centralised agency serves a centralised global seed industry, not the interests of those sustaining diverse genetic material for the future of food.

biopiracy of Africa's wealth. Other means to access genetic treasure are advanced in policies initiated by the Gates Foundation's "Alliance for a Green Revolution in Africa" (AGRA) in 2006 and now officially incorporated into the US government's "Feed the Future" initiative, the World Economic Forum's "New Vision for Agriculture" and the World Bank's "Global Agriculture and Food Security Programme" (GAFSP). These policies promote

- employing corporate donations and government aid programmes to convert the 16 international public seed banks of the CGIAR (Consultative Group for International Agricultural Research) to serve "business" interests
- employing corporate donations to direct agricultural research priorities in the African Union's Comprehensive Africa Agriculture Development Programme (CAADP)

- the purchase of national and regional seed companies in southern Africa by foreign corporations, giving them full, private control over that genetic wealth
- a uniform seed law for the region of southern Africa, and eventually for the whole continent, that would abolish national seed sovereignty.

A brief analysis of each of these gives a glimpse of the systematic policies set to capture Africa's genetic wealth.

### POLICY PINCERS

Since 2007, the Gates Foundation has increased its financing of the international public seed banks that hold more than 679 000 seeds across the globe, a potential treasure for sustaining food production during climate change. For example, centres that specialise in research on sorghum and millet (ICRISAT, the

International Crop Research Institute for the Semi-Arid Tropics) or maize and wheat (the International Maize and Wheat Improvement Centre known by its Spanish acronym CIMMYT) receive 45 to 55 percent of their annual funding from the Gates Foundation and its subsidiaries and allies.

In Zimbabwe, smallholder farmers originally supplied the ICRISAT/Matopos research station with the genetic wealth of their sorghum and millet strains. The farmers have successfully grown out foundation seed, according to strict quality controls, for certification to produce commercial seed for small seed companies. But ICRISAT/Matopos no longer freely shares its foundation seed with smallholder farmers. A new policy – enacted from 2010, as Gates Foundation funding increased – requires these breeders to buy back foundation seed that originates from their own cultivars. ➤➤

The reciprocity of freely sharing seed, a practice that encourages experimentation and innovation, has been turned into a market transaction even within the public seed banks. Instead of increasing benefit sharing, the new policy eradicates it.



**Although the CAADP refers to smallholder farmers, its proposals and workshops ignore indigenous ... farming practices for biodiverse food production.**

A second policy uses research financing to increase corporate control over seed that is bred from African cultivars. The AU's CAADP includes programmes to increase research collaboration across the continent, and it accepts AGRA's promotion of the global market as the central mechanism for providing African food security. Although the CAADP refers to smallholder farmers, its proposals and workshops ignore indigenous knowledge and farming practices for biodiverse food production. The goal is to link small-scale commercial farmers (50–100 ha), not smallholder farmers (1–5 ha), to the global food value chain. Smallholder farmers are neither participants nor stakeholders in CAADP meetings. Top-down research agendas thus focus on commercial corporate priorities for “improved varieties” and ignore controversies about genetically modified organisms. In each of the global food and agriculture sectors, almost 60 percent of the market is controlled by only four corporations (see Table 1). Linking African farmers to these “chains” reduces their autonomy in both supply of agricultural inputs and demand for the produce.

**Table 1. Global Market Concentration**

Global Sector	Dominant Corporations	Combined Market Share (%)
Seed	Monsanto (USA) DuPont Pioneer (USA) Syngenta (Switzerland) Groupe Limagrain (France)	58
Agrochemical (fertiliser, pesticides)	Syngenta (Switzerland) Bayer (Germany) BASF (Germany) Monsanto (USA)	57
Food processing	Nestlé (Switzerland) PepsiCo (USA) Kraft Foods (USA) Anheuser-Busch (Belgium)	58
Food retailers	Wal-Mart (USA) Carrefour (France) Schwarz Group (Germany) Tesco (UK)	56

Source: ETC Group (2011): 22, 25, 37, 39

Smallholder farmer networks across southern Africa regard this global commercialisation as a threat to food sovereignty and to the biodiversity of food production: it feeds Wall Street, not humans. Smallholder farming that produces local foods for local markets encourages biodiversity, while the economies of scale in the global market require a few varieties of food crops to feed millions. The UN Food and Agriculture Organisation (FAO) repeatedly reminds us that smallholder farmers currently provide 85 percent of the world's food and that there is already enough food to feed the projected population of 2050. Smallholder African farmers do need support, but they do not need to be linked to the global food chain.

Third, and the most direct way for the global commercial seed industry to enlist African seed systems without recognition or benefit sharing, is to purchase regional seed companies. With

a breathtaking wave of purchases across southern Africa, cultivars developed over centuries are no longer in African hands.

- In 1999 and 2000, Monsanto (US) purchased Carnia and Sensako, two of South Africa's seed companies.
- In 2011, DuPont Pioneer (US) bought out South Africa's largest seed company, Pannar Seed, giving it access to both a large and diverse germplasm collection and an established market presence in 23 other African countries. Civil society brought two lawsuits against the takeover of locally bred genetic materials, but the South African courts ruled in favour of DuPont.
- In 2013, the Swiss agri-business Syngenta bought out MRI Seed, a Zambian company with one of Africa's most comprehensive repositories of diverse maize germplasm.
- In 2014, Groupe Limagrain (France), the largest seed and plant breeding company in the European Union,

purchased a 28 percent share in Seed Co Limited, which operates in 15 African countries and has significant market shares in Malawi, Tanzania, Zambia and Zimbabwe.

Finally, AGRA and its partners are pushing hard for the Southern African Development Community (SADC) to adopt a uniform seed law for its 16 members. Laws in individual SADC countries have so far curtailed the spread of genetically modified (GM) seeds from the commercial South African market into the rest of the region. However, if GM seed enters South Africa legally, a uniform seed law that minimises customs inspections would facilitate genetic pollution across southern Africa, diluting national biosafety laws and their enforcement.

Using the World Trade Organisation (WTO)'s 1995 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the commercial seed industry is promoting the Convention for the Protection of New Varieties of Plants, known as UPOV<sub>91</sub>, as the uniform law for plant protection. The UPOV<sub>91</sub> approach privileges the corporate seed breeder as creating *distinct, uniform and stable* varieties in a laboratory. With these characteristics, the new seed variety is legally an “invention” rather than a discovery in nature. The breeder's property rights extend beyond the seed to the full plant and to products essentially derived from it, such as flour from wheat, as well as restricting farmers from using the new variety for their own research. In contrast, farmers' field-bred seeds cannot match these characteristics. UPOV<sub>91</sub> therefore allows the privatisation of the industrial seeds while leaving farmers' newly bred cultivars free for the taking. It transforms a farmer's right to exchange, breed, plant and sell any seed into a privilege – in violation of the ITPGRFA treaty on genetic

resources and its Nagoya Protocol on fair benefit sharing.

African governments unanimously rejected the patenting of life forms at the 1999 WTO meeting in Seattle. While they are currently under no legal obligation to adopt UPOV<sub>91</sub>, and many are exploring the *sui generis* (“of the same kind”) alternatives allowed by the WTO, African governments face an urgent and serious challenge under the 2014 EU economic partnership agreements (EPAs). Individual countries may be expected to sign UPOV<sub>91</sub> in order to finalise any trade accords. Unifying the seed laws (the EU calls it “harmonisation”) of all African countries in line with UPOV<sub>91</sub> would centralise authority into one administrative agency, eradicating national sovereignty over both plant genetic resources and food. The protocol's “one grant system” would grant and administer “breeders' rights” (i.e. private ownership) on behalf of all member states. Governments would lose the ability to enact their own laws for biosafety protection, or to honour farmers' rights, or to authorise any decision related to protecting plant varieties. A centralised agency serves a centralised global seed industry, not the interests of those sustaining diverse genetic material for the future of food.

Many African smallholder food producers are resisting these incursions into their fields, their seed banks, and their production.<sup>1</sup> African governments unanimously rejected the patenting of life forms at the 1999 WTO meeting in Seattle. Organising locally and regionally, Africans emphasise the existing alternative models for food production that provide biodiverse foods for local markets using sustainable production methods. Their production outperforms large-scale commercial farming in terms of yield per water consumed, per fossil fuel/chemical input, and per capital expenditure. The large-scale commercial model

only surpasses African smallholders in terms of yield per labour input: it requires less labour per bushel or per tonne produced. This is a questionable advantage in a region of the world where unemployment is high and where 70–80 percent of the population in each country (South Africa is the exception) rely on agriculture for their livelihoods.

The future of food on the continent is to encourage and promote smallholders in their biodiverse food production, to protect Africa's genetic wealth from systematic biopiracy (access without benefit sharing), and to sustain farmers' rights to plant, share, and experiment with all seeds. In contrast to gold and diamonds, the genetic wealth of Africa can flourish and grow over the next century. [NA](#)

## NOTE

1. As well as being productive, African smallholder farmers are highly organised. Regular workshops and information-sharing conferences are held several times a year by advocacy organisations too numerous to list. For example, all of these networks have worked in farmers' communities for over 15 years: Tanzania Alliance for Biodiversity (TABIO, a national network of 15 civil society and private sector organisations); Community Technology Development Trust (CTDT, with three country offices in southern Africa); Participatory Ecological Land Use Management (PELUM), an East African network with 230 member organisations; the Regional Agricultural and Environmental Initiatives Network (RAEIN-Africa, southern Africa); *Réseau des Organisations Paysannes et de Producteurs d'Afrique de l'Ouest* (ROPPA, West Africa); the Eastern and Southern Africa Farmers' Forum (ESAFF, with members in 12 countries); the African Biodiversity Network (ABN, a 36-member network of organisations in 12 countries).

## REFERENCE

ETC Group. 2011. *Who Will Control the Green Economy?* Communiqué 107, November. [www.etcgroup.org/content/who-will-control-green-economy-0](http://www.etcgroup.org/content/who-will-control-green-economy-0) [accessed 8 March 2015]