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THE DECISION OF THE ZAMBIAN GOVERNMENT TO BAN GENETICALLY  
MODIFIED FOOD AID

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## Abstract

The growing famine in the interior of Southern Africa during the year 2002/3 has raised important dilemmas for regional governments with respect to food aid. Should governments import genetically modified (GM) maize, the staple foodstuff of the region? The United States had, apparently for some time, issued donations of GM maize to the World Food Programme of the United Nations. Few other governments had made offers of aid available in the form of maize through the WFP. Of affected countries in the region, Zimbabwe, Lesotho, Mozambique, Malawi and Swaziland opted to accept GM maize, whilst after considerable public debate and the despatch of a high-level scientific delegation to the United States, South Africa and a number of European countries, President Levy Mwanawasa of Zambia decided that his country would not follow suit.

The paper examines the varying pressures on the Zambian government to accept or reject GM food aid. It looks at the politics of international development assistance in the form of food, and specifically of GM maize. It looks at the US strategy to "soften" the way for the adoption of GM food use and commercial crop expansion in vulnerable Southern African countries. It deals with the issue of exports to the EU markets and how these might be affected by GMO contamination. It looks at the dilemma of countries faced with famine, but not yet having adopted a food safety nor a full-scale biosafety regime, in bowing to or resisting such pressures. Finally it examines the significance and impact of Zambia's position for establishing food security at a national level.

## Introduction

The decision by President Levy Mwanawasa of Zambia to reject importation of genetically modified (GM<sup>1</sup>) food aid, taken in October 2002, was an extremely momentous one. In the face of considerable pressure from the United States government, the European Union (EU) Commission, and a number of United Nations (UN) agencies, Zambia acted to assert its national sovereignty and resisted the notion that its position was morally suspect at a time of drought and starvation. The binary alternatives – import GM foods or starve – did not hold in the face of the array of options available to Zambia and its vulnerable regional neighbours.

This paper seeks to unpack the dynamics that underpinned the decision. It starts by analysing the drought of 2002-3 that has swept certain countries of the Southern African region. Droughts do not only occur as a result of natural forces, but may be exacerbated at local level by economic and disaster management policies, market and trade strategies, indebtedness, governance issues, questions of land ownership and distribution, planning, logistics, health and the extent of desertification or deforestation. On a global scale, production of greenhouse gases, development aid policies of donor nations, and the behaviour of food distribution agencies also have impacts on the outcome of a drought.

Are the roots of food insecurity in Zambia to be found more broadly in its agricultural economy? The second section of the paper notes the persistence of colonial tenure patterns, and the difficulties that Zambia has faced in feeding itself. Market liberalisation and an investment hiatus have also contributed towards dislocations and exacerbated sub-optimal agricultural performance.

The paper goes on to examine the risks entailed in the unleashing of GM crops into the Southern African region. Not all countries of the region possess biosafety regimes, and those which have been established are fairly weak. Risks are usually examined in terms of human and animal health and of the environment. However, it is also important in a drought-stricken region to discuss the impact of GM crops on the precariousness of food security. The paper also looks at the implications for these questions of increasing monopoly corporate control in the biotechnology industry.

The industry has been exerting considerable influence on United States (US) trade and aid diplomacy, as well as relevant UN agencies, in order to “soften up”

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<sup>1</sup> Despite an awareness of the debate on nomenclature, I have opted to use the term ‘genetically modified’ rather than ‘genetically engineered’ or ‘genetically enhanced’ to indicate transgenic food crops. No ideological intent is meant. Instead the decision was based on common current usage in the majority of the English-language media consulted.

vulnerable countries' acceptance of GM foods. It shall be shown how this serves to subsidize US farmers, resolve the problems of US overproduction of GM crops, extend its global sphere of influence in an increasingly politicised agricultural trade and policy environment, offset consumer resistance elsewhere, and develop global tolerance for high-input solutions to food production.

What was peculiar about Zambia that it was the only vulnerable country of the region to reject the importation of GM foods decisively? One ingredient was surely the growing dependency on the European market for its agricultural produce. Another was the level of consultation that was undertaken by government, both at home and abroad. A further factor was the independence of its scientific establishment in relation to the interests of corporate biotechnology. These and other motives will be examined in the course of the paper.

Finally, the paper looks at some of the consequences of Zambia's decision, and suggests some lessons for the region and other developing countries.

#### **i. Conditions of drought in Southern Africa 2002-3**

Southern Africa has experienced highly variable climate and rainfall patterns over at least the past three hundred years. This takes the form of, on average, 18-year cycles of alternating wet and dry spells. Droughts in the region are therefore endemic and recurrent (Tyson, 1987).

What we mean by droughts are periods of abnormally dry weather which lead to hydrological imbalances. These can result from changes in the volume or frequency of rainfall, or changes in the atmosphere's evaporative demand. Such changes may affect the survival of crops, livestock, forests, other vegetation, wildlife and human beings. Ecological systems become severely stressed, and economies face conditions of food insecurity, inflation, job loss and increased prices. These burdens are largely borne by the rural poor, but food price inflation also affects the urban poor.

In the region, droughts have occurred in the following years: 1946/7, 1965/6, 1972/3, 1982/3, 1986/8, 1991/2, 1994/5 and 2002/3. In some parts of the region, the most recent droughts have been the most severe. Their severity has partly been attributed to the El Niño-Southern Oscillation (ENSO) phenomenon. During an ENSO phase, triggered by an upwelling of warm water in the equatorial Pacific ocean, normal airflow from the Pacific to the Indian oceans is weakened, leading to high rainfall across South America, and low rainfall over Southern Africa (King and Chenje in Chenje and Johnson, 1996: 33).

The impact of anthropogenic climate change is increasing the intensity of droughts, and raising temperature levels. Whilst Southern Africa is not generally a major carbon emitter (with the exception of the more industrialised and coal-reliant South Africa which contributes between 1-2% of global greenhouse gas emissions), nevertheless the burning of biomass, especially charcoal, adds to the problem.

The current drought is said to be impacting on between 12.8 and 14 million people in Southern Africa. Food deficits are largely being experienced in Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe. Recurrent floods are adding to the problems facing Mozambique (*Mail & Guardian*, 09.08.2002; Christie and Hanlon, 2001).

Whilst questions of disaster management have been addressed more rigorously, countries in the region have not been able to develop infrastructural strengths in food delivery. In Zambia's stricken Southern Province, for example, only two NGO agents exist to distribute famine relief to 68 villages (*The Monitor*, 27.9.2002).

Table 1

COUNTRIES OF THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

Country	Area (km <sup>2</sup> )	Population c2000	Caloric supply per inhabitant
Angola	1 246 700	14 361 000	1 903
Botswana	581 730	1 571 000	2 255
Congo-Kinshasa	2 344 860	56 174 000	1 514
<b>Lesotho</b>	<b>30 350</b>	<b>2 091 000</b>	<b>2 300</b>
<b>Malawi</b>	<b>118 480</b>	<b>12 081 000</b>	<b>2 181</b>
Mauritius	2 040	1 190 000	2 985
<b>Mozambique</b>	<b>801 590</b>	<b>19 321 000</b>	<b>1 927</b>
Namibia	824 290	1 849 000	2 649
Seychelles	450	84 000	2 432
South Africa	1 221 040	44 541 000	2 886
<b>Swaziland</b>	<b>17 360</b>	<b>956 000</b>	<b>2 620</b>
Tanzania	945 090	37 683 000	1 906
<b>Zambia</b>	<b>752 610</b>	<b>11 095 000</b>	<b>1 912</b>
<b>Zimbabwe</b>	<b>390 760</b>	<b>13 301 000</b>	<b>2 117</b>

Source: Social Watch (2003) *The citizens' report on the quality of life in the world* (Montevideo: SocialWatch) [www.socialwatch.org](http://www.socialwatch.org)  
**Vulnerable countries' statistics are depicted in bold.**

Governance questions also impact upon drought management. In South Africa, drought relief from the national government has been hampered by the provincial authorities in KwaZulu-Natal province, which falls under the political control of the rival Inkatha Freedom Party (ANC-KZN press statement, 17.1.2003; *Sunday Times*, 19.1.2003). Similarly, reports on food aid deliveries in Zimbabwe indicate that distribution is occurring along partisan lines.

Land redistribution measures in Zimbabwe have compromised the food security of many citizens. Commercial agriculture has almost been extinguished, resulting in crop losses, food shortages, inflation of food prices, difficulties in obtaining foreign exchange and fuel. Former farm workers and service providers have experienced joblessness, and there has been a steady brain drain from the country. The majority of beneficiaries of land reform are without credit or extension services, and lack the means to produce or market surpluses. For drought relief systems to function adequately, a measure of social solidarity is important. However conditions in Zimbabwe are marked by despotism, civil conflict, rigged elections, physical attacks on opposition members and on the independent press (Chan, 2003).

As neo-liberalism spreads in the region, macro-economic policies have tended to leave food pricing and distribution to the market. This affects the safety net for the poorest, who become more vulnerable to hunger. The state sector shrinks, losing the capacity to guarantee that social services are undertaken in the interests of the poor.

Malawi's National Food Reserve Agency undertook efforts to stockpile 28 000 tonnes of maize for distribution in times of stress. However this proved to be futile when the Agency was pressurised by the International Monetary Fund and the World Bank to sell off the stockpile in order to raise hard currency to repay past debt to commercial banks. Thus when the drought broke, Malawi was forced to consider contracting further loans to afford GM maize offered by the United States (BBC News, 29.5.2002; ActionAid press release, 14.6.2002; *Sunday Herald*, 16.6.2002; OneWorld, 14.6.2002, 4.7.2002 and 25.7.2002).

The extensive incidence of HIV/AIDS in the region has also led to a worsening of the food crisis. In Zambia alone, tens of thousands of cultivators have died, and an estimated 20 per cent of the population is infected (ZANA, 10.09.2002). Agricultural productivity is being eroded, and, more often, work on the land is being left to the elderly and orphaned children, who find themselves having to head households. As the pandemic takes hold, fewer breadwinners have to take care of more dependents. With the increase in hunger, immune systems deteriorate faster.

Thus, whilst droughts have their origin in climate change, some of the other

factors influence their extent and duration. These have included, at national level, questions of preparedness, logistical infrastructure, sustainable land allocation and use, the extent of social solidarity, the nature of the country's macro-economic policies, its degree of commitment to food security, and the population's health status. External factors include the level of international commitment to reduce global warming, the development aid policies of donor governments, and the distribution strategy of the relief agencies.

## **ii. Zambian agriculture and food insecurity**

While drought impacts negatively on Zambian food security, the structure of the Zambian agricultural economy also plays a role. Zambia's considerable agricultural potential is not fully realised, with only 16% of the country's arable land, amounting to 9 million hectares, under cultivation. Although agriculture provides a livelihood for over 67% of the economically active population, it accounts for only 18-20% of the gross domestic product. It is the main source of income and employment for rural women, who constitute 65% of the total rural population. About 459 000 farm households cultivate for subsistence, working farms of an average size of 2 hectares with hand hoes or oxen. Another 119 000 are emergent commercial farmers, producing both for subsistence and the market. There are 25 250 medium-scale commercial farmers on land sized between 20-60 hectares in area, with over 40 large-scale farmers or farm corporations on land over 60 hectares in area (SARPN, 2002: 45, Moyo *et al.*, 1993: 273).

Zambia's main food crops are maize, sorghum, cassava and millet, while other cash crops include sunflower, groundnut, wheat, cotton, soya, sugar and tobacco. Small maize surpluses are occasionally exported.

Increasingly, non-traditional agricultural exports have become important. Zambia has been able to export vegetables such as green beans, baby corn, courgettes, eggplants, carrots, chillies and peas. Cut flowers have also proved profitable in export markets. Revenue from these products rose from US\$46,5million in 1995 to US\$133,9 million in 1999. These exports are likely to be affected adversely by higher prices of inputs such as energy and fertiliser (SARPN, 2002: 48).

The land tenure system is, in a number of ways, an impediment to the optimal utilisation of Zambia's agricultural resources. Since colonial times (1889-1964) land has been divided into three categories: state, reserve and trust lands (for an overview of agriculture in the colonial era, see NRID, 1950: 181-99; Thompson and Woodruff, 1954: 137-51; Brelsford, 1960: 252-4, 291-9). Reserves (55% of agricultural land) fall under customary law and are only available to indigenous Zambians. State land is used for commercial agriculture (1,2% of the land), as

well as for township and infrastructural development, and is administered under a leasehold system promoting private tenure and commercial production. Trust land is reserved for the common benefit, and includes protected wildlife areas and state forests.

Traditional authorities exercise control over the reserve lands, allocating usufruct rights to individuals and communities. Often there is communal use of lands for grazing, gathering of food and firewood, and hunting purposes. Individual title in reserves is rare: costs of surveying tend to be prohibitive, and ownership reverts to the state. Hence little individual responsibility for conservation of the land's fertility occurs. Mobility within the reserves has diminished owing to rapid increases in population density. Farmers resort less often to the 'slash and burn' system, and eke out livelihoods on limited land, which is increasingly subject to erosion and infertility. Invasions of state land – often linked to ancestral claims – have become more frequent.

Private leases of limited state land have led to speculation, high prices, absenteeism and conflicts over land use. The inalienability of traditional land has inhibited its optimal development, because it constrains individual/family investment, innovation and entrepreneurship (Moyo *et al.*, 1993: 277). It also disfavours women's tenure rights, despite their massive contribution to agricultural production.

These patterns have led to significant fluctuations in production of crops since 1990, mostly affecting maize and sunflower cultivation, and hence domestic food security. Fluctuations result from variable rainfall, investments and marketing successes or failures.

Table 2

INDEX OF AGRICULTURAL PRODUCTION IN ZAMBIA (1989/90 = 100)

Year <sup>®</sup> Crop <sup>-</sup>	1989/90	90/1	91/2	92/3	93/4	94/5	95/6
White maize	100	97	43	142	90	65	125
Tobacco	100	N/a	68	162	70	101	122
Groundnuts	100	112	82	168	138	144	139
Sunflower	100	53	7	106	49	69	134
Cotton	100	133	71	131	91	45	112
Beans	100	99	143	164	162	166	167
Sorghum	100	107	66	181	179	135	182

Source: Zambia, Central Statistical Office, Research Department.



The land tenure system is only one problem inhibiting growth in food and cash crop production. Others include the lack of state agricultural extension support, inadequate transport, environmentally unsustainable practices, unavailability of quality seeds, lack of access to credit, technology, and cheap energy, the high cost of inputs, the spread of insect attacks and crop diseases, deteriorating agricultural investment, unfair trade practices with regional neighbours in the COMESA free trade association, the previously noted negative effects of drought and the HIV/AIDS pandemic, and the adverse effects of the implementation of agricultural liberalisation policies. The transport infrastructure and investment policies favour the commercial farmers, whose lands are located along the main lines of rail. However, most subsistence farmers have very limited access to or information on the market, which undermines possibilities for transferring surpluses to areas of need.

The Zambian government, despite regarding agriculture as a prime export earning sector and having a major role in poverty reduction, is only spending an average of 4% of the national budget on the sector.

All these factors make for the extreme vulnerability of the agricultural sector, which cannot yet feed the domestic population. Zambia needs a sweeping agrarian reform, including tenure reform, before this can become possible.

### **iii. Pressures to accept GM food aid**

The highly concentrated global agro-biotechnology industry has demonstrated considerable power in its capacity to gain control over the food chain (Paul, et al., 2003). Having gained a dominant foothold in North American agricultural production, the industry's next step is to seek to expand elsewhere. Argentina and China have embraced GM crop production and are now large producers. Aid in the form of GM foods has also reached countries of Latin America, especially Ecuador and Nicaragua. However, informed consumer resistance in European countries, and, to some extent, Japan, has blocked the industry's access to those markets. Since the United States first began to promote GM maize, US maize exports to Europe have dropped from US\$305 million in 1996 to \$2 million in 2001 (Greenpeace, 2002). India has also refused GM food aid (*Financial Times*, 2.1.2003).

The prize would be access to Europe, and the agro-biotechnology industry needs a strategy to encircle the European market. Within Europe the fissures are growing, with the European food industry strongly lobbying the European Commission to bring an end to the three-year moratorium on GM crop releases and imports (CIAA, 2001). Meanwhile the United States is attempting to deepen

these fissures by chalking up further supporters for its GM industries.

It is in this context that Africa is one of the weakest links. African integration into world markets has historically been through the exports of its natural and human resources. Its minerals, coffee, tea, cocoa, cotton, timber, vegetables, fruits, flowers and wines are largely destined for European and Asian markets. Colonial and post-colonial economic arrangements with Western Europe have persisted, in particular, through the series of Lomé and Cotonou trade agreements with the EU since 1975.

Under the Clinton presidency, the United States began to recognize a need to engage more consistently with the African economies. Part of this has taken the form of the passage of the African Growth and Opportunities Act (AGOA), passed by the US Congress, which allows for extended access by African producers to the US market. Further initiatives include the Bush government's plans to form free trade agreements with Morocco and the countries of the Southern African Customs Union (Botswana, Lesotho, Namibia, South Africa and Swaziland). The renewed interest in the region creates possibilities for breaking Africa's dependence on Europe and offers opportunities to extend US corporate control over Africa's agricultural economy (Sharma, 2002).

The United States, through the biosafety negotiations, is aware of African governments' misgivings about GMOs. Yet it has calculated that if Southern African governments accept GM foods under conditions of a food crisis, it will be more difficult for them to refuse further incursions of GM at a later stage. Saliem Fakir, who heads the South African office of the IUCN, claims that the United States could be attempting to develop new trade alliances that could isolate Europe further in trade negotiations. It is the European market, rather than Africa, that is the ultimate target (*Mail & Guardian*, 16.8.2002).

The offer of food aid by the US Agency for International Development (USAID) to Southern African countries came in the form of food deliveries – or credits for purchasing US grain – rather than in the form of cash. This ties the recipients specifically to the US agricultural surplus, rather than leaving them free to source the most convenient surpluses, develop diversified sources, and build local infrastructure for future drought resistance strategies. Thus, despite being a signatory to the 1999 Food Aid Convention, which specifies that food aid should be sourced in the most cost effective manner, the US has seen aid as a deliberate mechanism for reducing its own highly subsidized stockpiles. This is in line with US assertions that “the principal beneficiary of America's foreign assistance programs has always been the United States” (USAID, 2002 as cited in Greenpeace, 2002).

USAID insists it is tied by Congress to deliver food or credits to purchase food,

rather than cash. USAID uses a trust, the Bill Emerson Humanitarian Trust, which falls under the control of the Secretary of Agriculture, and which has a mandate to purchase grains for emergency supply to developing countries. The trust holds up to 4 million tonnes of wheat, rice, maize and sorghum. In the case of provision of emergency aid for Southern Africa, the trust has sold some of its wheat (300 000t) in order to purchase maize stocks. Two groups of farmers benefit from this: the wheat growers who sell to the trust, and then the maize growers, whose product is purchased once the wheat sales have occurred. Both purchases happen at heavily subsidized rates for the farmers. This has enabled the US to deliver or pledge about 500 000t of emergency food aid to Southern Africa, at a value of about US\$266 million (Greenpeace, 2002).

USAID acts as a conduit for the US-based GM maize growing corporations, and sees its role as aiming to "integrate GM into local food systems" in Africa and elsewhere (US Department of State, June 2002). USAID's links with the GM industry include funding groups to persuade African countries to pass intellectual property laws which will pave the way for GM corporations to operate in Africa. USAID accepts funding from Monsanto and Pioneer Hi-Bred for operations including those in Southern Africa. It also pays for US-based GM corporations to undertake research projects in Africa in conjunction with local institutions. These efforts indicate an enormous degree of integration between USAID and the GM industry, such that the agency is seen to be an active promoter of the interests of the industry (Greenpeace, 2002).

USAID has also failed to pay for the milling of the consignments of GM maize destined for Southern African countries. Milling would cut the risk of potential GM contamination of local maize varieties, preventing the germination of GM seed and hence the possibility of cross-fertilization. Funding the milling would admit to the risks of contamination.

The agency fails to problematise the potential health risks. Head of USAID, Andrew Natsios, on a mission to the region, stated in Malawi that

I want to see if I can convince [President Mwanawasa] that GM food is safe for human consumption. GM food is exactly the same food the president of America and Colin Powell eat (AFP, Blantyre, 27.10.2002).

It has also employed the discourse of "accept GM aid or starve". At the World Summit for Sustainable Development in Johannesburg in August-September 2002, US Secretary of State Colin Powell provoked heckling and booing when he stated that "in the face of a famine, several governments in Southern Africa prevented critical US food assistance from being distributed to the hungry by rejecting biotech corn which has been eaten safely around the world since 1995" (Reuters, 6.9.2002). US Trade Representative Robert Zoellick blamed the European moratorium on GM for discouraging Africa from accepting GM imports:

"It gets much more worrisome when the European anxieties and fears and paranoias prevent starving people from getting food" (Reuters, 11.11.2002). US Under-Secretary of State Alan Larson, at a press conference shortly after Zambia's decision to reject GM food aid, warned that hunger-stricken Zambians would perish "simply because there was some misrepresentation of facts over the GM foods that had been donated. It is something that has begun to run the risk of having extraordinarily damaging consequences for some of the most vulnerable people on the face of the earth (*Washington File*, official publication of the US State Department, 4.9.2002, quoted in *The Monitor*, Lusaka, 6.9.2002). Newly appointed US ambassador to the UN food agencies, Tony Hall, said "If people die, there are consequences for the people who made the decision" (Reuters, 4.11.2002). This discourse is central to creating the impression that African governments have no choice but to accept GM food, castigates those leaders who reject GM aid as morally blameworthy, and attributes genuine concerns over GM contamination to European-inspired paranoia.

The same discourse emanates from a number of UN agencies which have embraced GM foods as safe, despite growing scientific evidence to the contrary. Closest to the US position is the World Food Programme of the United Nations (WFP). As the Southern African food crisis grew, it transpired that the WFP had, for some years, been providing GM food aid to African countries without their prior informed consent: Judith Lewis, WFP's director for Southern and Eastern Africa, claimed that all the famine-blighted countries had, in recent years, received US GM maize as part of food aid (*Mail & Guardian*, 15.8.2002). This was echoed in a statement by the head of the WFP, James Morris, that "there is no way that the WFP can provide the resources to feed these starving people without using food that has some biotech content" (SAPA-AP in *Mail & Guardian*, 25.8.2002). At its executive board meeting in October 2002, the WFP refused to adopt a policy critical of GM food aid. Sharma concludes that "the WFP...over the past few decades has for all practical purposes become an extension of USAID" (Sharma, 2002).

Other UN agencies were also quick to use the crisis to pronounce on the safety of GMOs. In a statement issued on the eve of the WSSD, the Food and Agriculture Organisation and the World Health Organisation announced their satisfaction that the US "had applied its established national food safety risk assessment procedures (and) fully certified that these foods are safe for human consumption...GMOs now being provided as food aid in Southern Africa are not likely to present a human health risk" (FAO, 27.8.2002). These agencies also felt confident that in Southern Africa, where there is no large genetic diversity of maize, outcrossing is "less of a concern" (*ibid.*) At a FAO press conference, director-general Jacques Diouf stated that "The UN believes that in the current crisis, governments in Southern Africa must consider carefully the severe and immediate consequences of limiting the food aid available for millions so

desperately in need" (FAO, 30.8.2002). His counterpart at the WHO, Gro Harlem Brundtland, endorsed the same statement, which was reiterated at the end of a WHO meeting on developing a health sector response to the food crisis (*Mail & Guardian*, 28.8.2002). Thus the discourse had been adopted completely by the UN agencies most closely related to the food crisis, almost as if USAID had written the script.

The discourse serves to indicate to Southern African leaders their supposed lack of choice in the matter. With extensive dependency of countries of the region on external agencies during the food crisis, it is not surprising that most countries in the region felt coerced into overlooking the risks of accepting GM food aid.

#### **iv. The risks of accepting GM food aid**

Very few of the countries of Southern Africa have established their own national biosafety regimes, nor have many ratified the Cartagena Protocol which establishes international procedures for managing transboundary movements of GMOs. The protocol also attempts to ensure that transit, handling and use of GMOs do not impact negatively on the conservation and sustainable use of biological diversity, nor create risks to human health (art. 4). A strict system should apply of advance informed agreement between exporting and importing countries (arts 5-12). Risk management procedures should be institutionalised (arts 16-17, annex III). This means that clearing houses, national authorities and national focal points need to be created (arts 19-20). Provision must be made for national capacity building, the creation of public awareness and public participation in decision making (arts 22-23).

Such institution building is demanding in terms of money and human capacity. Financial mechanisms available for this purpose, despite being provided for within the protocol (arts. 21, 28), have not been forthcoming, and the urgency of establishing biosafety mechanisms and institutions have, in general, been sidelined in the face of other pressing social and humanitarian priorities. Zimbabwe and South Africa, having larger scientific establishments, have been exceptions to this. Whilst the Zimbabwean Biosafety Board is relatively even-handed between competing interests, the South African biosafety regime is highly pro-industry. South Africa played an active role in negotiating the protocol, but has yet to sign or ratify it. Pschorn-Strauss and Wynberg claim that South African national biosafety legislation

is widely considered to be badly out of step with both the Constitution and the National Environmental Management Act, as well as legislation providing for access to publicly held information. Its provisions for the assessment and monitoring of environmental and social risks are wholly inadequate... Liability for any damages caused through the introduction of transgenic crops is placed on the user of the

product – the farmer or consumer – rather than the proponent of the technology (2002: 13).

Without the establishment of neutral scientific institutions to evaluate risks clearly, African governments have generally had a tendency to apply the precautionary principle. This principle takes account of potential but as yet unknown risks, allowing governments to err on the side of caution. This would allow time to build institutions and consider a common regional approach to biosafety.

Yet, increasingly, misgivings about gene technologies are being backed by more scientific evidence. The health risks are said to include “food allergies, chronic toxic effects, infections from bacteria that have developed resistance to antibiotics, rendering these infections untreatable, and possible ailments including cancers, some of which are yet difficult or impossible to predict because of the present state of risk assessment and food safety tests” (*ISIS Report*, 2.9.2002). Recent research funded by the United Kingdom government has shown that the DNA in GM foods can survive in human digestive systems and transfer to gut bacteria, creating the hazard of antibiotic resistance marker genes to pathogenic bacteria, making infections untreatable (Netherwood, et al., 2002). Jean Ziegler, former Swiss MP, and currently special investigator on food rights for the UN Human Rights Commission, has challenged the WHO’s assurances that there are no health risks from GMOs, and endorsed the evidence offered by concerned non-governmental organisations (NGOs): “All the nutritionists and the highly qualified biologists at these NGOs say there is a risk to the human body over the long term... and that we have not yet reached a security level” (Reuters, 17.10.2002).

The contamination of Mexican maize (Quist and Chapela, 2001) has revealed the potential risks GM releases pose to biological diversity. Yet the WFP, FAO and USAID “have shown little concern about the threat of contaminating local seed varieties” in Southern Africa (GRAIN, 2002: 15). For example, Andrew Natsios of USAID has gone on record as saying, “Starving people do not plant seeds. They eat them!” (*Guardian*, 7.10.2002). GRAIN responds by pointing out that even hungry farmers think of safeguarding the next harvest when they plant, and planting is almost inevitable (GRAIN, 2002: 15).

Countries in the region fear that GM contamination will prejudice trade relations. Namibia, for example, has taken steps to return consignments of South African yellow maize, for fear that its potential GM content would compromise its EU market for beef (Pschorf-Strauss and Wynberg, 2002: 18). “If we engage GMOs,” stated Zambia’s agriculture minister Mundia Sikatana in response to pressures from UN agencies, “our exports will be thrown overboard (and) that will cost Zambia thousands of jobs” (SAPA-AP, 25.8.2002).

Concerns also exist over the impact of GMOs on the question of food security. Although the industry claims higher yields and lower costs due to the inclusion of genes resistant to pests or drought, the scientific evidence for such claims has yet to be tabled. In fact, experience has shown that initial benefits are short-lived, that insects develop resistance to GM crops over time, that contractual obligations to purchase GM seeds every season keep costs high, and that monocropping results in a severe reduction of agro-biodiversity, which carries unforeseen costs to the grower. Increasing dependency on the GM corporations and credit institutions creates greater vulnerability, and higher risks of ensuring food security. Greater corporate control over food production – including through the assertion of intellectual property rights over modified living organisms – erodes community rights. In Africa, where small growers are essential for the guaranteeing of food security, community and farmers' rights need to be protected and not placed at further risk.

#### **v. Options and responses**

Given the extent of the potential risks to health, environment, exports, food security and community rights, of accepting GMOs, the precautionary approach would seem the most logical. However, the intense pressures that have been noted in Southern Africa served to undermine such an approach. The most vulnerable states proved to be Lesotho and Swaziland, both of which are now extremely dependent on AGOA – the US legislation which enables them to gain access to US markets. The sudden multiplication of garment sweatshops in these countries, often owned by non-nationals as a ruse to take advantage of new US entry quotas, speaks volumes for the quality and sustainability of jobs under these new legal arrangements. Leverage against other pressures from the US is vastly reduced, owing to the new dependency on the US market. It is therefore unsurprising that Lesotho and Swaziland, in themselves very small in terms of geography and population, have not placed any conditions on the importation of GM food aid.

Malawi, Mozambique and Zimbabwe have been more cautious in setting conditions for accepting GM food aid (on Malawi, see *Malawi Here News*, 5.9.2002). Each has opted to accept on the basis of prior milling of the maize, on the understanding that this would at least prevent potential contamination. Milling, however, carries certain costs, which USAID has consistently refused to bear, demonstrating a "take it or leave it" attitude. Apart from the costs of the milling process, there are added cost implications for packaging, transport and storage. In addition, the milled grain has a shorter shelf life – three months instead of ten – and is more vulnerable to infestation and delays in distribution.

The UK government estimates that milling adds US\$24 and fortification a further US\$8 per metric tonne (Greenpeace, 2002).

Given the US refusal to mill, South Africa took responsibility for doing so for 600 tonnes of maize delivered through its own ports. "We decided that we shall carry the cost of milling as part of South Africa's contribution to solving the problem," said President Thabo Mbeki at the Luanda summit of the Southern Africa Development Community (Reuters, 7.10.2002). Deliveries of GM grain to the port of Nacala in Mozambique experienced long delays in reaching inland Malawi, because Mozambique could not afford to bear the costs of milling, and Malawi's own facilities were insufficient.

Zimbabwe, which at first resisted the milling option, gradually succumbed to pressures to accept it. Its original stance of refusal had fed into existing patterns of demonising the Mugabe regime, rather than appreciating the dilemmas faced by the country's Biosafety Board.

Zambia, however, consistently refused to buckle under the considerable pressures placed on the countries of Southern Africa. In the first instance, the government consulted widely with broad social groupings, including NGOs, the farming community, traditional leaders, religious organisations and scientific opinion. Agriculture minister Sikatana, along with the minister of science, announced on 1 July 2002 that a decision would be made later by the national cabinet (*IRIN News*, 2.7.2002). The cabinet decided to commission the president's scientific advisor, Dr Moses Banda, to lead a team of government scientists to investigate the problem (see box). The team was received in the US, South Africa, the UK, and Norway and at the headquarters of the EU in Brussels. The team deliberated extensively and reported to the president on 23 October 2002. Six days later, President Levy Mwanawasa announced that the country would not be accepting any GM food aid (SAPA-AFP, 29.10.2002; *Guardian*, 30.10.2002; *Post*, 31.10.2002). Agriculture minister Sikatana told a news conference: "The major recommendation of the study team of scientists is that the government should maintain its earlier position not to accept GM foods in the country. Government has accepted this recommendation. We will not allow GM foods in Zambia" (Reuters, 30.10.2002). The Zambian government advised the WFP to remove 26 000 tonnes of GM maize that had been imported into Zambia without authority.



ZAMBIAN GM FOOD AID FACTFINDING DELEGATION, September 2002

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**Dr Goldon Bola**, Chairman, Medical Council  
**Mrs Agnes Angola**, Nutritionist/Dietician, Central Board of Health, Ministry of Health  
**Mr Godfrey Patrick Mwala**, Principal Agricultural Research Officer, Ministry of Agriculture  
**Mr Paul Chale**, Food Scientist/Private Entrepreneur in Food Processing

Why was it that Zambia was able to take this position in the face of the enormous pressures to do the opposite? A number of hypotheses emerge from this research:

1. Zambia had, for some years become increasingly reliant on her agricultural exports for earning foreign exchange. This was largely due to the collapse of the copper market (prices fell by 60% from 1976) and the subsequent demise of the copper industry, which had, for many years been the country's main foreign exchange earner (Moyo *et al.*, 1993: 273). Recent efforts to privatise the industry have failed, especially after the main investor, the Anglo American Corporation plc (previously the Anglo American Corporation of South Africa Ltd), made a decision to disinvest from all its newly re-acquired Zambian copper holdings (Craig, 2001; Ahmed 2002; *Mining News*, 27 March 2002).
2. Zambia's primary agricultural markets are in Europe. The EU moratorium on GMO releases and consumer resistance to GM imports played a large role in the country's decision not to risk its principal exports. Zambian fresh vegetables are highly visible in the supermarkets of a number of European countries.
3. Zambia played an important part in the Biosafety Protocol negotiations, and its negotiators had wide access to a range of opinions regarding the safety of GMOs. This included considerable contact with Ethiopian negotiators and access to information about the Ethiopian example, which had achieved extensive food security success in the previous few years, based on the revival and safeguarding of the interests of small-scale organic agriculturalists. Zambia has not yet developed a biotechnology and biosafety policy, nor has it passed legislation to deal with these matters. It has not yet ratified the Cartagena Protocol dealing with transboundary movements of GMOs. Meanwhile it intends to apply the precautionary principle. Dr Mwananyanda Lewanika, a government biochemist and member of the scientific delegation, declared: "I don't think we should permit GM in any form until we have our own regulatory mechanism set up" (*Guardian*, 17.10.2002).

4. Consultation with broad, influential constituencies within Zambian society – including those which clearly rejected GM imports – has assisted the current Zambian government to make its decision in order to maintain political support within these sectors of civil society. President Mwanawasa had achieved power under a cloud of suspicion about electoral fraud, and political divisions within Zambia had run extremely deep after his taking office. The question of banning GM imports was a daring assertion of Zambia's national sovereignty, and possibly part of an attempt to recuperate the president's personal standing within Zambia's urban elite.

5. Important elements of Zambia's scientific community had remained neutral with respect to GMOs, unlike the scientific establishments of South Africa and Kenya, which are close to the agro-biotechnology industry. Few biotechnologists in South Africa or Kenya have been able to demonstrate the same neutrality, since their research is compromised by receipt of research funds from the industry. Many are proponents of the industrial association AfricaBio, which is heavily sponsored by the large agro-biotechnology corporations.

6. The assurance that other options for feeding the hungry were readily available and could be implemented without undertaking the risks incipient in GM imports, made it possible for the decision to be justified. Although delayed, WFP was forced by the decision to appeal to other governments for non-GM food aid. Zambia was also able to source maize supplies from countries in Southern and Eastern Africa.

Availability of non-GM maize in the region was said to amount to over a million metric tonnes in October 2002 (see Table 3). This seems to have contradicted the notion that the only option for Zambia was GM food aid.

Table 3  
NON-GM MAIZE SOURCES IN AFRICA  
October 2002

Country	Exportable Maize Mt
Kenya	10 000
Tanzania	50 000
South Africa	1 020 000
Uganda	80 000
<b>Total available</b>	<b>1 160 000</b>

Source: FAO, Global Information and Early Warning System (2002), *Food Supply and Crop Prospects Report*, Rome: FAO.

Zambia was estimated to need 224 000 metric tonnes of grain to feed its hungry population up to March 2003, of which only 82 000 had been pledged by the WFP. The bulk of the deficit was to be found in the Southern Province, a grain-growing area.

7. Whilst maize is regarded a staple food in Zambia, agriculture minister Mundia Sikatana has pointed out that this is not universally true for the whole country. He has argued that Zambia has a long history of using cassava as a key crop for food security, especially in the Northern and North-Western provinces. Here, according to statistics issued by the National Association of Peasants and Small Scale Farmers in Zambia, there is a surplus of over 300 000 metric tonnes of cassava. Charles Banda, a Lusaka-based agricultural scientist, argues that donors insist on maize as aid because of subsidised overproduction for stockfeed: "WFP give us maize because that is what the farmers in the North grow and they have to keep them in business by buying up their stocks. Maize is not the traditional food of Zambians or even a native of the Southern African soil. It is an import from South America and that is why it is problematic to grow in Southern Africa. Our traditional staple foods are millet, cassava and sorghum." Zambian churches and NGOs are attempting to raise US\$59 million in order to purchase and distribute locally produced cassava (IPS, 2.1.2003). The recognition of the value of traditional crops for achieving food security also reduces unnecessary dependency on the agro-biotechnology industry.

8. Zambia has faced prior threats in which it has responded in terms of principle, often to its own short-term economic disadvantage. In January 1973, former president Kenneth Kaunda, in response to broad international demands for sanctions against Smith's illegal regime in Rhodesia, closed Zambia's southern border, and in solidarity with the majority of Zimbabweans, was forced to re-orient Zambia's economy which had previously been dependent on utilising trade routes to the south. Significant external support had to be sought to reverse this dependency, including China's financing of the Tazara railway to Dar-es-Salaam. Zambia played a considerable role in supporting liberation movements and boosting the role of the frontline states. This historical experience forged a great sense of national resilience.

In more recent times, the political elite has responded negatively to what it sees as unreasonable pressure from the United States during the food debacle. These pressures have been regarded as a challenge to Zambia's national sovereignty. Where the political elite has been able to resist this challenge, they have not shrunk from doing so.

## **vi. Consequences and lessons**

The impunity with which USAID and other arms of the US government and UN agencies insisted that the countries of Southern Africa accept GM food aid is an alarming development. In supporting the global positioning of the agro-biotechnology industry, it takes advantage of the vulnerability of some of the poorest countries in Africa, especially during a time of drought and food insecurity. The equation of "accept GM or starve" has been unmasked as faulty, ideological, and unethical. One can understand that agencies of the US state would seek to promote the position of powerful biotechnology corporations, but the same ideology seems also to have contaminated the agencies of the United Nations most concerned with the questions of food aid and health. This is one more step in the rapid corporatisation of the United Nations. Other examples of this include Kofi Annan's Global Compact and the question of Type II outcomes mooted for the World Summit on Sustainable Development which allow for 'partnerships' between business and other sectors of civil society, substituting for formal state environmental regulation. President Mwanawasa refuted the advice of the WFP, WHO and FAO to accept GM aid by claiming that their endorsements had been speculative, couched in terms like "not likely to present human health risks" and "not aware of scientifically documented cases in which the consumption of these foods has had negative human health effects" (FAO statement, 27.8.2002). Yet the same organisations had admitted that they had not carried out any formal safety assessments on GM foods, despite certifying

them as fit for human consumption. "We may be poor and experiencing food shortages, but are not ready to expose people to ill-defined risks", Mwanawasa stated, pleading that Zambians not be used as guinea pigs in the debate (Third World Network, 2002).

Zambia's expression of national sovereignty in the matter of refusing GM food aid demonstrates that the state, however weak, was still alive and potentially sensitive to popular rather than corporate priorities. The decision was taken in the face of strong imperial pressure, during a period of vulnerability, and in the absence of a functioning regulatory regime for biosafety. The vigorous nature of Zambian civil society, including the churches, NGOs and scientists, also played a role in questioning a GM future for the country, as did a number of concerned parliamentarians.

The food crisis in Zambia exposed its vulnerability in a stark manner. The pronouncements in Lusaka were not accompanied by swift enough action to avoid villagers looting stores of imported GM maize, stored inside the country as a result of the WFP's assumption that Zambia would relent in its decision (*Monitor*, 10.9, 24.9, and 27.9.2002). In addition, the WFP began to distribute GM maize inside refugee camps, until this was stopped by the government (*SABC News, Mail & Guardian*, and *BBC News*, 11.9.2002). President Mwanawasa discouraged talk of starvation, ordering the arrest of opposition MPs from the Southern province who claimed that people had begun to die of starvation (*SABC*, 9.10.2002). Nevertheless, the precarious infrastructure for food distribution was notable. In the Southern province, adversely affected by the drought, the overstretched officials and development NGO workers battled to redress the situation.

What are the lessons learnt from this situation?

Small countries can exercise their national sovereignty in the interests of food security and food safety and, within limits, resist imperial and other global pressures. A former frontline state, Zambia resisted economic engagement with Rhodesia during the UDI period, thus demonstrating a history of having made economic decisions on the basis of principle rather than convenience.

Together with the other countries of the region, Zambia needs to take steps to institute a food safety regulatory regime. This regime should be precautionary and sufficiently financed to make regulation of the industry effective. Some steps have already been undertaken by the fourteen nations which comprise the Southern African Development Community, to institute a regional food safety board. Ironically, SADC has received aid donations of US\$3 million from the United States Agency for International Development to cover fact-finding missions and training in the drafting of biosafety regulations. Given the partisan

nature of the US government on the question of biosafety, this aid should not be regarded as neutral. The US support should be offset with aid and advice from other countries less supportive of the US position. SADC needs to consider how the interests of the region can be safeguarded. In the case of Zambia, the National Institute for Scientific and Industrial Research is likely to become the regulator, and needs considerable resources to do the job properly. Model legislation, on community rights and on biosafety, prepared by the OAU Science and Technology division, needs to be debated and ideas integrated into respective national legislation. Special steps need to be taken to monitor and regulate the agro-biotechnology corporations, to make their strategies and operations in Africa transparent, and to inform all interested and affected parties of the risks involved in their promotion of GMOs. Whether at national or at regional levels, regulatory agencies need to be independent and impartial with respect to competing interests.

In line with this, Zambia and its SADC partners need to consider urgently the ratification of the Cartagena Protocol. This would release resources to build the full participation of Southern Africa's governments and civil society in the global regulation of movements of GM foods.

Zambia (and other vulnerable states in the region) needs to plan better against periods of vulnerability. Since droughts are endemic within the region, it is surprising that more steps are not taken to predict need and to plan accordingly. Numerous early warning systems are meant to be in place (Devereux and Maxwell, 2001: 215, Box 8.2) but these need to be harmonised and activated more effectively.

Given a 20% infection rate, the incidence of HIV/AIDS is likely to impact on many households, placing seropositive people, their children and older dependents particularly at risk. There needs to be a formal policy on the building of buffer stocks of non-GM maize and other staple grains, as well as improvement in the infrastructure for distribution and disaster management. During periods of food insecurity, priority needs to be placed on efficient decision making and infrastructural improvements, as well as ensuring harmonious inter-departmental co-operation at all levels.

The contribution of civil society organisations to the debate is an important one, and needs to be sustained. The state should allocate part of its aid budget to ensure the continuity of a participatory approach to policy setting and monitoring. The often neglected views of small farmers, rural women and the landless, who are most vulnerable, are crucial to creating food security and need to be heard.

Part of food security management should be the insistence that food aid donations be in the form of cash and not in kind, so that the resources are available to source aid at local level more efficiently. This strategy also acts against 'tied aid' and does not reward dumping. Sourcing foods locally and regionally is least disruptive to food production in the country and in the region.

There is a clear need for the United Nations and its agencies, particularly those relevant to these matters, to be overhauled. Confidence in global institutions will wane considerably if they are seen to behave as mouthpieces of narrow corporate interests. Southern African countries need to participate actively in efforts to reconsider the architecture of such international institutions.

It is exceedingly difficult to proscribe on the question of global ethics, especially in setting standards for the behaviour of powerful nations. Nevertheless, the complicity of the US government, the UN agencies, and the European Commission in pushing an unwanted, unregulated and potentially harmful technology on vulnerable nations, cannot be acceptable. Michael Meacher, the UK's environmental minister, addressing a briefing of parliamentarians on 27 November 2002, stated: "It's wicked when there is such an excess of GM food available, for GM to be forced on countries for reasons of GM politics...if there is an area where anger needs to be harnessed, it is here" (IPS, Lusaka, 2.1.2003).

Anger in Zambia was indeed harnessed, but in the rest of the region there is an uneasy silence. We have not yet witnessed attacks on GM crops, even though releases, which mainly occur in South Africa, are virtually clandestine, at odds with its rights-based constitution and environmental legislation (despite attracting government support), and multiplying at a rate of 50 per cent between 2001-2. The industry is well organised and has used activist-type techniques to gain support across the continent. In South Africa almost the entire scientific establishment has been seduced by the industry and special pleading has created a 'national biotechnology strategy' in which the state funds new commercial activities (Pschorn-Strauss and Wynberg, 2002: 1, 14; Kuyek, 2002a: 5). Whilst there are a number of NGOs and networks opposed to the industry, these are comparatively poorly resourced. With the increasing growth of popular civil society movements in the region, however, anger is sure to boil over before too long. Meanwhile different forces in the region are contesting the opening of the Pandora's box presented by GMOs. The region's food security depends on the outcome of these struggles.

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