

**Looking a Gift Horse in the Mouth:
The Case of Zambia's Refusal to Accept American Food
Aid**

By

Cassandra Bergstrøm

Noragric Working Paper No. 42
July 2007

Noragric
Norwegian University of Life Sciences

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Bergstrøm, Cassandra. Looking a Gift Horse in the Mouth: The Case of Zambia's Refusal to Accept American Food Aid

Noragric Working Paper No. 42 (July, 2007)

Department of International Environment and Development Studies, Noragric

Norwegian University of Life Sciences (UMB)

P.O. Box 5003

N-1432 Aas

Norway

Tel.: +47 64 96 52 00

Fax: +47 64 96 52 01

Internet: <http://www.umb.no/noragric>

ISSN: 0809-4934

Photo credits: Digital Vision

Cover design: Åslaug Borgan/UMB

Printed at: Rotator, Ås

TABLE OF CONTENTS

1. INTRODUCTION	1
2. BACKGROUND	2
3. HUMAN HEALTH	3
3.1. Debated Issues	3
3.2. Starlink™	6
4. SAFETY, RISK AND UNCERTAINTY	8
4.1. A Different Debate	9
5. AGRICULTURAL BIODIVERSITY	11
6. TRADE	12
7. WHAT TO DO?	13
8. CONCLUSION	15
9. REFERENCES	17

1. INTRODUCTION

Consider food. What it is? At its most basic, it is something we collect and consume to survive. It can be very simple – a grain, a tuber, or an animal. Often, however, food is quite complex. One reason for this complexity is that food is an important part of culture. Another reason is that the production of food includes different processes: planting and harvesting, storage, distribution, preparation and disposal. As production expands - from providing for the household to providing for central markets and again to exporting to an international market - safety issues and complexity also expand¹. At each step, new issues may emerge; issues associated with both the safety of the production process and of the final product. In addition, at each link there are potentially new actors who may both affect and be affected by these processes and their products; new actors with potentially different interests. Underlying any definition of food then are particular actors' interests in framing just what "food" is and is not and delineating how it can and should be used. These interests can include new ways of using food, a new technology used in its production or other interests entirely - such as interest in the environment. Food, then, is not merely an objective, static thing, defined and used in the same way by all consumers. If it were, regulation of it would be relatively straight-forward. Instead, food and food regulation have the potential to change and to awaken strong feelings and emotions in producers, consumers and other stakeholders. Food, then, is not only complex, it is also value-laden.

In order to understand and address food issues, we need to capture and incorporate these aspects of food. We need to include complexity, change and values about food in both our study of it and when designing a policy approach. This is not a traditional scientific approach; an approach that strives to be objective and that divides problems into small, independent pieces. While such a view of food and food safety has provided much insight, it has also contributed to development of diverse regulatory systems to address different aspects of food. These systems do not necessarily create a neat, unified regulatory harmony. The reason is simple: multiple arenas are used by diverse actors in attempts to promote their own interests (Bergstrøm 2005; Fowler 1994; Wiber 1993). Rather than harmony, this has the potential to create conflict. With respect to food, two important areas leading to conflict are food trade and food safety. These are addressed in local practices, national regulation and

¹ For an interesting discussion on the complexity of food, see Phillips and Wolfe (2001).

international agreements, including those within the World Trade Organization (WTO) and the World Health Organization (WHO).

The main focus of this paper is to consider these issues with particular emphasis on development, more specifically development in Africa. The example chosen illustrates the diverse interests of central actors and their differing ways of framing their interests. It is the case of Zambia and its refusal of American produced, genetically modified (GM) maize² during the food crisis in 2002. It is not the intention of this paper to provide a full account of the case. Rather, the example has been chosen to highlight the complexity of the issue, the integration of values and science, and the multiple rule regimes potentially applicable to those identifying themselves as stakeholders in the case.

2. BACKGROUND

In 2002, there was a severe food crisis in southern Africa. An international appeal was sent out concerning the need to feed 10.2 million people. The United States responded quickly and by August, 2002, they had provided 75% of the received donations. By the middle of 2003, it was expected that the United States would have provided half of the total donations to the area. Although they could have provided funding, the US chose to provide aid in kind: American-grown, whole kernel, yellow maize. In the midst of the crisis, many of the nation states of Africa raised question to the type of maize that was being provided. This was not a reaction to the fact that the US provided yellow corn, considered cattle feed in Africa, instead of the white corn Africans in this area customarily eat. Rather, concern was raised with respect to the provision of GM maize. This caused much debate. In the end, Zambia chose to bar the import of the American GM maize, although exception was made for its distribution within refugee camps provided that the whole seed was first milled. Swaziland accepted unprocessed maize. Zimbabwe, Lesotho, Malawi and Mozambique agreed to accept the maize provided it was milled before distribution. Further, Mozambique agreed to allow transport of maize through the country provided it was covered and milled (Bohannon 2002; Normile 2002; WFP 2002).

² GM is an abbreviation used to designate genetically modified organisms or food. According to the WHO, "Genetically modified organisms (GMOs) can be defined as organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally. The technology is often called 'modern biotechnology' or 'gene technology', sometimes also 'recombinant DNA technology' or 'genetic engineering'. It allows selected individual genes to be transferred from one organism into another, also between non-related species. Such methods are used to create GM plants – which are then used to grow GM food crops (2006)."

Zambia's decision to look the American gift horse in the mouth by demanding not only information, but the right to reject GM maize was highly controversial. It was discussed extensively in diverse fora including within: the UN World Food Programme (WFP), the UN Food and Agriculture Organization (FAO), the European Union (EU), national governments, and within many non-governmental organizations (NGOs). It also had broad media coverage. In addition, the case did not simply blossom and fade away. Zambia continues to claim its sovereign right to determine its food safety policy, particularly with respect to GM products. It continues to strengthen both its technical and regulatory capabilities to do so. Zambia maintains three main concerns around the import of GM maize³: human health, agricultural biodiversity, and trade. This paper, reflecting the debate itself, mainly concerns health although the other two topics are also mentioned.

3. HUMAN HEALTH

3.1. DEBATED ISSUES

The United Nations World Food Programme (WFP) estimated that more than 2,485,000 Zambians required urgent food relief in the 2002 crisis. WFP's role during a food crisis is to secure and distribute supplies. Their focus is on alleviating a short-term, emergency situation. With specific reference to the GM controversy, the WFP together with the World Health Organization (WHO) stated that, "the consumption of foods containing GMOs now being provided as food aid in Southern Africa is not likely to present human health risk. Therefore, these foods may be eaten." Comparing the risk of starvation against the risk of ill health being caused by GM maize, these major UN organizations urged Zambia to accept the US donations. Nonetheless, they also affirmed that it is the right of each nation to determine whether or not they would accept or reject GM food (WFP 2002).

The question of who decides is an interesting and highly relevant one. Once the world community is called in to help in an emergency situation, it may be asked if nations lose some of their legitimacy to determine policy within their own countries. Is it still justified for a country to qualify the type of aid it is willing to accept? Or from whom? On the other

³ In this case, the reference to "GM maize" is a general reference to maize that is likely to include some kernels from strains of bioengineered maize designed to be toxic to insects. The protein that has been included is *Bacillus thuringiensis* (Bt). The product is therefore often referred to as Bt maize.

extreme, do the people most affected have a right to be heard? The *New York Times* reports on local people demanding that seed already located within the country be distributed (Cavin 2002). These are the people seemingly most directly affected: they are the ones that were starving – but their voice - according to the *New York Times* – was hardly heard in the debate. These people were informed that the food was unsafe and therefore could not be used. Sitali supports the Zambian government’s decision to refuse the GM maize. He writes that NGOs and churches (which he represents) have an ethical responsibility that includes serving the most vulnerable and empowering those immediately affected (2006:4). Sitali argues that his evaluation of the situation will best protect these people. It is unclear from his report if this is his opinion: he does not refer to any polling of “the people”. His position is consistent with that of officials and scientists in Zambia – that this is the decision that will protect the long-term needs of the people. In Aug. 2002, however, Min. of Information and Broadcasting Services, Mr. Zimba, informed that the government’s decision to ban GM maize was made after consulting with “Zambian farmers, academicians and researchers, seed suppliers, traders, opposition political parties, government technocrats, civil society, churches, chiefs and the general public⁴ (Zimba 2002).

The main objection raised by the Zambian government is that GM maize is potentially a human health risk. Focus is put on the uncertainty around GM maize – on what is not known, on questions that have not been answered and even on questions that have yet to be asked. The Zambians were hardly working from a position of strength having only limited expertise and no regulations concerning the import of GM products. In fact, it can be argued that it was the catastrophic event that forced Zambia to take a stand on this issue. Up to this time, the practice was that there were no rules. South African GM maize products, for example, were to be found on grocery shelves in Zambian stores (Manda 2003). The regional food crisis and the ensuing debate made the issue visible and forced each of the involved nations to take a standpoint.

Zambia chose to acknowledge their position as well as the uncertainty surrounding the entire GM food debate. In a public release, Zambian Minister Zambia, reported that,

In light of uncertainties surrounding the likely consequences of consuming GM foods, government has decided to take the

⁴ See also Lewanika for a discussion of who was involved in the Zambian process (2003).

precautionary principle⁵ on this matter. In the absence of a national biotechnology and biosafety policy framework as well as inadequate national capacity to deal with GMOs it would be risky for the country to receive GM products. The acceptance of GMO maize in the light of absence of evidence of its safety on human health would pose a danger to the lives of our citizens and environment. The immediate possible threat of contaminating local indigenous and hybrid seed stocks would also be another serious risk posed by GMOs (2002:18).

Underlying the Zambian position, president Mwanawasa stigmatized GM maize as “a poison” and further stated that given the uncertainty, he refused to allow his people to be used as “guinea pigs” (Bohannon 2002; Manda 2003). It may be assumed that such strong labels from the national leader helped to quell local dissatisfaction at not being able to use the American maize locked in Zambian warehouses.

Countering the Zambian position, the United States ensured the global community that GM maize was safe. The US Food and Drug Administration (FDA) repeatedly point out that Bt maize had been and continues to be eaten by millions of Americans and Canadians without any reports of illness. A most recent example of this is found in the U.S. statement made following the outcome of the World Trade Organization (WTO) dispute settlement concerning the import of GM food to Europe, where Ambassador Allgeier says, “Food and animals feeds produced from biotech crops are safe and widely used around the world. Biotech crops help nourish the world’s hungry population, offer tremendous opportunities for better health and nutrition, and protect the environment by reducing soil erosion and pesticide use” (2006). Marc Cohen, an analyst at the International Food Policy Research Institute in Washington reports that years of extensive testing had not revealed any indication that such food is unsafe for people (Cauvin 2002). On 23 Aug. 2002, the WFP, FAO and WHO issued a joint statement “expressing confidence that GM food was safe” (WFP 2002).

⁵ In 2002, the precautionary principle had been forwarded under the Rio process in both Agenda 21 (UNCED 1992) and in the Convention on Biological Diversity (CBD) (UNEP 1992). On 29 January 2000, the Conference of the Parties (COP) of the CBD adopted the Cartagena Protocol on Biosafety as a supplementary agreement. It came into force on 11 September 2003. The Cartagena Protocol refers specifically to the potential risks associated with living modified organisms (LMOs). Within the body of the document, reference is made to “a precautionary approach” (CBD 2007). The precautionary principle, or a precautionary approach, recognizes that our world is full of risks. Recognizing that risk introduces uncertainty, the approach is meant to safeguard against serious and irreversible harm to the environment (including humans) (COMEST 2005). With specific reference to this case, Zambia’s president argues that health studies of GM food are inconclusive (Bohannon 2002:1133-34).

Nonetheless, some question is raised to the American position given their regulatory system. According to Benbrook, an American scientist consulted by the Zambians, Bt maize was regulated in the United States as cattle feed. In the application for approval, it was stated that 98% of the seed would be unprocessed and used as animal feed. It was not, therefore, subject to tests for human health safety (2002). Testing for human health would have been conducted by a different agency (the FDA) and been much more rigorous. Further, Benbrook points out a number of additional points of uncertainty related to health with respect to the African case. First, while corn provides only a minimal fraction of the American diet, it is used differently in southern Africa. In southern Africa, cooked porridge can be served several times a day, and may be the only food eaten in times of scarcity. In addition, those people suffering from malnutrition and/or sickness may react differently to this maize than an average American. This is a relevant point when the targeted population has been suffering from malnutrition during a food crisis. Finally, Benbrook asserted that antibiotic-resistant genes present in the GM products could, in principle, be incorporated into the genomes of gut flora and that they then could promote drug resistance. It has also been argued that this has the potential to increase resistance to antibiotics and therefore reduce immunity to disease. In a region suffering from high incidence of HIV/AIDS this is considered particularly troubling. Further, gene modifications have the potential to introduce allergens from one species into another and may introduce new food toxins (ibid.; Bohannon 2002; Lewanika 2003). Benbrook's main point, therefore, is that because the extreme differences of context (how food is prepared, how often it is eaten, who is eating it, what the state of their health is) there may well be differences in how people react: the risk of these different possibilities is uncertain.

3.2. STARLINK™

Taken out of context, the vehemence of Zambia's position may be difficult to understand. How can a president of a nation override the immediate and dire needs of his people given only the potential of a future threat – and against the advice of international aid agencies? The international food crisis in southern Africa was indeed a concrete event. But it was not an isolated one. Another central event affecting the interests, attitudes and beliefs of Zambian leaders, as well as other actors in this debate, became widely known in the year prior to the food crisis, 2001. It is the case of the GM corn variety Starlink™ being discovered unexpectedly in human food.

Taylor and Tick, of the Pew Initiative on Food and Biotechnology, provide a report on the Starlink™ case meant to contribute to public and private debate (2001). Among other things, the report provides a detailed timeline of events in the case. The following information is taken from this report. In September of 2000 it was disclosed that the corn variety Starlink™ had been detected in human food in the United States. Starlink™ is genetically modified to produce its own pesticide, Cry9c. At the time of its approval, question was raised as to whether Cry9c was a potential human allergen. The Environmental Protection Agency (EPA) approval was therefore limited to animal feed and industrial, non-food use. The disclosure of findings of Starlink™ on grocery store shelves, in processed food products, raised a number of biosafety issues among American consumers - the most important ones concerning human health and regulatory measures.

In the wake of the findings, there was an immediate governmental response to contain Starlink™. But the job was difficult as there was no tracing mechanism put in place to track grains throughout the production process. Despite extensive recall efforts, reports continued to come in of findings of Starlink™. Large grain suppliers reported that they were unable to certify that their corn was not mixed with genetically modified corn. Findings of Cry9c in imported corn products were not restricted to the US but were also made in Japan, Canada, South Korea and Mexico. In March 2001, the USDA reported findings of Cry9c in non-Starlink™ maize intended to be planted in 2001. The USDA responded with a plan to purchase this seed from small companies at a cost of between \$15-20 million. In April 2001 it was disclosed that at least 78 U.S. seed companies found some degree of Cry9c in their seed. In July, 2001, Starlink™ was reported to have also been found in a white corn product, this despite Starlink™ being a yellow corn. In a meeting of the EPA, on 17-18 July 2001, it was reaffirmed that there is a medium likelihood that Cry9c is a potential allergen. And, it was reconfirmed that the available information was at the time currently inadequate to maintain that exposure would not be harmful to humans (SAP Report No. 2001-09 in Taylor and Tick 2001). In a response to the Starlink™ incident there were reports that some American farmers began to establish systems to document a “chain of identity” from planting through production: “identity-preserved” products would ensure consumers of GMO-free food. In a release from the American Corn Growers Association in Dec. 2001 – over half of grain elevators in USA were reported as requiring segregation of GMOs from non-GMO varieties (2001).

In summary, Zambia, as the rest of the world, had been provided with evidence that the US regulating agency had determined that American-grown yellow maize could potentially be harmful to people's health, that in about half the grain elevators in the US GM-maize was not segregated from non-GM maize and that despite regulation that required segregation of animal feed from human food – in practice seed had been mixed. The high incidence of seed companies reporting some degree of Cry9c in their seed also raised question to whether or not there had been gene flow between maize varieties.

4. SAFETY, RISK AND UNCERTAINTY

There are many different ways of evaluating and measuring risk. The Procedural Manual of the Codex Alimentarius Commission⁶ provides a list of definitions of the most commonly used terms with relation to food safety (FAO 2006). Risk characterization is defined as, “[t]he qualitative and/or quantitative evaluation of the likely intake of biological, chemical and physical agents via food as well as exposures from other sources if relevant.” In other words, risk characterization defines a problem in a particular way such that it is possible to then go about measuring it. The method works well enough where there is scientific agreement about how to define a problem. It is more problematic in cases where there is scientific uncertainty and in cases where there are significant differences in opinion among potential stakeholders – as is the case with GM products. In such cases, there is increasing agreement that it is important to include all potential stakeholders in the risk analysis procedure. According to the Codex Manual, risk analysis is defined as, “[a] process consisting of three components: risk assessment, risk management risk communication.” The different components of risk analysis are included to ensure stakeholder involvement in the process⁷. In the Zambian case there was also reference to risk comparison – comparing, for example, the risk of dying in a food crisis to the risk of eating GM maize. But many actors did not accept the comparison being forwarded - that the only options available in this situation were GM maize or starvation. None of the approaches to risk have provided results that were unequivocally accepted by all parties. In the Zambian case, for example, president Mwanawasa underlined

⁶ “The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations” (FAO/WHO 2007).

⁷ For an interesting discussion of differences in risk approaches to GM crops taken by the US and the EU, see Tait and Bruce 2001.

that there was both uncertainty with respect to health and lack of a regulatory system in Zambia (see also Lewanika 2003). This raises the importance of context in the question of evaluations and measurements of risk. The differing contexts of GM food in the United States where consumers have a possibility to choose between a range of food products and that in Zambia where people would be forced to use GM maize as a staple, perhaps as the only food product, are significant. In addition to the health risk, the potential long-term risk to the environment are also different given the context of a country without a regulatory framework, with limited human and capital resources available to address the issue and with a public composed of many individuals with limited educational backgrounds. The capacity in such a context to manage identified risks is highly limited⁸.

4.1. A DIFFERENT DEBATE

Context can also be something more. Not only is there a question of what questions are being asked, there is a question of who it is that is doing the asking: who defines and delineates what it is that is being debated? Reports on the southern Africa food crisis made it poignantly clear that there were individuals dying from lack of access to food. Clearly, the immediate problem was catastrophic for those directly affected. But “the problem” was not only a short-term one to be addressed by the provision of food aid. Many humanitarian NGOs chose to present an alternative perspective to this crisis in order to draw attention to the longer, more enduring context. Their view was that it was impossible to see the food crisis as an isolated event. Instead, they argued that crop failures were not only a consequence of adverse weather conditions but also of internationally induced Structural Adjustment Programmes (SAPs).

SAPs were introduced in the 1990's by the World Bank and IMF. Among other things SAPS introduced liberalization policies to the agricultural sector – phasing out of maize subsidies, liberalizing maize markets, ending government procurement of agricultural inputs, limiting bank credits and removing tariff bans. These policies had immediate effects on both the potential and the interest of farmers to produce maize (Lewanika 2003). Among other things, maize reserves were sold off in the belief that the market should provide in times of scarcity. According to Sitali, “[t]he food shortage of 2002 was a consequence of shortfalls caused by successive seasons of flooding and drought and by the cumulative effect of inadequate

⁸ For a discussion of some of the problems faced by developing countries in relation to biosafety, see WHO (2004).

government agricultural policies. Certainly, the debate [about GM maize] was not only about how most effectively and equitably to meet the immediate hunger situation, but also about how most efficiently and solidly to promote long-term sustainable agriculture (2006:2).”

In the words of the PEW report,

It is one thing to discuss the impact of a new agricultural technology on a society that already produces abundant, safe, diverse, and affordable foods; where farmers have experience with technology and access to capital for technology investments; where public and private research and development meet evolving agricultural need; and where a well-developed regulatory system is in place. It is quite another question to understand the net impact of the technology in a society that fails to produce enough food to feed its people; where one or a few foods dominate diets; where farmers lack the basic infrastructure to transport, store and sell the food they do grow; where farmers lack the income and access to credit necessary for investments in technology; where little public or private investment exists for developing appropriate technologies: or where there is little, if any, capacity to manage possible risks associated with the technology. These broader social and economic factors may have as much to do with the potential impact of biotechnology as the narrower issues of specific benefits and risks (2004: 8).

In this broad perspective, health is a long-term issue. It encompasses not only direct questions of the risk of allergens in maize, but the potential of a people to provide food for themselves. It is question of food security. According to the FAO, food security is “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (2002). Genetic Resources Action International (GRAIN), an international non-governmental organization promoting sustainable management and use of agricultural biodiversity writes, “the issue is not whether a few sacks of GM maize are going to make people in Southern Africa keel over and die, but whether the international community is really bent on helping African farmers support their families, their communities and their integrity” (2002). The concept of food security is meant to draw attention not only to immediate needs, but underlying causes of hunger including equitable distribution, access to markets, lack of infrastructure and poverty. An alternative in the food crisis of 2002 would have been to provide funding that would have allowed Zambians to purchase foodstuffs on the open market. This would have allowed the Zambians to access non-GM-maize known to be available in Zambia, southern Africa and even in grain elevators in the US (Lewanika

2003). This would have supported the entire food system. It would have included a perspective on both the short- and long-term food security needs of the area.

5. AGRICULTURAL BIODIVERSITY

Although health was the central topic in the GM debate, it was not the only one. Another issue raised by a number of actors was that of the potential threat to agricultural biodiversity. Maize is grown as a staple food in large areas of southern Africa. Although not a centre of origin, there are many locally produced varieties. These have been developed by local farmers over many generations as being particularly suitable to the local environment and the tastes and needs of the local people. There is a potential for gene flow between GM maize and native varieties found in Zambia. This flow would not be controlled. It is therefore not possible to know if expressed traits would be beneficial or not. In evaluating this threat, Benbrook states that, "...the movement of biotech traits into your varieties will almost certainly not be of practical benefit, since levels of expression and the consistency of expression will be inadequate to provide farmers with a meaningful level of insect control. Indeed, it is more likely that gene flow will create some unexpected, and under certain circumstances damaging, physiological growth problems, or perhaps impairment of natural plant defense mechanisms (2002)." This is the reason that many of the countries accepting food aid demanded that the maize be milled. But their request – as straight-forward as it appears - was not as easy to carry out in practice as on paper.

Much of the US whole kernel maize was already lying in warehouses in Africa awaiting distribution. According to --, who worked with Plant Protection in Malawi at the time of the crisis, the concern raised was merited. He tells that although an agreement was made that all of the seed coming into Malawi would be milled, in fact Malawi has no central milling facilities. Therefore, whole seed was distributed throughout the country with instructions that it be milled locally. But there was no enforcement with these instructions. Traditionally, farmers set aside seed to ensure that they can plant in the following growing season. Some farmers therefore chose to store portions of the whole seed and plant it the following season: some chose to carry it over the national border and plant it in Zambia. Today traces of GM maize are to be found in both countries (Mwase, 2006). Similar findings have been reported in the maize center of origin, Mexico, following provision of American grown maize as food

aid (GRAIN 2002:2; Patel 2002; Raven 2005). That practice is found to differ from policy is not uncommon. In this case it underlines that risk management differs with context, a fact recognized in the Human Development Report where they write, “Whether or not [GM] harms could possibly occur is a matter of science – but if the possibilities are real, the extent to which they become risks depends on how the technology are put to use. Debates today, however, sometimes proceed as if risks about specific products can be isolated from the context in which they occur (UNDP 2001:66)”.

The question of agricultural biodiversity is interesting in itself. Although not often referred to in this acute case, agricultural biotechnology has a number of potential benefits including the reduction in the use of chemical inputs including pesticides and fertilizers, the potential to enhance nutrition and the potential to target particular environmental areas such as those affected by drought and salinity (Pew Initiative on Food and Biotechnology 2004). But, it is perhaps not the agricultural diversity in and of itself that was of the most interest to Zambia. Arguably, the most compelling reason that Zambia was concerned about the potential for GM seed to cross with native varieties had to do with trade.

6. TRADE

Again there is reason to look to a larger context. The Zambia case arose in the middle of a major controversy between the US and the EU concerning constraints to trade GM products in Europe. Findings of GM maize in Zambian produced agricultural produce would restrict the Zambian possibility to export beef to the European Union, Japan and other nations that have restrictive GM policies (Benbrook 2002; Cauvin 2002; Europa 2006).

The question raised here offsets the right to free trade with the right to food safety. These interests are debated within the arena of the World Trade Organization (WTO). Historically, the USA, supporting its international seed companies and large farmers, has opened for the development and sale of GM products. The EU has been far more restrictive. The EU has chosen to focus on the regulation of the process rather than the product. Heavy lobbying by citizen groups has led to highly restrictive policies concerning the import of GM products. The EU is an important market for Zambia, one that Zambia is not interested in losing. Without a regulating body and the means to enforce such regulations, allowing US maize into Zambia was seen as effectively ruling out the potential for Zambia to export its products in

the future to the EU and other countries with restrictive policies. Lewanika points out, “[t]he first concern is that Zambia does not have a biosafety framework that would regulate the introduction of GM organisms,” (in Normile 2002:1154).

The question of trade is a major one – although it is only briefly discussed here. As in the previous examples the issue of context is important. The question of which arena should be used to debate such issues is also central. Posed as a question of free trade, the WTO becomes the central arena. Posed as a humanitarian crisis or a development issue, the UN system is central. The interests and values of these different arenas vary widely. On the one hand, the WTO works to open barriers to trade enabling globalization where major industries, including seed companies, have been able to flourish outstripping some developing countries in terms of their total economic worth. On the other hand, the UN system is working towards agreed to Millennium Goals of which eradicating extreme poverty and hunger is number one on the list (UN 2005).

7. WHAT TO DO?

Zambia was faced with a major dilemma - they had diverse information presented by different stakeholders each speaking out from their own beliefs, values and interests. In September of 2002, a seven person delegation from Zambia representing both civic groups and scientists travelled to the United States, Europe, India and South Africa to collect information in order to make an informed decision as to their policy with respect to GM maize. The group was sponsored by the United States Agency for International Development (USAID). They spoke with both scientists and government officials (Normile 2002). Most of the content of this trip is unavailable the public. One exception is the transcript provided by Dr. Benbrook of the Northwest Science and Environmental Policy Center (2002). In his letter to the Zambian delegates, delivered to them during their meetings in Washington DC, Benbrook informs them that, among other things, there is no shortage of non-GMO foods (ibid.). They received the same information during their visit to Norway (pers. com. 9.2002). In addition, the leader of the group, Lewanika, reported that the group found that the long-term effects of the modified maize had not been studied (Normile 2002). The findings of the Zambian delegation strengthened the resolve of the Zambian government to prohibit the import of GM products.

During the past five years, Zambia has continued to strengthen its stance – introducing policy and financing scientific development that demonstrate serious commitment. The Ministry of Science, Technology and Vocational Training has introduced biosafety regulations, the “National Biosafety Framework”. According to Zambezi, permanent secretary to the Zambian Ministry of Science, the implementation of the Cartagena Protocol and the establishment of a National Biosafety Authority will help the country to regulate and monitor GMOs. These are part of a five year strategy plan that aims to both initiate biosafety research and biodiversity protection – with the ultimate aim of making and keeping Zambia GMO-free (2004). In addition, the five year program includes the building and manning of a scientific center, the Zambia National Institute for Scientific and Industrial Research (NISIR), with a new laboratory to control and maintain national health standards and maintain a sustainable environment⁹. Their intention is to qualify as a Biotechnology Centre of Excellence, a recognition extended by the Science and Technology Secretariat under auspices of the New Partnership for Africa’s Development (NEPAD) (Mayet 2005).

In a statement following the recent WTO decision concerning the EU’s GM policy¹⁰, Zambian Agricultural Minister Sikatana was reported as saying, “We do not want GM food and our hope is that all of us can continue to produce non-GM foods. The decision by the WTO does nothing to change our stand in this matter.” The claim echoes claims of the EU that underlines the sovereign right for a nation to determine its own food safety regulation as long as these regulations are the same for all and are transparent.

⁹ This is a collaborative effort made between NISIR and the Norwegian government. Norway has supported the program with \$330,000 over a five year period. The grant covers both building and training costs. The collaborative partner in Norway is the Directorate of Nature Management (TWN 2005).

¹⁰ On 7 Feb. 2006, the WTO panel ruled that the European Union’s moratorium on GM products that had been effective during the period June 1999 through August 2003 was illegal (WTO 2006). The dispute was initiated by GMO producing nations Argentina, USA and Canada in May 2003 concerning obligations set out in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS). These countries claimed that their farmers were losing millions of euro in lost sales. The panel found that in suspending approval of biotech products, the EU had adopted a de facto moratorium on the final approval during the period. They did this without reference to scientific or regulatory justification, as is required in the SPS. The US stated that the panel decision illustrates “the successful operation of a rules based trading system” (Allgeier 2006). Peter Power, spokesman for trade issues for the European Commission, states that the decision is purely historical – concerning how the EU system operated prior to the introduction of a new set of rules in 2004 (Schomberg and Smith 2006). The WTO report has rejected claims that the current regulations, which are very strict, are illegal. Furthermore, the panel’s report has refused to take a stand as to whether or not biotech foods are safe.

5. CONCLUSION

With respect to GM policy, Zambia has chosen its own path and is developing the technical expertise, the institutional capacity and the regulatory framework necessary to enforce it. The United States has also chosen its path – supportive of international business interests and large farmers. Sovereign rights recognize the rights of individual nations to determine their own policies. Sovereign rights are limited when nations agree to collaborate internationally as they do in both the WTO and the UN-based CBD¹¹. Nonetheless, international agreements acknowledge differences between nations – both in terms of potential value differences and in terms of capabilities.

The paper provides examples of instances where both the context of particular events – and much wider contexts – affect situations. In the Zambia case we see different actors defining both the food crisis and the possible ways of responding to it in different ways. This underlines the complexity of food and food safety issues. The question of GM products, in this case GM maize, is not simply a question that can be resolved through a risk analysis of a limited number of problems. Two important reasons for this are scientific uncertainty concerning both health and environmental aspects of the process of producing GM food and evaluations of the product produced, and different values among those identifying themselves as stakeholders in the case.

The case raises question to who it is that participates in the debates, who defines the issues and who delineates which rules will apply? Who defines what is at stake and which time frame is relevant? We see that rules and regulations overlap – between nations as well as between international fora with responsibility for food and food safety. We also see differences in approaches to risk in cases, such as this one, with strong elements of uncertainty.

The Zambia case provides a clear example of how both complexity and values influence the decisions made by different stakeholders in reference to the same case. In such cases, there is not a right and a wrong answer. We simply do not know. Instead, we see the importance of sharing of information among and between stakeholders. While stakeholders may not agree

¹¹ As of the writing of this paper, the United States is not a signatory to the Convention on Biological Diversity.

with another, the transparency enabled by the sharing of information allows for understanding of one another's position. In situations of conflict this provides a basis for negotiations – although where the negotiations will be carried out remains unclear. The economic might of internationally strong actors is not almighty – as this case illustrates: there remains room for maneuver. Having looked the American gift horse in the mouth, Zambia found that acceptance of it would have long term costs that they were unprepared to accept: rather than put this horse out to pasture, it was shot instead.

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