# Social Ethics for New Technologies: The Case of DuPont in Brazil.<sup>1</sup>

# Margaret Griesse Visiting Professor of Business Ethics UNIMEP – Piracicaba, Brazil

#### Abstract

This presentation argues that the conditions for arriving at sophisticated ethical decisions should allow for multiple inputs from various stakeholders. In this case, ethics is considered as a social process rather than an individual question of integrity. The case of DuPont shows how the commercialization of the new technology of genetically modified organisms has produced controversy in which each interest group attempts to win the battle either for or against the new technology. Each interest group or stakeholder is limited by its position and particular interest which also limits its ethical stance. The article proposes a policy of forums and instances for negotiations and discussions among stakeholders as a way of achieving a more complex and adequate ethical decision.

## Introduction

Rapid advances in technologies and their commercialization have provided little time for thoughtful consideration of their ethical implications. Net technologies, biotechnologies, and robotics are a few of the areas of development whose products could significantly change the way we relate and communicate with each other, work and use natural resources, thereby forging us into uncharted ethical spaces. In an effort to provide a framework for thinking ethically about new technologies, I would like to offer a case study which examines the ethical dilemmas brought on with the introduction of a new biological technology. While biological technologies differ widely from other new technologies, they bring up some of the same basic questions regarding ethics. The emergence of these new technologies requires us to revaluate theories on ethics and ask questions regarding the proliferation of these new products and practices associated with them. How should businesses proceed when laws or guidelines do not adequately address the issues or the new circumstances produced with these technologies? Is there a difference in how developing countries might view and make use of these new technologies in comparison with northern countries? What procedures should

<sup>&</sup>lt;sup>1</sup> This paper is based on a previous articles by the author: Griesse, Margaret . Developing Social Responsibility: Biotechnology and the case of DuPont in Brazil. *Journal of Business Ethics*. 73: 103-118, 2007.

governments, social movements, scientists, and businesses follow when developing and approving new technologies? What are the new issues that arise as these technologies develop?

My conclusion in this case study speaks to new technologies in general. If we are to develop sophisticated ethical decisions, we must consider ethics as a social rather than individual process. This does not mean that ethics is not an individual matter. To be sure, our Methodist-related colleges and universities are focused on forming ethical young adults as part of their mission and such efforts should be applauded and supported. Integrity and high ethical standards is an individual developmental goal (Kohlberg et.al. 1983). However, we cannot depend on individual ethics when developing social policy on new technologies. While in the United State we often celebrate the ethical hero who goes against the grain to do what is right, we cannot expect the company CEO, the government official or even the community activist to transcend their personal or group interests and make decisions based on the greater good. Rather our task is to create conditions for ethical decision making whereby all interests are evaluated and consensual proposals are developed. In what follows, I will present the controversy over genetically modified seeds in Brazil to exemplify the complexities of this process.

#### Stakeholder Analysis of Genetically Modified Organisms in Brazil

The controversy over genetically modified seeds (GM seeds) in Brazil can be divided into two basic issues. The GM seeds that we are discussing in this article are those which cannot be produced in nature. While human kind has been producing hybrid seeds for centuries, new biotechnologies offer us seeds that cannot be produced through natural means. The introduction of new agricultural biotechnologies has raised a number of concerns regarding the safety of the product for human or animal consumption, the effects the product might have on the environment, and the moral question of patenting seeds. Second, only large multinational corporations have been able to make the required investments for research and commercialization. This has resulted in only a handful of companies owning most of the patents on these organisms. DuPont, for instance, has the largest number of patents of GM seeds. Proponents have argued that the use of these seeds will stimulate agricultural development, provide more abundant harvest, offer nutritional benefits and diminish the use of agrochemicals. Others argue that the control over cultivation and food supply by just a few companies will inhibit free choice and stifle innovation.

A stakeholder analysis of this controversy reveals a number of interest groups: Brazilian agribusiness, ecologists and farmers; DuPont and other GMO seed companies; consumers; scientists and academic institutions; civil society organizations; foreign markets. In what follows, we will examine the position of each one of these groups.

#### Brazilian agribusiness

The most prominent player in this scenario is Brazilian agribusiness. Agriculture is responsible for 33 percent of the Brazilian GNP, 42 percent of total exports, and 37 percent of all jobs. Brazil is the world's primary producer and exporter of coffee, sugar, alcohol, and fruit juices. It is second only to the United States in soybean production. Unlike the United States and Europe, Brazil has high potential for growth in agriculture. Projection indicates that it will become a primary producer of cotton and biofuels made from sugar cane and vegetable oil. Other agricultural products include corn, rice, fresh fruits, cocoa, and nuts (Ministério da Agricultura, 2004). Thus agribusiness plays a pivotal role in the Brazilian economy.

## Farmers

Individual farmers are interested in the high productivity that the GM seeds promise as well as the reduced price in nontoxic agrochemicals that are coupled with the seeds. Before GM seeds were allowed in Brazil, many farmers were found smuggling seeds from nearby Argentina. In some states, farmers have agreed to stay away from GM crops in order to find a market niche. Those against GM seeds argue that farmers will become more dependent on large transnational corporations because they will be induced to continually buy the seeds and corresponding agrochemicals from the corporation. Along with this, farmers are required to pay royalties on the intellectual property rights of the seed. This technological package may be too expensive for small farmers who would be forced to leave their farms causing increased rural exodus, unemployment and social exclusion. Along with this, farmers who replant seeds without paying royalties are subject to fines. (Guerrante, 2004). Proponents argue that fewer toxic materials will be used on GM seed crops, thereby favoring the environment. GM crops will result in lower costs to farmers because they will not have to pay as much for agrochemicals. Higher production and the ability to cultivate land that was previously inadequate for agriculture are other potential benefits of GM seeds (Brazilian Association of Biotech Companies, 2006).

#### **Ecologists**

Ecological concerns have also entered into the debate. Brazil is believed to contain the richest sources of genetic and biological diversity in the world. Estimates indicate that the Brazilian territory holds 10 to 20 percent of the world's total plant and animal species (Mittermeier et al., 1997). Despite these numbers, this diversity is largely untapped, while agriculture is primarily done with non-native species. To protect its biodiversity, Brazilian legislation has enacted laws regulating plant security, agricultural policies, rights and obligations of industry, crop protection, exotic species importation prohibitions, protection of the forests and fauna and crimes against the environment (Medina, 2002). Brazil is also part of the Convention on Biological Diversity and signed the Cartagena Protocol on Biotechnological Security, which was ratified in 1994. The Protocol calls for the creation of a national strategic plan on biodiversity.

# DuPont

The interests of DuPont are closely related to the commercialization of GM seeds. Since 1999 DuPont has been investing in life science products and has acquired the largest number of seed patents. This has not always been an area of interest for DuPont, which has gone through a number of transformations during its 200-year-old history. A brief look at the history of DuPont, offers us a better understanding of who this stakeholder is.

DuPont was founded as a gunpowder manufacturer in 1802 and became the leading supplier of black powder to the U.S. government by the beginning of the War of 1812. During the Civil War, it supplied almost forty percent of all powder to the union. In 1880 DuPont began experimenting with other types of explosives and by 1920 it was the world's leading producer of dynamite and the largest supplier for WWI. In addition to military purposes, DuPont explosives were used by the mining and railway industry during the United States westward expansion (DuPont, 2003). In 1912, an antitrust suit against DuPont's monopoly on explosives pushed the company to turn increasingly from explosives to chemicals, with a variety of products such as synthetic textile fibers, paints, varnishes, plastics, and heavy chemicals. In the 1940s the corporation launched an advertising campaign to promote DuPont's contribution to daily life with the slogan "Better Things for Better Living . . . Through Chemistry." (ibid).

However in 1962, Rachel Carson's Silent Spring shocked the world with its revelations on the chemical contamination of the planet. It described the harmful effects of herbicides and insecticides, many of which DuPont was producing. Protests against the use of herbicides in Vietnam targeted the United States government and chemical companies. By the late 1990s, DuPont sought to reinvent itself once again by changing its focus from a chemical to a life-science company. DuPont's slogan was changed to "Miracles of Science" which could incorporate a sustainable development message (DuPont, 2003). In 1999, after a joint venture with Pioneer Hi-Bred International, Inc., DuPont bought the company outright for US\$7.7 billion, thereby acquiring the world's largest seed company, which produces hybrid corn, soybeans, alfalfa, canola, and wheat (DuPont, 2003; Guerrante, 2004). In 2003 Dupont and the Bunge Company entered upon a joint venture with the formation of the Solae Company. The new company specializes in nutritional products, particularly proteins in soybeans and lecithin. In 2005, DuPont and Tate & Lyle formed a joint venture to build a plant that would use a polymer made from genetically modified corn in place of the petrochemical-based polymer used in clothing and carpeting, and plastics.

DuPont has also striven to present itself as an ethically responsible company. It is a founding member of the United Nations Global Compact and is moving to be in full accordance with the Global Reporting Initiative Guidelines. It is also member of the Responsible Care Initiative which consists of a formal commitment to a set of guiding principles to reduce negative impact on the environment, workers and the general public. It includes codes implementation checklists and performance indicators as well as the agreement to communicate to outside parties, share views and strategies with other industries and encourage others to join (Munn, 2000).

While DuPont's trajectory shows the ability of a large company to respond to new demands and new contexts, it also shows the importance of government and civil society associations in shaping the development of the company. Public opinion defining DuPont as "merchants of death" (DuPont 2003) due to their involvement in the war efforts pushed DuPont to change its image from that of an explosives manufacturer to a chemical company developing consumer products. Later criticism of its environmental record as a chemical company caused it to delete the tag in its slogan "through chemistry" and reconsider its environmental precautions as well as its products (DuPont 2003). Accusations of "green washing" (Bruno 1997) and other chemical disasters spurred DuPont to adopt the Responsible Care initiative. Although DuPont admits it must dialogue about its mistakes (DuPont 2003), communication has often been initiated through bad publicity, lawsuits, and activist finger pointing; in other words, corporate social responsibility did not initially emerge from within the company but due to pressure from outside.

#### Consumers and residents

Initially GM seeds did not offer direct benefits for consumers since seeds were geared toward farm production and limited use of agrochemicals. Nevertheless, consumers and residents have become an important voice within the discussion on GM seeds. Consumers are interested in price reduction and also the possible health concerns related to the consumption of GM seeds. More recently GM crops offer special dietary benefits for consumers such as higher quantities of vitamin A or proteins. We might ask whether consumers are prepared to make a decision on the safety of such products – especially consumers in developing countries who might not have access to information, lack the educational background to understand the scientific aspects of the discussion, or are inclined to simply buy the cheapest product. Indeed, the scientific knowledge required to evaluate the technology of each seed and its effects is extremely sophisticated, and is largely beyond the grasp of the lay public. If scientists cannot agree, how can the lay person make an informed decision?

## Scientists and academic institutions

Scientists are divided on the advantages of GM seeds. Some have actively participated in the development and promotion of these seeds. They argue that agriculture continues to be a primary importance to the Brazilian economy and that encumbering the use of advanced technologies in agriculture, through overly cautious legislation and bureaucracy, will compromise Brazil's ability to compete within a globalized market and severely hinder economic development. They also argue that the discussion on GM seeds has become overtly ideological, where anti-imperialist jargon has invaded talk on the particular qualities and benefits of a product Such tendencies only work against the development of good science and good public policy (Brazilian Association of Biotech Companies, 2006; CIB, 2004). Other scientists question the need for GM seeds. They argue that GM seeds could pose health risks that have not been adequately studied and they charge that transnational organizations have not given consumers sufficient information concerning their product. GM seeds could provoke a loss in the genetic diversity in agriculture, putting crops more at risk since single characteristic crops will be unable to withstand differing pests and conditions. They can genetically pollute other organisms and lead to the generation of "super pests" as well as killing off insects that are beneficial to agriculture and affecting microorganisms in the soil. Scientists also argue against the control of food production by just a few industries and cite the need for social and political changes to meet our needs (Clarke and Inouye, 2002, Greenpeace, 2004; Inouye, 2003, Shiva, 2004). The credibility of scientists has also been put into question by examining their funding sources. In general industrially funded scientists favor GM seeds while those funded by activist organizations criticize this technology.

# Civil society organizations

Civil society organizations such as Greenpeace, have been the strongest opponents of GM seeds. The campaign, "For a Brazil free of transgenics," has argued that there is no technical regulation for the secure use of these products and include the list of criticisms outlined by scientists who criticize GM seeds. The advent of the Internet and other means of advanced communications have made it possible for activist groups to disseminate their ideas concerning environmental and social issues to other countries and forge alliances with local organizations that are also developing local popular support. In criticizing industry, international groups have had the resources to publish on-line studies, set up Web sites, and instigate lawsuits. However, international organizations have also been criticized for not perceiving the full complexity of local situations, for putting their cause before concern for the local people involved and for usurping local power (Khan 2005).

#### **Global market**

The global market is a major influence. As long as other countries are importing GMfree products, there will continue to be a market for traditional cultivation. But should the market for GM products increase, economic contingencies could be the most decisive factor in the release of GM crops onto the market. Unlike European countries, Brazil depends on its agricultural exports and is not in a position to neglect a technology that would offer it a more productive advantage. Should the decision be left up to market demands?

Each of the stakeholders involved in this discussion presents a limited and restricted ethical perspective. Who can we trust to make a decision? DuPont who has invested billions of dollars on this technology could hardly be expected to transcend its position and make a neutral stance on the benefits or dangers of GM seeds. The Brazilian government is divided with the ministry of agriculture strongly promoting the release of these seeds while the ministry of ecology strongly opposes it. The scientific sophistication needed to analyze these concerns is beyond the reach of most consumers. Civil society organizations such as Greenpeace have been criticized for the exaggerated and simplistic slogan and dogmatic stance. Farmers are interested in their own survival and profit. Scientists often have tunnel vision in focusing in on only a particular aspect of a product without taking a look at the overall consequences. It appears that we cannot count on any one group to provide an informed, neutral ethical position. What are our options?

# Social Ethics for New Technologies

As we have seen in our case study, each stakeholder brought an important but ethically limited perspective to the issue of GM seeds. This situation produced an ethical dilemma which needed to be solved. Realistically, we cannot expect that stakeholders will automatically engage in meaningful partnerships or collaborate as a unified group toward national or international development. What we find in Brazil is the participation of various interest groups, each with an ethical position limited by its own particular agenda in the arguments that they bring to the public sphere. Those with the strongest voice will likely win.

The issue of GM seeds has raised new questions beyond safety, transparency, and environmental and social stewardship. Or rather, it has brought to the surface old questions that have to be asked all over again. Beyond the issue of whether a particular technology can benefit society or not, we could ask: What should our priorities be? What are our needs? How should we respond to these needs and priorities? How much power should any one organization, corporation, or industry have? Who should decide these questions?



Our conclusion continues to promote the development of public spheres for the discussion and development of public policy for new technologies whereby particular and limited interests are allowed to express their view within conditions of participation and negotiation. By providing forums for each interest group or stakeholder to voice their concern, we can create spheres for sophisticated ethical decision making. These spheres can occur at various levels.

- Companies could engage governments, academic institutions, and civil societies as well as international organizations during the research phase so that product development is grounded more closely to needs.
- Companies should locate their research and development branches also within southern countries so that their needs and conditions are included within product development.
- A superfund could be developed by industry to provide independent research on new technologies.
- By forming associations, organizations, governments, and industries could attempt to foresee parallel problems (i.e. logistics, segregation of products, etc) before these problems become urgent.

- Educational programs for users of their products and the dangers involved could be more strictly enforced.
- Through more cooperative efforts in the development of technologies, new products would be discussed in their inception and development rather than their commercialization.
- Academic institutions provide excellent spaces for discussion, negotiation and participation.

These strategies require not only cooperation from industry but also from governments and civil organizations. This process of negotiation and dialogue provides the conditions for each stakeholder to defend its case and also to force the other to reconsider and to become more sophisticated in its response so that an adequate solution can be found to the question of new technologies and their corollary issues.

# References

Brazilian Association of Biotech Companies (2006). 'O que é Biotecnologia?' http://www.abrabi.org.br/biotecnologia.htm. 03/03/2008.

Bruno, K. (1997), The World of Greenwash'. *Corpwatch* (January 1) <a href="http://www.corpwatch.org/article.php?id+244">http://www.corpwatch.org/article.php?id+244</a>>. 03/03/2008.

CIB (2004). Perguntas e respostas: Biotecnologia', Conselho de Informações sobre Biotecnologia, 2 <http://www.cib.org.br/faq.php?id=2>. 03/03/2008.

Clarke, T and Inouye, B. (2002). *Gallpoing Gene Giants*. Canada Polaris Institute, Ottawa.

DuPont (2003). 'DuPont Heritage', <a href="http://www.heritage.dupont.com">http://www.heritage.dupont.com</a>, 03/13/2008.

Greenpeace (2004), Por um Brasil Livre de Transgênicos', *Document 17/01*, World Social Fórum, Mumbai.

Guerrante, R.D.S. (2004) 'Comportamento Estratégico das Grandes Empresas do Mercado de Sementes Geneticamente Modificadas'. *Impulso* **15**(36), 59-76.

Inouye, K. (2003), *Unpacking the Agro Biotech Engines*. Polaris Institute Report, Ottawa.

Khan, F.R. (2005) 'Hard Times Recalled: Child Labour in Pakistan's Soccer Ball Industry'. In F. Bird, E. Raufflet and J. Smucher (eds) *International Businesses and the Dilemma of Developmen,t* Palgrave-MacMillan, London, ch 7. Kohlberg, Lawrence; Charles Levine, Alexandra Hewer (1983). *Moral stages : a current formulation and a response to critics*. Basel, NY: Karger.

Medina, V.D. (2002). Estudio de Derecho Comparado Caso: Brasil. Projetcto de Investigación. CDA/FIELD 'Desarrollo de um Marco Jurídico e Institutional para la Bioseguridad em Chile' Facultad de Derecho, Centro de Derecho Ambiental, Universidad de Chile, Santiago de Chile.

Minstério da Agricultura, Brazil (2004), *Agronegócio Brasileiro: Uma Oportunidade de Investimentos,* <a href="http://www.agricultura.gov.br">http://www.agricultura.gov.br</a>, 01/12/2006.

Mittermeier, RA, Gil, P.R. and Mittermeier, C.G. (1997) *Megadiversity: Earth's Biologically Wealthiest Nations*, CEMEX/Agrupación Sierra Madre, Mexico.

Munn, K (2000). Responsible and Related Voluntary Initiatives to Improve Enterprise Performance on Health, Safety and Environment in the Chemical Industry, International Labour Office, Geneva,

<http://www.ilo.org/public/english/dialogue/sector/papers/respcare/index.htm>, 03/03/2008.

Shiva, V. (2000), 'Biotecnologia e Organismos Geneticamente Modificados – Soluções ou Novos Problemas', *Impulso* 15(36), 35-43.

**Margaret Griesse** received her Ph.D. in Education and International Development at the University of Frankfurt, Germany. She participated in the international research project, "Managing International Businesses in Developing Areas" based at Concordia University in Canada, and continues to be part of the "International Forum on Human Rights," based in Spain. She has worked in non-profit organizations in the United States, Argentina, Germany and Brazil. She edited the book Responsabilidades Sociais: Prácticas de Empresas Internacionais em América Latina on the social responsibility of businesses in Latin America. She has articles published in the Journal of Business Ethics, Impulso, Reivista da ANPAE, Comunicações em Educação and other journals.