



Global Trade and Biodiversity in Conflict

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Privatising the Means for Survival:

The commercialisation of Africa's biodiversity

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Since time immemorial, Africa's people have depended upon free and open access to a rich diversity of biological resources for food, fuel, medicine, shelter and economic security, exchanging and trading such resources among themselves. Today, rapid globalisation means Africa faces intense pressure to open up its natural resources and markets to transnational corporations and conform to global trade rules, even while the basic needs of its populations go unmet. The increasing privatisation of Africa's biodiversity is threatening not just the biological resource base, but the livelihoods and rights of the local communities that depend upon it, and the knowledge and technologies they have developed for biodiversity conservation and use.

Trade in biological resources is big business today, but the terms of global trade are increasing corporate control of Africa's agriculture and healthcare systems and undermining the collective rights of communities to biodiversity. In agriculture, the commercialisation of the seed market, patents on seed, and the introduction of genetic engineering have serious implications for Africa's farmers and food security. In healthcare, intellectual property rights force up the price of essential drugs. They also reward bioprospecting of African biological

resources by Northern agribusiness, pharmaceutical companies, and research institutes, whilst national governments, and local communities who are generators of biodiversity-related knowledge and technologies, lose out.

However, Africa is not content to be merely a supplier of raw materials for the global economy. The continent is asserting itself at all levels, from its rejection of the imposition of developed countries' agendas and Trade Related Intellectual Property Rights (TRIPS) at the World Trade Organisation, to the strengthening of civil society networks such as the African Trade Network which support these positions. African initiatives in indigenous policy development have asserted the rights of nations to maintain control over their own biological resources, to guarantee the rights of local communities to use, save, and exchange seeds, and to provide essential medicine at affordable prices. In developing strategies and responses to harness and conserve biodiversity, Africa is resisting the appropriation by transnational corporations of the means for her population's survival.





1. Africa's Natural Wealth

1.1 Biodiversity: *a matter of survival*

Africa is a continent rich with an enormous diversity of biological resources, and remarkable in the innovations her people have developed to use and conserve them. The region is home to a quarter of the world's biodiversity, and many of its plant species occur nowhere else on earth. A vast range of useful plants originating from Africa have made critical contributions to world agriculture, including coffee, sorghum, millets, and palm oil, as well as numerous medicinal plants.

More than for any other region in the world, biological resources form the basis of national livelihoods and economies in Africa. The vast majority of the continent's 700 million inhabitants rely directly on biodiversity for food, medicine, low-cost building materials, fuelwood, craft materials and income. For them, biodiversity is a matter of survival: its use, abundance and variety an indispensable buffer against poverty, drought, environmental change and war.

Unlike many other parts of the world, where knowledge about biodiversity and the technology of using many species is held by geographically distinct indigenous groupings, in Africa such knowledge is found in virtually all rural households, and in many urban households too. This finds expression in the enormously diverse cultures of the more than 2000 ethnic groups that inhabit the continent, and in the central role played by plants and animals in African indigenous systems of medicine and agriculture.

In addition to subsistence use, the bulk of employment, economic output, and export earnings in Africa are generated from biological resources. Agriculture accounts for between 30% and 60% of GDP in Sub-Saharan Africa and employs more than 60% of the labour force.¹ Forestry and

fisheries likewise play key roles in many African national economies, providing up to 60% of foreign exchange in Equatorial Guinea and Mauritania. In short, a productive, diverse and readily available biological resource-base is the life support system for Africa.

1.2 Africa's natural wealth *under threat*

Accelerating biodiversity loss is threatening millions of livelihoods dependent on the biological resource base. This loss is occurring through the clearing of forests for commercial agriculture, monoculture cropping and forestry, overfishing, invasive alien species, mining, and the overharvesting of natural resources. Accompanying these activities is the erosion and loss of traditional knowledge about biodiversity. But most pervasively of all, biodiversity and people's livelihoods are being increasingly impacted by transnational corporations' intensifying control over food, agriculture and healthcare.



The most powerful players in the global economy, the corporations, are encroaching upon African biodiversity on an unprecedented scale. They are aided by a world trade regime that ensures them open access to markets and the legalised piracy of indigenous knowledge and biodiversity through intellectual property rights (IPR). Their size and influence is growing as the agrochemical, seed, and pharmaceutical corporate giants converge through takeovers, mergers and alliances. Heavy investments in biotechnology have accelerated these trends, together with the granting of patents on living organisms, and associated pressures to commercialise new products. Today, a handful of 'Gene Giants' - Aventis, DuPont, Monsanto, AstraZeneca, and Novartis - dominate the market. AstraZeneca and Novartis have announced a merger to form Syngenta, becoming the largest agrochemical business in the world with a

market share of 23%. Between them, the 'Gene Giants' account for nearly two-thirds of the \$31 billion global pesticide market, almost one-quarter of the \$30 billion commercial seed market, virtually the entire genetically engineered (GE) seed market,² and increasingly they are merging with the \$300 billion pharmaceutical industry.

Sales of this magnitude help to ensure such companies' dominance over smaller enterprises and national institutions. In Africa, just ten companies account for 88% of the agrochemical market.³ Four of the biggest pesticide companies - Novartis, AstraZeneca, Monsanto, and DuPont - also dominate the African market in genetically engineered seeds,⁴ and increasingly, the local supply and marketing of seeds. Transnational corporations also hold the majority of local markets for pharmaceuticals in Sub-Saharan Africa, which, together with the Middle East, was estimated to be worth over \$8 billion in 1997.⁵

Overall, in this scenario of increasing corporate takeover of the areas of food and health, the biodiversity that underpins them becomes one more commodity to be exploited for the benefit of the few, rather than sustained as the means for survival for the many.

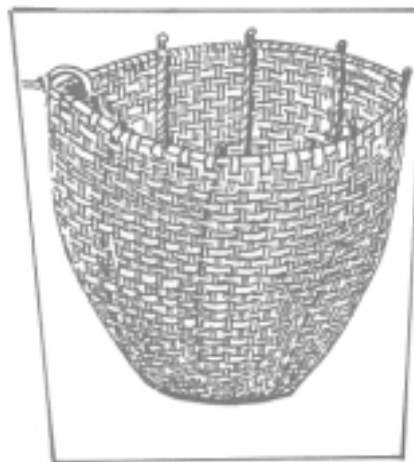
2. Africa in the Global Economy

2.1 African vulnerability

Africa is plagued by a host of problems. It faces crippling levels of foreign debt of some \$230 billion, repayments of which amount to double that spent on education and healthcare combined. Most African countries face stagnant or declining economic performance. Statistics for Sub-Saharan Africa are particularly bleak. Currently 75.6% of the population lives on less than \$2 per day, and the number of people living in poverty is rising.⁶ In addition, the continent faces the highest levels of HIV/AIDS in the world, at almost three times the global average.

Donors, investors, and lenders consider integration into the global economy a prerequisite for Africa's development. The World Bank, the International Monetary Fund, the African Development Bank, and aid donor countries such as the US impose conditionalities on recipient countries based on reorienting their economies to a free market model. This includes trade liberalisation which involves opening up their markets to global corporations, privatisation of national institutions and the slashing of government spending. Countries have little choice but to adopt structural adjustment programmes which have forced them among other measures, to cut basic social services, and turn from domestic food production to export-oriented cash cropping. In general, and in many sectors, the draconian structural adjustment programmes imposed during the 80s and 90s saw much economic progress dismantled.

Currently, Africa's current share in world trade is a mere 1-2%. As an untapped market and emerging trade partner, the continent is a strategic target for some producers and investors. A survey of sixty-five transnational cor-



porations carried out by the UN Conference on Trade and Development (UNCTAD) and the International Chamber of Commerce between November 1999 and January 2000 showed interest in investing in agriculture, pharmaceutical and chemical products, and foods and beverages were also on the list. The Corporate Council on Africa, a US-Africa corporate lobby group, greeted the prospect of increased privatisation in Nigeria with the comment that the country was: "a huge market that remains largely untapped by American companies."⁷

2.2 The World Trade Order

But deeper integration into the global economy is likely to further undermine African public interest goals of food security, healthcare and environmental conservation. The terms of global trade serve the interests of the industrialised nations and their corporations, whilst putting developing countries under increasing pressure to open up their economies to foreign competition. The previous round of trade negotiations of the World Trade Organisation (WTO), is expected to increase the value of world trade by US\$200 billion by 2005. However, 70% of this will go to the industrialised world, while Sub-Saharan Africa is actually expected to be US\$1.2 billion a year worse off.⁸ In the words of Moses Tekere, economics lecturer at the University of Zimbabwe: "The fundamental ideology of the WTO is wrong. What we want is development, and not just liberalisation."⁹ The marginalisation of Southern countries at the WTO is highlighted by the fact that nineteen African countries are too poor to have even one permanent delegate at the institution's Geneva headquarters. The overall imbalances have serious consequences for the countries of the South, many of which are biodiversity rich, with the vast majority of their populations directly dependent upon biological resources for their livelihoods.





Through the controversial Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) of the WTO, a global regime has been created for intellectual property rights over biodiversity, and opened the door to the patenting of life forms. Driven by the multi-billion dollar biotechnology and pharmaceutical industries, it raises profound questions about the ethics of commercialising life forms, the monopoly control of knowledge, and the rights of the generators and users of community knowledge and technologies. Added to this is the injustice of permitting corporate royalties and ownership through legalised piracy of the knowledge and technologies of rural communities. As members of the WTO, most countries of the world are now obliged to allow patents and other forms of intellectual property rights to enter the realm of agriculture, food production and healthcare. The industrialized world holds 97% of all patents, most of which are in the hands of large corporations. Furthermore, residents of industrial countries hold over 80% of patents granted in developing countries.¹⁰ The TRIPS Agreement not only facilitates corporate ownership and monopoly control over the South's biological resources, but can force developing countries to pay royalties to these patent-holders. Biodiversity, once freely accessible to all, is being reduced to a privately held commodity, to be used for individual or corporate profit.

Intellectual property rights form just a part of more wide-sweeping trade initiatives that threaten biodiversity and natural resource-based livelihoods in Africa. The WTO Agreement on Agriculture, for example, disregards the stark inequalities between developed and developing countries' agriculture. It uses the rhetoric of competing on a 'level playing field' in requiring all member countries to reduce government subsidies to local farmers and remove non-tariff controls on agricultural products. In effect, the Agreement could destroy the livelihoods of millions of small farmers in Africa by putting them into direct competition with global corporations. Despite the 'free trade' rhetoric, in reality, poor countries are forced to implement a liberalisation they can ill afford, whilst rich countries continue to jeal-

ously guard their agriculture and markets. For example, far from removing its own market protections, the US actually has had an escalating 67% tariff on peanuts, which means that African peanut producing countries like Senegal have no access to the US market. Meanwhile, withdrawals of subsidies from agricultural inputs have undermined local African food production, with cheap grains from the North being dumped on African countries. Thus, despite the fact that a country like Burkina Faso is capable of self-sufficiency in cereal production, up to 15% of its GDP is spent on importing cereals.

2.3 *EU and US trade agreements*

Treaties with Africa's major trading partners, the EU and the USA, are, in the name of development, also establishing free market regimes. The renegotiation of the Lomé Convention, a preferential trade agreement between the EU and African, Caribbean, and Pacific countries, and the US African Growth and Opportunity Act, will shape EU and US trade with Africa in the coming years, and influence the continent's development priorities.

The EU clearly views the globalisation of Africa as the primary aim of its development cooperation. For the past 24 years, the Lomé Convention has defined trade and aid relations between the majority of African countries and the EU. Under Lomé past terms for aid have been relatively generous and offered signatories preferential access, without reciprocity, to European markets for the majority of their exports. Such terms are unacceptable under the WTO. The renegotiation of the convention in 2000 shows the clear shift towards a more market-orientated development pattern: liberalisation, and enforcement of intellectual property rights regimes, and "smooth integration into the world economy" are

now the priorities,¹¹ though in fact, the new agreement is still likely to be challenged at the WTO. In the re-negotiated Lomé agreement, the EU is seeking to establish inter-regional free trade areas with economically strong partners - a policy many see as a risk to African solidarity.¹² The new Lomé terms will affect many African nations: the EU is a destination for some 40% of Africa's exports, many of which qualify for preferential treatment under the Lomé agreement.¹³



The African Growth and Opportunity Act (AGOA), now included in the 'Trade and Development Act of 2000' recently passed by the US Congress, is a framework for competition in Africa favourable to US business. It is designed to increase US exports to and US private investment in Africa, promote Export-Import Bank lending, and ultimately create free trade areas with the strongest countries and regions.¹⁴ Simply, the terms of the act seek to ensure that African markets are open to US business. While AGOA grants extensive rights and benefits to transnational corporations operating in Africa, it does nothing to ensure that African workers and businesses benefit from expanded trade, and includes no provisions protecting the environment. Intended benefits for Africa are enhanced market access for its trading goods, and US-guaranteed funds and support to boost private sector development. However, to qualify for the promised benefits, countries must agree to intellectual property rights, provide extensive guarantees for foreign investors, and be engaged in a process of opening up their economies, along lines approved by the World Bank and International Monetary Fund.

2.4 *Biotrade*

Trade in biodiversity forms an important part of the vision of a globalised Africa. While Africa has provided a tremendous amount of her natural resources to the rest of the world over the last few centuries, both the range of resources and the ways in which they are being used have escalated.

The past decade has witnessed a surge of interest in the commercial use of wild species and genetic resources on an unprecedented scale. Bioprospecting - the exploration of biodiversity for commercially valuable genetic and biochemical resources - is a boom industry. In particular, new genetic engineering techniques that are able to move genes and genetic material from one organism to another have led to new and sometimes previously unimaginable uses for genetic resources. Genetic bioprospectors search for interesting genetic characteristics to engineer into species, and have greatly intensified the bioprospecting 'gold-rush'. The rapidly growing botanical medicine industry based on plant materials is also driving exploitation of biodiversity. Natural product-derived pharmaceuticals alone contributed an estimated \$120 billion - or 40% - of global pharmaceutical sales in 1997, with global trade in raw botanical materials approximating \$8 billion in the same year.¹⁵

How does Africa stand to benefit from such developments? Africa is home to 25% of the world's biodiversity, and at a crude estimate the combined total value of all products derived from the world's genetic resources lies between \$500 and \$800 billion annually.¹⁶ It is clear that Africa is a rich, profitable seam of raw material and knowledge for the development of new medicines, foods, cosmetics and other products from biodiversity. However, historically, benefits derived from the commercialisation of these resources

amounted to nothing for the region, while colonial powers gained substantial economic advantage through their use. Many argue the situation is comparable today.

Redressing these inequalities is a key objective of the Convention on Biological Diversity (CBD), to which 47 African countries are party. Under the Convention, countries providing genetic resources should receive a set of benefits from those commercialising the resources, including a fair share of the profits generated, as well as non-monetary benefits such as technology and the opportunity to participate in research. In exchange, provider countries should facilitate access to their genetic resources and associated knowledge. The CBD aims to ensure that this access is granted on "mutually acceptable terms" and subject to the prior informed consent of the provider country. In Article 8(j), the CBD recognises the rights of generators of community knowledge and technologies, and the importance of sharing the benefits derived from the use of this knowledge fairly. Significantly, the Convention asserts that custodians of biological resources have control over these resources.



However comparisons between the provisions of the Convention on Biological Diversity and those of the WTO agreements present some disturbing contradictions which are now becoming increasingly apparent in Africa and elsewhere, between the priorities of sustainable and equitable biodiversity use, and the tenets of the global marketplace. Africa, India, and others have raised concerns over these contradictions between the CBD and WTO, in particular in the case of TRIPS. Essentially the priorities of the two bodies are in conflict: simply, nations cannot pursue conservation, sustainable development, and biodiversity sharing, whilst adhering to a corporate-led trade agenda at all costs.





3. Biodiversity, Agriculture and Healthcare

3.1 Agriculture

Nowhere are the polarities between the approaches of the WTO and the Biodiversity Convention more apparent than in agriculture, reflected in the two profoundly different farming systems, traditional and industrial, that exist in Africa. Traditional farming is practised by the majority of African farmers, and over 90% of food in Sub-Saharan Africa is produced by customary farming practices based on multiple cropping, farm-saved seeds, low chemical inputs, rainfall, and on-farm crop selection.¹⁷ Ownership of resources, seeds, and knowledge, and technologies is usually held collectively, "shared with pride and given away as a great honour".¹⁸ In contrast, industrial agriculture is based on bought seed, high chemical inputs, irrigation, mechanisation, and mono-cropping, producing mainly cash crops for export such as coffee, cotton, cocoa, tobacco, tea and sugar. With the exception of maize production, this largely takes place at the expense of producing food crops for local consumption.¹⁹ Most seeds are imported high-yielding hybrids and cultivars, which need to be bought anew each season from the corporations.²⁰

For agribusiness, traditional farming is bad news. It limits the market for agrochemicals and, with farm-saved seeds representing about 90% of total planted seeds on the continent,²¹ constitutes a considerable constraint to the expansion of the commercial seed market. Thus, there are aggressive efforts to 'modernise' Africa's agriculture, that is, introduce high-yielding hybrids, transgenic (i.e. genetically engineered) varieties, fertilisers, herbicides and pesticides. This is most apparent in the supply and distribution of seeds. Through structural adjustment programmes, virtually every government in Africa is under pressure to privatise state-owned seed supply systems. For example, in Malawi, a World Bank and IMF programme to reform the agricultural sector involves the privatisation of the National Seed Company of Malawi. Structural adjustment has wrought similar changes in the seed sectors in Uganda, Senegal and other West African countries.

The establishment of the African Seed Trade Association (AFSTA) is part of this trend. Its stated mission is to "represent the interests of African seed industries and to promote the development of seed industries for the betterment of crop production in Africa".²² In theory, an indigenous seed industry could be developed to meet the needs of African farmers. However, recent indications show that financial pressures are driving indigenous seed companies into relationships with large monopolies, or resulting in their complete

takeover. Sensako, a local seed producer in South Africa, has sold a majority stake to Monsanto "in order to compete with other transnational seed companies",²³ and another South African seed company, Carnia, has witnessed a similar fate. Together, it is estimated that the mergers will result in job losses for a quarter of the staff.²⁴

What do these developments mean for the millions of small farmers dependent on farm-saved seed for their livelihoods? Debates over African agricultural reform discuss the need to provide farmers with access to quality seed and new research developments, and to improve export earnings. Yet few African farmers have the capital to purchase high-yielding seeds, much less transgenic varieties, which are often genetically engineered to lock the farmer into buying the associated packages of herbicides and pesticides made by the same company. Moreover, tighter intellectual property control will prevent farmers from saving and exchanging 'proprietary' seeds.

TRIPS obligations

TRIPS obligations for member countries of the WTO to introduce intellectual property rights over plant varieties would intensify the threat to farm saved seed. Although some African countries are adopting innovative approaches towards meeting this requirement, fifteen francophone states forming the African Organisation of Intellectual Property (OAPI) signed an agreement last year updating their common IPR law. Aside from patents, copyrights and trademarks, this agreement - the revised Bangui Agreement - contains a plant variety protection scheme that is almost carbon-copied from the highly restrictive Union for the Protection of New Varieties of Plants (UPOV) Convention of 1991.^{25,26} It explicitly prohibits farmers from saving seeds that are registered under the PVP system in the case of forestry species, fruits and ornamentalless governments permit specific exemptions. The most likely beneficiaries of the scheme - European and US seed companies - will get exclusive monopoly rights over new varieties and African farmers will have to pay an intellectual property 'tax' to use them. Only one country, Cameroon, has ratified the treaty so far and it did so with no parliamentary or civil discussion. In fact, numerous farmers' organisations, scientists and NGOs in different parts of francophone Africa are concerned about the impact of the new law on biodiversity, agricultural sustainability and community rights. Some view it as a typical case of legislation being imposed from outside, with no participation of people related to development, agriculture, or the environment. With the rights of some 20 million farmers affected it would seem that for its proponents, no sacrifice is too great in the pursuit of a globalised Africa.

3.2 Biotechnology: hungry for profit?

Africa's role in the biotechnology industry has been overwhelmingly as a supplier of raw materials used by research institutions and transnational corporations in the West. However, the increasing rejection of genetically engineered products by Northern consumers has accelerated the vigorous promotion of their use and development in Africa, and the US is desperate to find new markets for its \$60 billion agricultural industry.

Biotechnology is being aggressively pushed in Africa under the rhetoric of "counter[ing] famine, environmental degradation, and poverty".²⁷ The recent Africa Growth and Opportunity Act (AGOA) - which ensures the creation of a favourable investment climate for US companies to invest in Africa, including the withdrawal of what they term 'trade barriers' that protect local agriculture - will surely form part of this push for biotechnology. Under AGOA, Clinton's 'Partnership for Growth and Opportunity for Africa' is a scientific exchange programme to enhance crop biotechnology research in Sub-Saharan Africa and promote general "awareness for the benefits of biotechnology for developing nations".²⁸

In Algiers, an African Agency for Biotechnology has recently been established to help develop biotechnology across the continent.²⁹ In Kenya, the International Service for the Acquisition of Agri-Biotech (ISAAB) aims to "facilitate the transfer of biotechnology to developing countries for the primary benefit of the rural poor and small scale farmers".³⁰ In South Africa, Monsanto, Delta and Pine Lands, AgrEvo, Novartis, Pioneer Hi-Bred, as well as several research institutions and producers, have formed a major consortium called Africa-Bio to "provide one strong voice for lobbying government on biotechnology and ensuring that unjustified trade barriers are not established which restrict its members".³¹

The potential impact on Africa's food security and agriculture is immense. Although the need to improve African food security and agricultural productivity is a concern shared by all, the problem is not insufficient food, but rather its distribution and access, which includes the

struggles of poor farmers to obtain credit, lack of storage facilities and inadequate infrastructure.³² Twenty-four representatives from twenty African countries and thirty community, environmental and farmer organisations attending a United Nations meeting in August 1998 wrote a strongly worded rejection of gene biotechnology, in a joint statement entitled 'Let the Harvest Continue', saying that it served only Northern corporate interests and was inappropriate to African needs.

In reality, the large majority of field trials and commercial releases of genetically engineered crops have been for herbicide and pest resistant crops rather than for developments that could make a real impact on African food production, such as improvements in nitrogen fixation, or drought and viral resistance. Industry places emphasis on high volume crops that offer most opportunities for export sales, rather than staple food crops commonly used by Africans, such as sorghum or millets. In South Africa, where 165 field trials and 5 commercial releases of GE crops have been approved over the past few years, over 90% of applications for transgenic crop testing were for insect and herbicide resistant strains. The former are largely focused on crops engineered with the bacteria *Bacillus thuringiensis* or Bt, a toxin which kills insects which feed on it, but which pests develop resistance to very quickly. The latter are engineered to be resistant to the corporation's own brand of herbicide, so that the farmer is forced to buy the seed and herbicide as a package. Seventy per cent of these applications were received from transnational 'gene giants', including Monsanto, Pioneer Hi-Bred, AgrEvo, Delta and Pine Land, Novartis and DuPont.

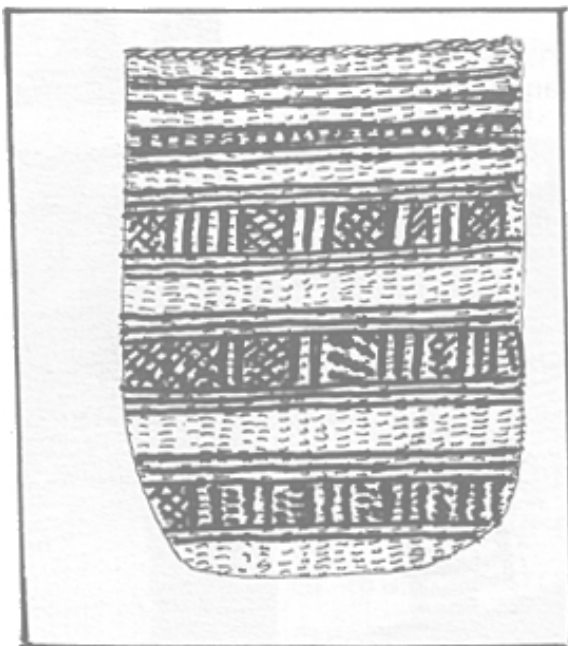
Moreover, most African countries do not have basic facilities for the simplest of tissue culture methods, let alone for GE techniques. Those countries which are developing or applying modern biotechnology - South Africa, Egypt, Kenya, Nigeria and Zimbabwe - do so without capacities for risk assessment and management.³³ Although





transgenic crops have been released in Morocco, Zimbabwe, Egypt and South Africa, no environmental impact assessments have been undertaken, nor appraisal made of the need and desirability for the crop. This is despite recent findings that illuminate the potential health and ecological risks of biotechnology, and concerns about the impact of genetic engineering on Africa's biodiversity.³⁴

Far from being the panacea for Africa, genetic engineering brings with it a host of socio-economic and environmental problems for the continent. Biotechnology could destroy the livelihoods of Africa's small farmers.



The International Labour Organisation estimates the impact of genetic engineering could result in employment losses of up to 50% in developing countries.³⁵ Genetic engineering techniques could make it possible for corporations to produce crops that currently grow exclusively in the tropics, in the laboratory or in temperate zones. For example some 70,000 Madagascan vanilla-growing farmers could be threatened through the laboratory production of vanilla aroma.³⁶ In addition, higher yields from genetically engineered cocoa varieties for large commercial growers could reduce prices and jeopardise smallholder markets of the crop in West Africa. The industrial manufacture of the sweetener thaumatin - derived from a West African plant - threatens the livelihoods of thousands of people collecting the resource from the wild in Côte d'Ivoire and other West African countries.

Commercialisation of the so-called Terminator Technology, designed to prevent seed reproduction and thus assure repeated sales, as well as other coercive technologies that enforce dependency on seed companies, would have untold effects on the millions of small-scale farmers throughout Africa that depend on replanting farm-saved seeds. These farmers simply do not have the money to buy seed anew each year. Patent applications for Terminator Technology in up to 90 developing countries further fuel these concerns. Despite public commitments from Monsanto and AstraZeneca not to commercialise Terminator Technology, such promises have been short lived. In 1999 AstraZeneca conducted its first field trial on seed sterilisation technology in the United Kingdom, and Terminator is now on the 'fast track' to commercialisation.³⁷

The emphasis for agribusiness will always be on products that generate sales large enough to recoup and generate profits, while it is people and the environment that will bear the risks and costs genetic engineering in agriculture poses. It is contradictory to have the priorities of profit controlling priorities of fundamental needs like food and healthcare. Food security, human development and environmental sustainability simply do not factor in this value system.

3.3 Healthcare

A similar story is unfolding for Africa's healthcare. Privatisation, and the distortion of intellectual property and trade measures are being pursued at the expense of meeting the basic needs of the majority of the population. As with agriculture, two systems of medicine co-exist in Africa, one based on traditional medicine, the other on western approaches to healthcare and the use of pharmaceutical products. Western medicine has dominated in most national health systems, but many countries are beginning to integrate traditional medicine into their official healthcare programmes.³⁸

The traditional medicine system uses biodiversity as an integral part of a spiritual healing process, environmental ethic and ancestral belief system that is uniquely African. Knowledge and observations are handed down from one generation to another, resulting in a health system that is generally shared across ethnic and cultural lines, but that is also continuously changing and strongly influenced by social, economic and political factors.³⁹

Traditional medicine is cheaper and more readily available than Western medicine: in rural Sub-Saharan Africa, there is a traditional doctor for every 100 to 1,000 people. The ratio of modern Western-style doctors is typically 1:10,000-100,000.⁴⁰ For the estimated 70-80% of African people, both rural and urban, who rely on traditional medicine and the variety of plants and animals it is based on, the conservation and sustainable use of biodiversity is vital.

Table 1. Key Patents on African Biodiversity

Species	Patent number and owner	Use and benefit-sharing
Forskolin (<i>Coleus forskohlii</i>)	US 4,724,238; EP 0265,810; IN 162,171; IN 147,030; IN 143,875 held by Hoechst (DE)	Traditionally used in medicine throughout Africa, India and Brazil. Patent applies to the use of Forskolin's anti-inflammatory and analgesic properties.
Combretastatin A4, isolated from the Cape Bushwillow (<i>Combretum caffrum</i>)	US 4,996,237; WO 9405682 held by University of Arizona (US) and four Italian inventors.	Several <i>Combretum</i> species are used in traditional African and Indian medicine. Patent refers to the use of the compound in the treatment of lymphocytic leukaemia and colon cancer, and to methods to extract and isolate combretastatin. OXiGENE has an option to acquire an exclusive worldwide royalty-bearing license for these compounds.
Myrrh (<i>Commiphora molmol</i>)	JP 10298097 held by a Japanese individual - Aamedo Mohamedo Ari Masoudo	Traditional use dating back to ancient Egyptians. Patent applies to the treatment of schistosomiasis.
Yellow yam (<i>Dioscorea dumetorum</i>)	US 5,019,580 held by Shaman Pharmaceuticals and M. Iwu	Used in West African traditional medicine to treat diabetes. Patent applies to the use of dioscoretine to treat diabetes.
Monellin from Serendipity berries (<i>Dioscoreophyllum cumminisii</i>) ⁴²	US 3,998,798; JP 5,070,494 held by University of Pennsylvania (US) and Kirin Brewery Ltd (Japan)	Used for centuries by West Africans to sweeten food and drink.
<i>Harpagophytum procumbens</i>	US 5,888,514 held by Weisman Bernard (US); WO 9744051 held by Finzelberg S Nachfolger GmbH (DE) and the inventors.	Species endemic to South Africa, Namibia and Botswana, where it has a long history of traditional use and is also harvested for international trade. Patents cover use of extracts to treat various bronchial asthma, ulcerative colitis, Crohn's disease, rheumatism, and bone or joint inflammation. No known benefit-sharing arrangements are in place.
<i>Harungana vismia</i>	US 5,837,255 held by Shaman Pharmaceuticals Inc. (US)	History of traditional medicinal use in a variety of African countries. Product targeted towards the treatment of hypoglycemia and diabetes.
<i>Hypoxis</i> and <i>Spiloxene</i> species	US 4,652,636 (1987) held by Roecar Holdings NV (NL)	Plants originate in Southern Africa where they have traditionally been used to treat tumours and infections. Patent applies to the use of the compound for treatment of any cancer but lymphocytic leukaemia.
<i>Mesembryanthemaceae</i> family, including <i>Sceletium tortuosum</i>	WO 9,746,234 held by Farmac Nederland B V (NL) and South African nationals	Traditionally used by communities in Southern Africa as an inebriant and sedative. Patent grants a monopoly on the use of mesembrin and related compounds in the treatment of mental disorders.
Brazzein ("Joublie") (<i>Pentadiplandra brazzeana</i>) ⁴³	US 5,527,555; US 5,326,580; US 5,346,998; US 5,741,537 held by the University of Wisconsin (US)	Plant originates from Gabon, where it has long been used as a sweetener. Patent applies to the protein compound providing the sweetness, the Brazzein gene and transgenic organisms expressing the gene. This will eliminate the need for it to be collected or grown commercially in West Africa. Prodigene is introducing the gene in maize. There are plans of benefit sharing with West African people who discovered and nurtured the resource.
Pygeum (<i>Prunus Africana</i>) ⁴⁴	US 3,856,946; FR 2,605,886 held by Debat Lab (France)	The tree is native to African montane forests, with a broad range of distribution. Traditionally used for carving and to some extent for medicinal purposes. ⁴⁵ Its use for the treatment of prostate disorders has resulted in sales of some US\$150 million per year, but also serious over-exploitation in many areas.
Thaumatococin (<i>Thaumatococcus daniellii</i>) ⁴⁶	US 4,011,206 US 5,464,770 held by Tate & Lyle (UK) and Xoma Corp (US)	Plant originates in West Africa, and researchers at the University of Ife in Nigeria first identified its potential as a sweetener. The gene has since been cloned and used as a sweetener for confectionery. People from whose lands the plant was obtained received no compensation. ⁴⁷
Fungus (<i>Eupenicillium shearii</i>)	US 5,492,902 held by the US Dept of Agriculture; the University of Iowa Research Foundation; and Biotechnology Research and Development (US)	Fungus is derived from soils of the Ivory Coast. Intended use is as an insecticide.
New strain of HIV virus-1	US 5,019,510 held by Institut Pasteur (France)	The strain was isolated from a Gabonese doctor. Patent is claimed for the virus and its DNA sequence.



Many species used for herbal medicine are collected from the wild. In Africa, medicinal plants are often harvested faster than they can grow to supply the demand, and an increasing number are becoming scarce and vulnerable. Conservation is critical not only to protect biodiversity, but also to meet the health needs of the continent. With markets in the US and Europe for African herbal products such as the bark of *Prunus africana*, used to treat men's prostatic hypertrophy, growing at 10% per annum, added to rapid population growth in Africa, pressure on these resources will only increase.

Most of the top 150 plant-derived prescription drugs correlate with traditional medical knowledge from communities around the world.⁴¹ Exploitation of traditional knowledge by the powerful players in the global economy, using new technologies and with their profits protected by patent laws, is big business today. Although Africa has yet to yield a 'block-buster' drug, traditional African knowledge has been used to identify and develop numerous commercial products, with medical, cosmetic, food or agricultural value. In many instances these have been patented by researchers or companies in industrialised countries with no regard for the original holders of the knowledge or the technology. (See Table 1, page 9).

Patenting causes problems for both the traditional and modern systems of health care. Not only does it permit piracy of traditional medicine, it also makes the herbal drugs less accessible, for example, by creating scarcity of *Prunus africana* used to treat prostatic hypertrophy. It also monopolises

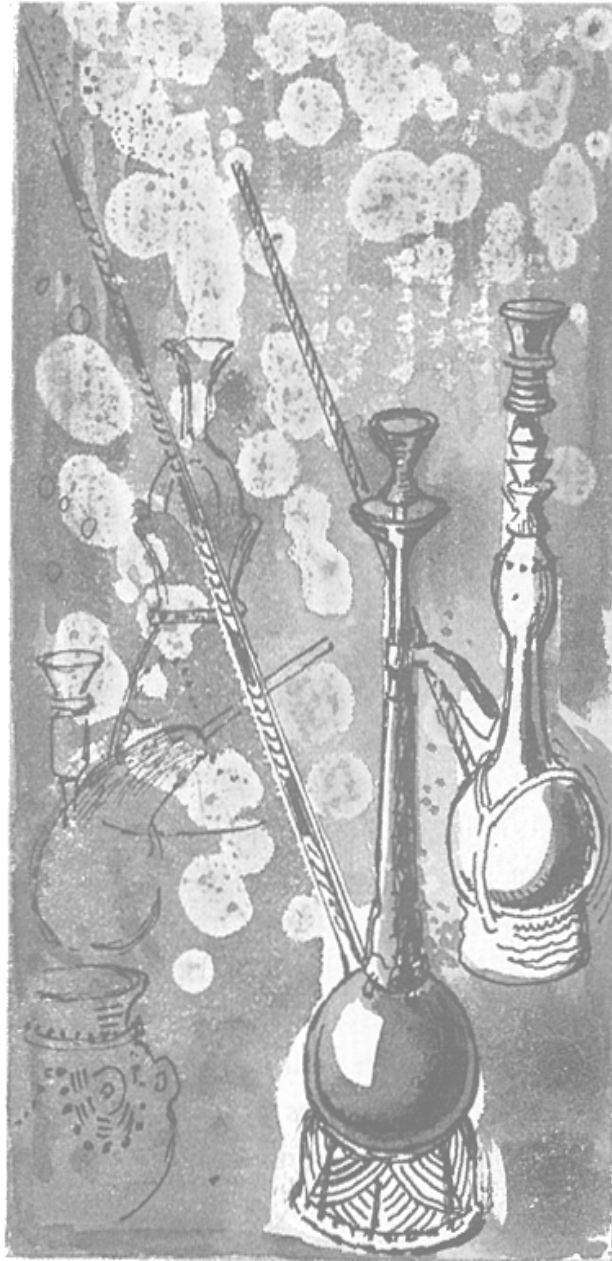
the market of modern drugs and keeps them artificially expensive, putting the modern health care system out of reach of most poor people.

The great irony, therefore, is that the modern drugs obtained from African traditional medicine are unlikely to assist with the health crises that plague the region. The same corporations that dominate in the agrochemical and seed industries are increasingly also merging with the pharmaceutical industry.

Within five years, they may own 75% of pharmaceutical companies worldwide. At an estimated \$300 million to develop and introduce a new drug, they are clearly focused on commodities for wealthy Western markets - anti-obesity drugs, antidepressants, cardiotonics and cancer treatments - rather than on medicines that could transform the lives of millions of Africans suffering from malaria, tuberculosis and malnutrition. On average, Africans spend less than \$10 per person per year on health care, and their debt-strapped governments are unable or unwilling to subsidise adequate medical treatment. Even those drugs that are appropriate - such as AIDS drugs - are prohibitively expensive for most developing countries. (See box).

The TRIPS agreement will exacerbate the lack of access, by further increasing the price of drugs and the concentration of research and development in industrialised countries. In addition, the current revision and expansion of the WTO General Agreement on Trade in Services (GATS) will force countries to open up their

health services to foreign commercial and transnational corporations. Privatisation and foreign ownership will have serious implications for the majority of people in the world who simply cannot afford to pay for health services.



Only the Rich get Cured - South Africa's access to AIDS medicine

Policies to reduce the costs of medicines sorely needed to solve public health problems in Africa are being vigorously contested by pharmaceutical corporations as an infringement of their patent rights and a violation of WTO regulations.

In an attempt to alleviate its public health problems, South Africa has issued compulsory licenses, which authorise local manufacturers to make cheap versions of still-patented drugs, and allowed parallel importing of drugs, which permits them to be imported at less than the manufacturers want to charge. In a country where 20% of young people and pregnant women have HIV/AIDS, the law would give access to drugs like AZT that reduce the transmission of the HIV virus from pregnant mothers to their babies.

Both compulsory licensing and parallel importation are actually permitted under the WTO TRIPS Agreement. Despite this fact, the US government, at the request of 41 of the largest pharmaceutical companies in the world, chose to interpret otherwise, and threatened trade and other sanctions - including the withdrawal of aid - to pressurise the South African government to repeal its legislation. South Africa's determination not to back down, with the support of the strong AIDS activist lobby in the US, managed to embarrass the Clinton administration in December 1999 into retreat.

Undeterred, international drug companies are suing the South African government in national courts. The South African government remains determined to introduce measures to reduce the costs of medication. With 23.3 million Africans infected with the AIDS virus, South Africa's stand for affordable medicine could set important precedents for the region, and indeed for other developing countries. However, the case also shows how intellectual property rights come into conflict with the provision of decent medical care for the poor, because companies are under no obligation to develop useful products or to make them available at an accessible price. For example, the USA has blocked the World Health Organization (WHO) from developing medicines based on health care patents the US government owns, even for those drugs identified by the 'WHO essential list' as crucial to solve global healthcare crises.

4. Commercialisation and Bioprospecting

4.1 Commercialisation for communities?

Given the current situation, how can the tremendous biological resources and human innovations of the African continent be used to benefit the region? One solution embraced by players as diverse as the World Bank, national governments, UN agencies, NGOs and the private sector, is to actively commercialise biodiversity and community knowledge and technologies within the benefit sharing and conservation provisions of the Biodiversity Convention. Biodiversity, they argue, cannot be adequately conserved without economic return: through commercialisation, the biological riches of developing countries will be valued and will bring economic opportunities and much needed technology transfer and capacity building. In practice, however, commercialisation is transferring the control and development of biodiversity into the hands of largely Northern corporations and institutes, and leaving little by way of return for communities on the ground.

Every day, more and more African biological resources are collected for commercial purposes, to be screened for potential therapeutic or other benefits, or to be packaged and marketed as herbal drugs, cosmetics or other natural products. Reports from Namibia, Senegal, Uganda, Kenya, South Africa, Mauritius, Zimbabwe, Cameroon and Ethiopia indicate the increase in bioprospecting.⁴⁸ Local interest is also increasing: universities, museums, botanical gardens, and other research institutions are collaborating in bioprospecting deals. They provide foreign companies or research institutions with help in field collections, provision of biological material or information, and in a very small number of cases where the capacity is available, through direct participation in new product discovery. Individual biologists, chemists, and healers from developing countries are approached by companies or foreign research institutions wishing to investigate a country's biodiversity and - generally through a lack of awareness - accept ad hoc payments or enter into an agreement out of line with the access and benefit-sharing provisions of the Biodiversity Convention. Dwindling government research budgets have made developing country universities and research institutions especially vulnerable to the lure of Western scientific institutions and companies.



A major problem is that most African countries lack the technological and scientific capacity to capitalise on commercial collaborations and the opportunities created by the Biodiversity Convention. Also lacking is the relevant expertise to negotiate and ensure a fair deal, a constraint heightened by the absence of legislation in most African countries to regulate access to genetic resources and to set parameters for benefit-sharing. Given this, how can commercialisation of biodiversity be anything but a reinforcement of Africa's role as a rich seam of raw material to be expropriated, achieving at best only trivial benefits for their struggling economies?

Some African countries - notably South Africa, Kenya and Nigeria - have been able to engage in the process,

through 'adding value' to information and resources supplied, by undertaking in-country research and development, and in some instances gaining access to screening technologies and product development (see box). While such projects have to some extent strengthened local institutions, scientific capacities, and biodiversity inventories, there is still little indication as to how African people are to be socio-economically uplifted, how incentives are created for biodiversity conservation, how generators of community knowledge and technologies are compensated, nor how the vexed questions of patenting of life forms are resolved. In short, commercialisation seems ultimately to serve rather than address the economic imbalances and inequities of the global trade system.

Key Bioprospecting Initiatives in Africa

CSIR, Phytopharm and Pfizer

CSIR, a parastatal research institute in South Africa, and the UK-based company Phytopharm intend to develop an anti-obesity drug from *Hoodia*, a plant indigenous to the region and long known by the San people to assuage thirst and hunger. The appetite suppressant has the potential to become the first blockbuster drug to be derived from an African plant,⁴⁹ with an estimated market potential of more than \$3 billion. No benefit sharing arrangements have been developed for the original holders of the knowledge. Further development and marketing is to be undertaken by US-pharmaceutical giant Pfizer. This is part of a much larger bioprospecting programme for the CSIR, which aims to tap traditional knowledge to investigate most of the country's 23,000 plants for commercially valuable properties. This is being done through an agreement between the CSIR and a committee of ten individual healers, raising controversial questions about the way in which the wider healer communities of South Africa are to benefit from commercialisation.⁵⁰

Bioresources Development and Conservation Programme

The Bioresources Development and Conservation Programme (BDCP) is a Nigerian-based NGO with an international office in the US, and administrative and research centres in Cameroon, Ghana, Guinea and Kenya. Acting as an intermediary, the organisation aims to forge partnerships between African countries and institutions in industrialised countries, and to foster scientific and technical expertise for Africa to develop and patent indigenous resources and compete on an equal footing with Western-based companies. It focuses on developing treatments for malaria, leishmaniasis, trypanosomiasis and other tropical diseases typically neglected by Western pharmaceutical companies. Much of this work is through the International Cooperative Biodiversity Group, a project under the auspices of the National Institute of Health, the US National Science Foundation, and US Agency for International Development.

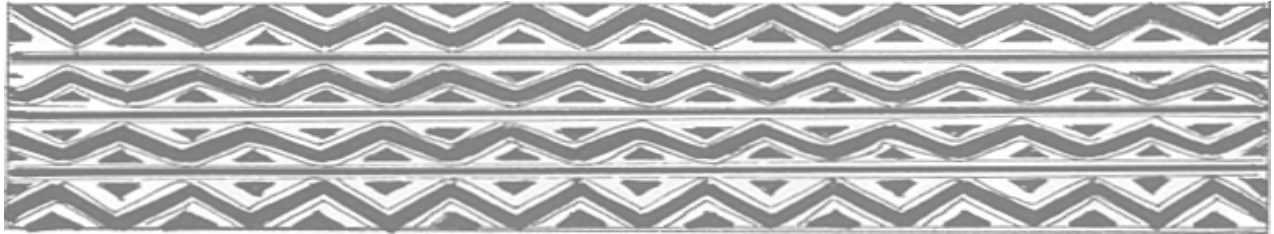
US-based company Axxon Biopharm Inc, the business arm of the BDCP, has produced five products based on African species so far. Although Axxon state that they "appropriately acknowledge the intellectual property rights of the individuals and communities that contribute to our success" through BDCP benefit sharing mechanisms, it is unclear how this is achieved. The Integrated Rural Development and Traditional Medicine, established by the BDCP through contributions from Shaman Pharmaceuticals, the Healing Forest Conservancy, and the ICBG, administers funds for "conservation, drug development and the socio-economic well-being of rural communities".

Bioprospecting and Capacity-Building in East Africa

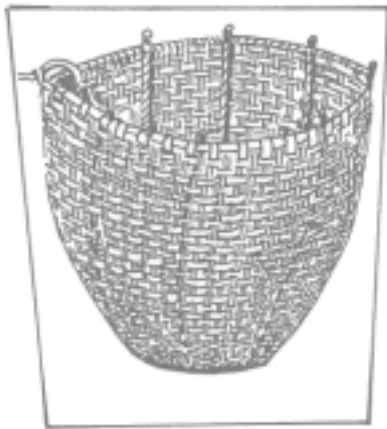
Based in Nairobi, Kenya, the International Centre of Insect Physiology and Ecology (ICIPE) is a non-government institute of advanced research and training in insect science. Bioprospecting is a key activity at ICIPE, although the organisation has not yet developed any concrete agreements and is currently focusing on building awareness and capacity about the issue among East African institutions. It does this through workshops, and the coordination of two key projects focused on bioprospecting.

The first, funded by WHO, the World Bank, and UNDP, involves research institutions from Tanzania, Uganda, Ethiopia and Kenya in a bioprospecting initiative focused on mosquito-repellent and insecticidal plants in East Africa. The second project, funded by the UN-affiliated International Centre for Scientific Culture, aims at providing, free of charge, mass spectral services to African scientists who are investigating natural products from plants and animals but who do not have access to such facilities. They also offer a fellowship programme to African scientists. Importantly, ICIPE has developed a Memorandum of Agreement with the Ministry of Environment and Natural Resources and the Kenya Wildlife Service describing how benefits would be shared between the institutions in the event of commercialisation. Biodiversity research, conservation and rural development are priorities in this regard.

ICIPE is also working with Belgian NGO the International Organisation for Chemical Sciences in Development (IOCD) in preparing a bioprospecting programme of workshops and training courses. The IOCD spearheads a "Biotic Exploration Fund", which raises money to "help developing countries build local scientific and entrepreneurial capabilities for bioprospecting".⁵¹ A programme is being planned for Uganda, following work in Kenya and South Africa. However, the initiative is backed financially by Monsanto, Ciba-Geigy, Novartis, and several other agrochemical and pharmaceutical corporations,⁵² leading many to be sceptical of the initiative. Others question its efficacy: little emerged from similar initiatives undertaken in South Africa in 1996.



Some, in South Africa for example, doubt the ability of bioprospecting to pay real dividends, and show a growing recognition of the importance of developing and supporting industries based on phytomedicines, personal care products and food supplements.⁵³ This option offers fewer risks and delays,⁵⁴ the use of technologies more appropriate to developing countries, and also a far greater chance of benefits reaching the ground. Thus, in South Africa, a job creation programme for retrenched mineworkers is spearheading the commercial production of a beer made from the indigenous marula tree; in Namibia a women's cooperative is involved in the commercialisation of a resource long used and nurtured by them; and in Botswana and Zimbabwe numerous projects are being launched to develop products, owned and managed by local communities. Countries clearly need to develop strategies to respond to bioprospecting and the search for new drugs and other products, but Africa is best positioned to invest its energies in more locally driven solutions to economic and environmental crises that provide tangible economic improvements to local livelihoods.



5. Reclaiming Africa

5.1 *The African Renaissance: Global fora and regional strength*

How are African governments, farmers, NGOs and communities responding to these fundamental changes in agriculture and healthcare, and the incursions into African tradition and culture? Is the stage set for a new and mightier form of colonialism, where Africa is helpless in the face of economic conditionalities and trade pressures?

On the contrary, despite the enormous obstacles facing the continent, at the turn of the millennium, a new and dynamic political phase is abroad in Africa, identified as the "second independence struggle" or, according to South Africa's President Thabo Mbeki, an "African Renaissance". This is being reflected at many levels, and in many different ways. From Addis Ababa to Cape Town, the call is for the continent to find "African solutions for African problems", in discarding pessimism, taking control of its own future, breaking neo-colonial relations with the world's economic powers, and vigorously pursuing the economic recovery of the continent. There are moves to protect the rights and interests of indigenous and local communities, reject the patenting of life forms, and develop indigenous technologies and innovations that are appropriate to local conditions and needs.

Within international fora, these sentiments are illustrated by the increasingly influential role played by Africa in the various initiatives stemming from the Convention on Biological Diversity and in the World Trade Organisation.

The dramatic collapse of the Third Ministerial Meeting of the World Trade Organisation in Seattle in November 1999 was caused in part by a joint rebellion by developing countries, prominent among them the Africa Group of ambassadors, against being steamrollered by the industrialised nations into an agreement. In an unprecedented, and strongly worded statement during the meeting, on 2 December 1999 the Organisation for African Unity (OAU) / African Economic Community (AEC) warned that:

There is no transparency in the proceedings and African countries are being marginalised and generally excluded on issues of vital importance for our peoples and their future... We reject the approach that is being employed and we must point out that under the present circumstances, we will not be able to join the consensus required to meet the objectives of the Ministerial Conference. We therefore expect that our concerns as consistently expressed by African countries ... to be adequately addressed.

The WTO - and indeed the whole globalisation project - suffered a stunning loss of legitimacy at Seattle. The collapse of the trade round was not only an affirmation of developing countries' complaints, but also an opportunity to



further challenge the way the WTO serves the interests of the industrialised nations and their corporations. The Africa Group still continues to refuse to accept a new round of talks until its concerns about imbalances at the WTO and in the global trading system have been dealt with. Building on their newly found muscle and solidarity in Seattle, WTO General Council Chairman Ali Mchumo of Tanzania said the least developed countries would continue to fight to rectify the imbalances from previous trade agreements.⁵⁵

More specifically, the Africa Group's position on the revision of the TRIPS agreement was a major stand. In the run up to Seattle, African governments, regional bodies such as the Organisation for African Unity (OAU)⁵⁶, the South African Development Community (SADC)⁵⁷ and the African Group of Ambassadors, had affirmed:

- *their rejection of the patenting of life forms;*⁵⁸
- *the need for the TRIPS Agreement to exclude microorganisms and microbial processes from patentability;*⁵⁹
- *the importance of maintaining flexibility within Article 27.3(b) of TRIPS for sui generis systems to protect plant varieties, and the need for such systems to protect the innovations and practices of farming communities;*
- *the need for TRIPS to be harmonised with the CBD and the International Undertaking; and*
- *the importance of relaxing the exclusive rights of patent holders in respect of drugs listed as essential by the World Health Organisation.*

The African TRIPS position is supported by many developing countries like Cuba, Dominican Republic, Egypt, El Salvador, Honduras, India, Indonesia, Malaysia, Pakistan, and Uganda. In addition, peoples' movements and NGOs around the world urged their governments to support the position of the Africa Group.

The collapse of the WTO round left the vexed issue of patents on life, and the different positions of developing versus developed countries, unresolved. Though most developing countries should have implemented TRIPS by 1 Jan 2000, 80% of those African countries due to do so have not.⁶⁰ There are reports of US mounting pressure through 'WTO TRIPS Compliance Meetings' for patent regimes to be adopted in Africa, presenting patents on life

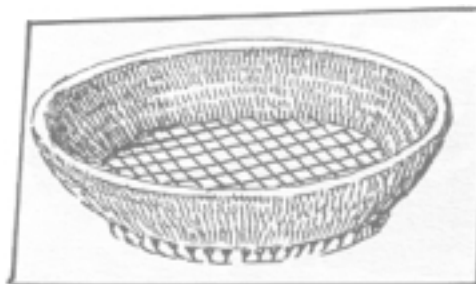
as inevitable and with no information about the current stalemate at the WTO made available. At one meeting, the Southern African Development Community's legal adviser had no information about the strong SADC statement made in Seattle regarding life patents.⁶¹ In fact, given the current state of play in Geneva, the TRIPS review could be extended well beyond 2000. This provides a golden opportunity to stand firm on the Africa Group's position, which is in fact the most comprehensive proposal for a favourable way forward for developing countries.⁶²

Above all, in the rejection of TRIPS Africa is arguing for the WTO to allow member states to maintain systems of their own choice in order to ensure national food security, livelihoods, healthcare, and the development of sustainable agriculture. At the regional level, initiatives are underway to put such systems in place.

The strong, united African position contributed to progressive positions being taken on the environmental, ethical, social and economic consequences of modern biotechnology under the Biosafety Protocol. During the last two Biosafety Protocol meetings, the Africa Group was nominated to lead the 'Like-Minded Group'⁶³ in negotiations. It was well positioned to do so due to the fact that it had been analysing the issue and developing its position for a number of years. Africa's strength, together with that of most developing countries, and the aftermath of the collapse of the WTO meeting in Seattle, helped to create a situation in which a Biosafety Protocol was agreed upon.

The OAU has developed 'African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources'. This model aims "to ensure the conservation, evaluation, and sustainable use of biological resources, including agricultural genetic resources, and knowledge and technologies in order to maintain and improve their diversity as a means of sustaining the life support systems". Importantly, it rejects intellectual property rights and sets out alternatives to UPOV for the protection of plant varieties.

In co-operation with the OAU, SADC is drafting common legislative framework for sui generis rights, including catering for different sectoral activities within a country -



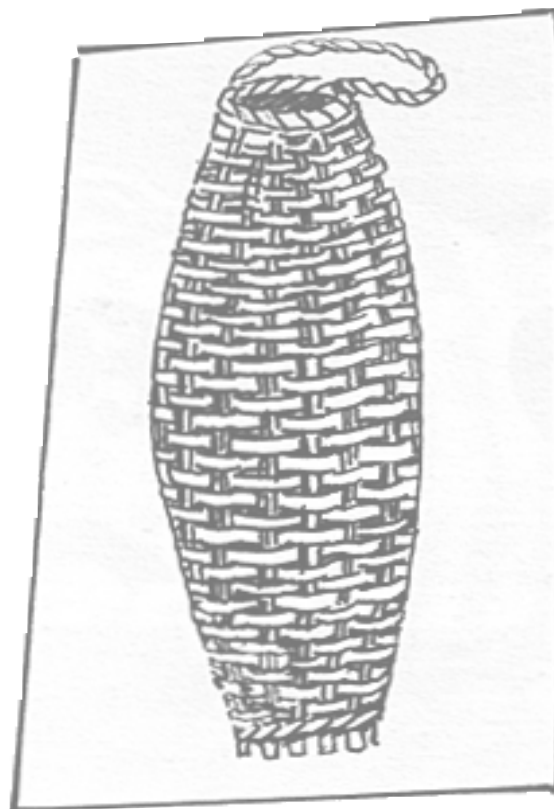
from horticultural products through to open-pollinated crops and medicinal plants. Another recent OAU initiative has resulted in draft biosafety model legislation that would make it illegal for a country to export genetically modified food without first seeking permission from the importing country.⁶⁴ Such co-operative undertakings and debates help to enable governments to establish domestic regimes that regulate biotechnology, control access to genetic resources, ensure equitable benefit-sharing, and protect the rights of farmers, communities and plant breeders.

5.2 National legislation and grassroots initiatives

While it is still too early to assess the impacts of OAU processes, awareness is undoubtedly growing among governments as to the urgency of implementing measures to deal with these issues. In many countries, TRIPS requirements for countries to create intellectual property rights over plant varieties have provided a major impetus. In countries that have significant plant breeding activities, such as South Africa, Zimbabwe, and Kenya, legislation has long existed to do this. In Zimbabwe, such legislation is coming under increasing scrutiny and efforts are underway to develop a *sui generis* legislation, in line with the proposal described above for SADC. Other countries such as Zambia, are committed to a Plant Breeder's Act presently being formulated through wide consultation.⁶⁵ In Uganda draft legislation to protect community rights is on the table and going through a process of consultation. In a number of Africa countries, including Ethiopia and South Africa, there are ongoing policy processes to ensure the protection of traditional knowledge and Farmers Rights, though South Africa in particular is facing powerful lobbies opposing this.

At the national level, perennial constraints of capacity, resources, vested interests, corruption, and lack of political will are critical obstacles to government awareness of and ability to support and implement broadly the progressive joint position taken by African negotiators in international fora. A major problem, and one that is not unique to Africa, is that institutional links between biodiversity and trade issues are usually not made within and across national government departments. Despite the current policy vacuum in most countries, as governments' awareness grows they are also realising the importance of legislative measures to control access to genetic resources and to regulate biotechnology. (See Table 2, page 16).

Making the links between trade, structural adjustment, biodiversity conservation, and basic development issues has been far less of a problem for the growing and dynamic coalitions of civil society organisations, farmers, scientists, and citizens throughout the region. They have become more and more engaged with trade issues as these have impacted civil society's areas of concern of local sustain-



ability and equity. Non-governmental organisations were steadfast in their support for the positions taken by the African Group for the WTO negotiations.⁶⁶ For example, the African Trade Network, of over 20 NGOs and civil society groups from 10 African countries, called on African political leaders to prohibit the patenting of life forms and ensure the protection of traditional knowledge over biological resources by supporting the Africa Group position.

Grassroots groups throughout Africa are working to safeguard the region's threatened biodiversity, as well as to safeguard agriculture and healthcare systems that serve the needs of local populations. A recent example is that of a consortium of groups from Southern Africa who launched a South African Seed Initiative in early 2000 to ensure food security and nutrition security for all those affected by the floods in the region. They appealed to the international community to "prevent the importation of inappropriate seeds to the Southern African region which can undermine agrobiodiversity and thus food security for years; and to support efforts to reconstitute locally adapted planting material and quality seed material/varieties, like indigenous or farmers' varieties appropriate to the various ecosystems."⁶⁷ Table 2 includes outlines of other grassroots initiatives on the continent, though many more are newly emerging.



Table 2. Examples of African national legislation and grassroots initiatives related to biodiversity

Country	Initiative
Cameroon	<ul style="list-style-type: none"> Cameroon has broad provisions to regulate access to genetic resources. CBD issues, such as benefit sharing, incentive measures and local population involvement in resource management are included in the forestry law and were also incorporated into the 1996 Framework Law on Environmental Management.
Ethiopia	<ul style="list-style-type: none"> Does not permit the export of any indigenous germplasm for commercial development. Rejected UPOV '91. Does not permit patents on life, imports of GE products, nor GE crops or experiments. Has drafted legislation on community rights, farmers' rights and access to biological resources.
Kenya	<ul style="list-style-type: none"> There have been calls to legislate to control imports of GMOs, backed up by a strong voice from farmer groups to reject the patenting of life forms and to assert the importance of collective ownership of genetic resources and associated innovations.
Malawi	<ul style="list-style-type: none"> Malawi is presently developing a policy on access to genetic resources and benefit sharing.
Namibia	<ul style="list-style-type: none"> The Biodiversity Task Force, a national task force to protect biodiversity, comprises NGOs and the Namibian government working on a number of pieces of legislation relating to the commercialisation and use of biodiversity, biosafety, regulations on access to genetic resources and the protection of traditional knowledge. A biosafety framework is currently before parliament. The Alliance acts as a monitoring forum. Official policy is to reject patenting of living materials and imports and trials of GE crops. Returned South African maize for animal feed because it could be contaminated with GE. Rejected UPOV '91.
South Africa	<ul style="list-style-type: none"> Poor co-ordination between different government departments administering biodiversity related legislation. Legislation has developed on an ad hoc basis, though South Africa does have a Genetically Modified Organisms Act. NGOs in the process are challenging the biosafety related legislation because it is viewed as inadequate. Does not permit patents on plants and animals, but does on microorganisms. UPOV '91 has been signed but not ratified. Indigenous Rights legislation is being redrafted. First GE field trial 1990, first commercial release 1997. Commercial growing of Bt cotton and maize. NGOs have formed a coalition (SAFEAGE) to monitor, inform the public, and challenge these developments. A flourishing coalition of trade unions, political parties, NGOs, consumer bodies, and farmer groups is demanding a five year freeze on the use and release of genetically engineered crops, and other movements in other African countries calling for similar measures are springing up all the time.
Uganda	<ul style="list-style-type: none"> Uganda has the same policy as Namibia, refusing patents on living materials, GE imports and experiments. Refused to adopt UPOV '91 despite heavy pressure to do so. Drafted its own Plant Varieties Act, and has refused permission for Bt cotton trials. There is a NGO forum on biodiversity with some regional representation to promote and protect biological and cultural biodiversity. Calls to tighten legislation on GMOs, again backed by strong feeling from farmer groups, to reject the patents on life, and assert the importance of collective ownership of genetic resources and associated innovations.
Zimbabwe	<ul style="list-style-type: none"> No legislation on patents, but breeders' rights grant sole rights for 10 years. Scientific and consumer groups are calling for tighter legislation on the import of genetically engineered seeds, plants and food, and to delay the importation of genetically engineered crops and food until the risks have been scientifically evaluated. Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) are investigating threats of patenting of indigenous knowledge on medicinal herbs, with a view to coming up with a system to identify properties that belong to Zimbabwe.

Maintaining momentum for Africa's self-determination - in the face of dramatic obstacles - is a great necessity. There are enormous pressures on Africa from the World Trade Organisation, UPOV, and transnational corporations, to adopt WTO rules and introduce TRIPS and high-input and corporate controlled agricultural systems. Huge vested interests are at stake, from the faceless transnational corporations pushing biotechnology at all costs, to those government officials already reaping significant benefits through handouts and iniquitous deals.

Yet, the current period marks a real sense of strength and renewal, reflected in Africa's effective negotiating on the world stage, and its strong analysis and joint positions on biodiversity. The voice from Africa is growing steadier and stronger in defending the values of self-determination, the right to control its own biological resources, and the need to protect the knowledge and livelihoods of its communities. The momentum it is creating is not just articulating a newly confident African voice, but is encouraging other Southern communities to demand global justice.



Recommendations

1. Build on local knowledge

Africa's biodiversity based food and health systems should be strengthened and enhanced. These are based on generations of refining knowledge and adaptation to local needs and ecosystems. New or foreign ideas and technologies should be evaluated according to their capacity to enhance such diversity-based systems, and improve their sustainability and productivity. In that context, the enhancement of community control over local livelihood systems should be the first priority.

2. Prioritise local and regional economies and livelihoods

Africa should strengthen its local and regional economies as a first priority, rather than turning its focus to competing in global markets. Africa is a rural based economy that supports millions of people living in diverse local livelihood systems and informal economies. Indiscriminately opening up these systems and economies to global market pressures and corporate control, where the starting positions are so unequal, will inevitably result in their destruction and increase poverty and marginalisation.

3. Support and implement joint African positions

African unity in international negotiations on a number of critical issues has made it a global force, fomented solidarity amongst developing countries, and challenged the domination of industrialised countries. It is very important that this proactive stand and this unity is maintained and supported, and that the proposals are internalised at the national levels into policy, practice and legislation. Most essentially these include:

- The common African position in the TRIPS negotiation, arguing for a full review process, and rejecting patents on life.
- The continuous scrutiny of patents on African plants and knowledge, and the legal challenge of them.
- The OAU model legislation for the development of community rights, and rules for access to and benefit sharing of biodiversity.
- The implementation of the biosafety protocol providing strong criteria and controls for evaluating, testing, importing, and production of genetically modified organisms in Africa.

4. Strengthen role of civil society

Continued networking and monitoring by civil society groups are fundamental to conserve and use biodiversity, and to protect the rights of Africans to safe food, appropriate and adequate healthcare, and diverse sustainable livelihoods. It is important that in the area of biotechnology, governments, NGOs and farmers organisations continue to evaluate and monitor the introduction of transgenic crops into their countries. Mandatory environmental and social impact studies and full disclosure of all information about releases and commodities should be required and implemented. A broad public discussion on the appropriateness of genetic engineering for Africa needs to be promoted.

5. Towards meaningful benefit sharing

There is a serious danger that Africa's biodiversity is turned into merely yet another commodity traded between the rich and the poor, resulting in the appropriation of knowledge and resources. This is the direction much of the current benefit sharing initiatives are taking. Rather than leaving the benefit sharing discussion to bilateral deals between powerful corporations and weak countries and communities, clear and mandatory rules of the game should be drawn up. Those on the ground should be able to insist on local job creation and other visible demonstration of benefits, with the ability and information to refuse anything less and token gestures. Those involved in agreements should be required to give full disclosure and implement full prior informed consent procedures. But perhaps most importantly, more resources and energies should be put to develop and build locally driven initiatives to add value and quality to products from biodiversity, both for its local use and for its international trade.



Footnotes

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