

CASE 1

Monsanto Attempts to Balance Stakeholder Interests

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Think Monsanto, and you probably do not think about small farms. Rather, the phrase *genetically modified* likely comes to mind. The Monsanto Company is the world's largest seed company, with sales of over \$8.6 billion. It specializes in biotechnology, or the genetic manipulation of organisms. Monsanto scientists have spent the last few decades modifying crops, often by inserting new genes or adapting existing genes within plant seeds, to better meet certain aims such as higher yield or insect resistance. Monsanto produces plants that can survive weeks of drought, ward off weeds, and kill invasive insects. Monsanto's genetically modified (GM) seeds have increased the quantity and availability of crops, helping farmers worldwide increase food production and revenues.

Today, 90 percent of the world's GM seeds are sold by Monsanto or by companies that use Monsanto genes. Monsanto also holds 70–100 percent market share on certain crops. Yet Monsanto has met with its share of criticism from sources as diverse as governments, farmers, activists, and advocacy groups. Monsanto supporters say it is creating solutions to world hunger by generating higher crop yields and hardier plants. Critics accuse the multinational giant of trying to take over the world's food supply, and destroying biodiversity. Since biotechnology is relatively new, they also express concerns about the possibility of negative health and environmental effects from biotech food. However, such criticisms have not deterred Monsanto from becoming one of the world's most successful companies.

The following analysis first looks at the history of Monsanto as it progressed from a chemical company to an organization focused on biotechnology, and then examines Monsanto's current focus on developing genetically modified seeds, including stakeholder concerns regarding the safety and environmental effects of these seeds. The controversy surrounding the drug Posilac is also examined. Next, some ethical concerns, including organizational misconduct and patent issues, are discussed. The analysis also looks at

Jennifer Sawayda, under the direction of O.C. Ferrell and Jennifer Jackson, prepared this case for classroom discussion, rather than to illustrate either effective or ineffective handling of an administrative, ethical, or legal decision by management. All sources used for this case were obtained through publicly available material.

some of Monsanto's corporate responsibility initiatives. It concludes by examining the challenges and opportunities Monsanto may face in the future.

HISTORY: FROM CHEMICALS TO FOOD

The original Monsanto was very different from the current company. It was started by John F. Queeny in 1901 in St. Louis and was named after his wife, Olga Monsanto Queeny. The company started making artificial food additives. Its first product was the artificial sweetener saccharine, which it sold to Coca-Cola. Monsanto followed by selling Coca-Cola caffeine extract and vanillin, an artificial vanilla flavoring. At the start of WWI, company leaders realized the growth opportunities in the industrial chemicals industry and renamed the company The Monsanto Chemical Company. The company began specializing in plastics, its own agricultural chemicals, and synthetic rubbers.

Due to its expanding product lines, Monsanto was renamed again the Monsanto Company in 1964. By this time, Monsanto was producing such diverse products as petroleum, fibers, and packaging. A couple years later, Monsanto created its first Roundup herbicide, a successful product that would propel the company even more into the public's consciousness.

However, during the 1970s, Monsanto hit a major legal snare. The company had produced a chemical known as Agent Orange that was used during the Vietnam War to quickly deforest the thick Vietnamese jungles. Agent Orange contained dioxin, a chemical that caused a legal nightmare for Monsanto. Dioxin was found to be extremely carcinogenic, and in 1979, a lawsuit was filed against Monsanto on behalf of hundreds of veterans who claimed they were harmed by the chemical. Monsanto and several other manufacturers agreed to settle for \$180 million. The repercussions of dioxin would continue to plague the company for decades.

In 1981, Monsanto leaders determined that biotechnology would be the company's new strategic focus. The quest for biotechnology was on, and in 1994 Monsanto introduced the first biotechnology product to win regulatory approval. Soon the company was selling soybean, cotton, and canola seeds that were engineered to be tolerant to Monsanto's Roundup Ready herbicide. Many other herbicides killed the good plants as well as the bad ones. Roundup Ready seeds allowed farmers to use the herbicide to eliminate weeds while sparing the crop.

In 1997, Monsanto spun off its chemical business as Solutia, and in 2000 the company entered into a merger and changed its name to the Pharmacia Corporation. Two years later, a new Monsanto, focused entirely on agriculture, broke off from Pharmacia, and the companies became two separate legal entities. The company before 2000 is often referred to as "old Monsanto," while today's company is known as "new Monsanto."

The emergence of new Monsanto was tainted by some disturbing news about the company's conduct. It was revealed that Monsanto had been covering up decades of environmental pollution. For nearly forty years, the Monsanto Company had released toxic waste into a creek in an Alabama town called Anniston. It had also disposed of polychlorinated biphenyls (PCBs), a highly toxic chemical, in open-pit landfills in the area. The results were catastrophic. Fish from the creek were deformed, and the population had elevated PCB levels that astounded environmental health experts. A paper trail showed that Monsanto leaders had known about the pollution since the 1960s, but had not stopped production. Once the cover-up was discovered, thousands of plaintiffs from the city filed a

lawsuit against the company. In 2003, Monsanto and Solutia agreed to pay a settlement of \$700 million to more than 20,000 Anniston residents. However, no amount of money will give people back their health or the health of their environment.

When current CEO Hugh Grant took over in 2003, scandals and stakeholder uncertainty over Monsanto's GM products had tarnished the company's reputation. The price of Monsanto's stock had fallen by almost 50 percent, down to \$8 a share. The company had lost \$1.7 billion the previous year. Grant knew the company was fragile; yet through a strategic focus on GM foods, the company has recovered and is now prospering.

In spite of their controversial nature, GM foods have become popular both in developed and developing countries. Monsanto became so successful with its GM seeds that it acquired Seminis, Inc., a leader in the fruit and vegetable seed industry. The acquisition transformed Monsanto into a global leader in the seed industry. Today, Monsanto employs nearly 20,000 people in 160 countries. It has been recognized as the top employer in Argentina, Mexico, India, and, for eight times in a row, Brazil.

THE SEEDS OF CHANGE: MONSANTO'S EMPHASIS ON BIOTECHNOLOGY

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While the original Monsanto made a name for itself through the manufacturing of chemicals, new Monsanto took quite a different turn. It switched its emphasis from chemicals to food. Today's Monsanto owes its \$8.6 billion in sales to biotechnology, specifically to its sales of genetically modified (GM) plant seeds. These seeds have revolutionized the agriculture industry.

Throughout history, weeds, insects, and drought have been the bane of the farmer's existence. In the past century, herbicides and pesticides were invented to ward off pests. Yet applying these chemicals to an entire crop was both costly and time-consuming. Then Monsanto scientists, through their work in biotechnology, were able to implant seeds with genes that make the plants themselves kill bugs. They also created seeds containing the herbicide Roundup Ready, an herbicide that kills weeds but spares the crops.

The broad introduction of these GM seeds in the 1990s unleashed a stream of criticism. Monsanto was nicknamed “Mutanto,” and GM produce was called “Frankenfood.” Critics believed that influencing the gene pools of plants we eat could result in negative health consequences, a fear that remains to this day. Others worried about the health effects on beneficial insects and plants. Could pollinating GM plants have an effect on nearby insects and non-GM plants? CEO Hugh Grant decided to curtail the tide of criticism by focusing biotechnology on products that would not be directly placed on the dinner plate, but instead on seeds that produce goods like animal feed and corn syrup. In this way, Grant was able to reduce some of the opposition. Today, the company invests largely in four crops: corn, cotton, soybeans, and canola.

Thus far, the dire predictions of critics have not occurred. Monsanto owes approximately 60 percent of its revenue to its work in GM seeds, and today, more than half of U.S. crops, including most soybeans and 70 percent of corn, are genetically modified. Approximately 282 million acres worldwide are now devoted to biotech crops, and the fastest growth is in developing countries. However, critics are wary that long-term effects still might be discovered.

Farmers who purchase GM seeds can now grow more crops on less land and with less left to chance. GM crops have saved farmers billions by preventing loss and increasing crop yields. For example, in 1970 the average corn harvest yielded approximately 70 bushels an acre. With the introduction of biotech crops, the average corn harvest has increased to roughly 150 bushels an acre. Monsanto predicts even higher yields in the future, possibly up to 300 bushels an acre by 2030. “As agricultural productivity increases, farmers are able to produce more food, feed, fuel, and fiber on the same amount of land, helping to ensure that agriculture can meet humanity’s needs in the future,” said Monsanto CEO Hugh Grant concerning Monsanto technology.

As a result of higher yields, the revenues of farmers in developing countries have increased dramatically. According to company statistics, the cotton yield of Indian farmers rose by 50 percent, doubling their income in one year. Additionally, the company claims that its insect-protected corn has raised the income level in the Philippines to above poverty level. Critics argue that these numbers are inflated; they say the cost of GM seeds is dramatically higher than that of traditional seeds, and therefore they actually reduce farmers’ take-home profits.

Monsanto’s GM seeds have not been accepted everywhere. Attempts to introduce them into Europe have been met with extreme consumer backlash. Consumers have gone so far as to destroy fields of GM crops and arrange sit-ins. Greenpeace has fought Monsanto for years, especially in the company’s efforts to promote GM crops in developing countries. This animosity toward Monsanto’s products is generated by two main concerns: worries about the safety of GM food, and concerns about the environmental effects.

Concerns About the Safety of GM Food

Of great concern for many stakeholders are the moral and safety implications of GM food. Many skeptics see biotech crops as unnatural, with the Monsanto scientist essentially “playing God” by controlling what goes into the seed. Also, because GM crops are relatively new, critics maintain that the health implications of biotech food may not be known for years to come.

They also contend that effective standards have not been created to determine the safety of biotech crops. Some geneticists believe the splicing of these genes into seeds could create small changes that might negatively impact the health of humans and animals that eat them. Also, even though the FDA has declared biotech crops safe, critics say they have not been around long enough to gauge their long-term effects.

One major health concern is the allergenicity of GM products. Critics fear that a lack of appropriate regulation could allow allergens to creep into the products. Another concern is toxicity, particularly considering that many Monsanto seeds are equipped with a gene to allow them to produce their own Roundup Ready herbicide. Could ingesting this herbicide, even in small amounts, cause detrimental effects on consumers? Some stakeholders say yes, and point to statistics on glyphosate, Roundup’s chief ingredient, for support. According to an ecology center fact sheet, glyphosate exposure is the third most commonly reported illness among California agriculture workers, and glyphosate residues can last for a year. Yet the EPA lists glyphosate as having a low skin and oral toxicity, and a study from the New York Medical College states that Roundup does not create a health risk for humans.

Despite consumer concerns, the FDA has proclaimed that GM food is safe to consume. As a result, it also has determined that Americans do not need to know when they are consuming GM products. Thus, this information is not placed on labels in the United

States, although other countries, most notably Great Britain and the European Union, do require GM food products to state this fact in their labeling.

Bovine Growth Hormone Concerns. Monsanto has also come under scrutiny for its synthetic hormone Posilac, the brand name of a Monsanto drug that contains recombinant bovine growth hormone (rBST). This hormone is a supplement to the naturally occurring hormone BST in cows. Posilac causes cows to produce more milk, a boon to dairy farmers but a cause of concern to many stakeholders who fear that Posilac may cause health problems in cows and in the humans who drink their milk. After numerous tests, the FDA has found that milk from Posilac-treated cows is no different in terms of safety than milk from rBST-free cows. Yet these assurances have done little to alleviate stakeholder fears, especially since some studies maintain that rBST increases health problems in cows.

Public outcry from concerned consumers has become so loud that many grocery stores and restaurants have stopped purchasing rBST-treated milk. Starbucks, Kroger, Ben & Jerry's, and even Wal-Mart have responded to consumer demand by only using or selling rBST-free milk, which has put a damper on Monsanto's Posilac profits.

In the past few years, certain groups, including Monsanto, have fought back against the popularity of rBST-free milk. They maintain that consumers are being misled by implications that rBST-free milk is safer than rBST-treated milk. The grassroots organization AFACT, short for American Farmers for the Advancement and Conservation of Technology, has pressured the government to pass laws forbidding the use of labels that state that milk is free of rBST. Their efforts have been met with some support from legislators. In 2006, Pennsylvania senator and agriculture secretary Dennis Wolff tried to ban milk that was labeled as rBST-free, but stakeholder outrage prevented the law from being enforced. Instead, tighter restrictions on labels have been initiated. All rBST-free milk must now contain the following FDA claim: "No significant difference has been shown between milk derived from rBST-treated and non-rBST-treated cows."

Although Monsanto denies influencing AFACT in any way, many have accused the company of secretly governing the organization. Lori Hoag, spokeswoman for the dairy unit of Monsanto, admitted that the company did provide funds to AFACT, but says that the company has nothing to do with the governing decisions AFACT makes. In fact, on its website, Monsanto stresses that it has no problem with milk labels listed as rBST-free as long as the label contains the claim of the FDA. However, critics are still accusing Monsanto of being behind AFACT in what they say is an attempt to curtail the unpopularity of Posilac.

Concerns About Environmental Effects of Monsanto Products

Studies have supported the premise that Roundup herbicide, which is used in conjunction with the hearty GMO seeds called Roundup Ready, can be harmful to birds, insects, and particularly amphibians. Such studies have revealed that small concentrations of Roundup may be deadly to tadpoles, which is a major concern, as frog and toad species are rapidly disappearing around the globe. A test using Roundup, performed by University of Pittsburgh assistant professor of biological sciences Rick Relyea and his doctoral students, killed 71 percent of tadpoles in outdoor tanks at one-third the maximum concentrations

found in nature. Relyea also maintains that soil does not lessen the herbicide's negative effects. Roundup was never approved for water use; however, Relyea and others fear that water runoff may carry Roundup into water sources.

Another concern with GM seeds in general is the threat of environmental contamination. Bumblebees, insects, and wind can carry a crop's seeds to other areas, sometimes to fields containing non-GM crops. These seeds and pollens might then mix in with the farmer's crops. In the past, organic farmers have complained that genetically modified seeds from nearby farms have "contaminated" their crops. This environmental contamination could pose a serious threat. Some scientists fear that GM seeds that are spread to native plants may cause those plants to adopt the GM trait, thus creating new genetic variations of those plants that could negatively influence (through genetic advantages) the surrounding ecosystem. Andrew Kimbrell, director of the Centre for Technology Assessment in Washington, predicts that "biological pollution will be the environmental nightmare of the twenty-first century."

Monsanto has not been silent on these issues and has acted to address some of these concerns. The company maintains that the environmental impact of everything it creates has been studied by the EPA and approved. Monsanto officials claim that glyphosate in Roundup Ready does not usually end up in ground water, and cites a study which revealed that less than 1 percent of glyphosate contaminates ground water through runoff. The company also claims that when it does contaminate ground water, it is soluble and will not have much effect on aquatic species. This conflicts with Relyea's study, leaving stakeholders unsure about what to believe.

Crop Resistance to Pesticides and Herbicides.

Another environmental problem that has emerged is the possibility of weed and insect resistance to the herbicides and pesticides on Monsanto crops. Critics fear that continual use of the chemicals could result in "super weeds" and "super bugs," much like overuse of antibiotics in humans has resulted in drug-resistant bacteria. The company's Roundup Ready line, in particular, has come under attack. Monsanto points out, and rightly so, that Roundup herbicide has been used for thirty years, largely without resistance issues. However, GMO plants labeled Roundup Ready are genetically engineered to withstand large doses of the herbicide Roundup. As Roundup is being used more frequently and exclusively because of the Roundup Ready plants' tolerance, even weeds have started developing a resistance to this popular herbicide. As early as 2003, significant numbers of Roundup resistant weeds had been found in the United States and Australia.

To combat "super bugs," the government requires farmers using Monsanto's GMO products to create "refuges," in which they plant 20 percent of their fields with a non-genetically modified crop. The theory is that this allows nonresistant bugs to mate with those that are resistant, preventing a new race of super bugs. To prevent resistance to the Roundup herbicide, farmers are supposed to vary herbicide use and practice crop rotations. However, since Roundup is so easy to use, particularly in conjunction with Roundup Ready seeds, many farmers do not take the time to institute these preventative measures. When they do rotate their crops, some will rotate one Roundup Ready crop

Some scientists fear that GM seeds that are spread to native plants may cause those plants to adopt the GM trait

with another type of Roundup Ready crop, which does little to solve the problem. This is of particular concern in Latin America, Africa, and Asia where farmers may not be as informed of the risks of herbicide and pesticide overuse.

Monsanto has taken action to deter weed herbicide resistance. In 2009, the company agreed to offer rebates, up to \$12/acre, to farmers in thirteen states who use combinations of herbicides on their crops. Monsanto is offering rebates on six of the products, only one of which is a Monsanto product. The company is taking a proactive stance to show that it cares about preventing resistance; however, this does little to stem what might become a global problem.

DEALING WITH ORGANIZATIONAL ETHICAL ISSUES

In addition to concerns over the safety of GM seeds and environmental issues, Monsanto has had to deal with concerns about organizational conduct. Organizations face significant risks from strategies and also from employees striving for high performance standards. Such pressure sometimes encourages employees to engage in illegal or unethical conduct. All firms have these concerns, and in the case of Monsanto, bribes and patents have resulted in legal, ethical, and reputational consequences.

Bribery Issues

Bribery presents a dilemma to multinational corporations because different countries have different perspectives on it. While it is illegal in the United States, other countries allow it. Monsanto faced such a problem with Indonesia, and its actions resulted in the company being fined a large sum.

In 2002, a senior manager at Monsanto instructed an Indonesian consulting firm to pay a bribe of \$50,000 to a high-level official in the country's environment ministry. The bribe apparently was for the company to disguise an invoice, which showed that Monsanto was facing opposition from farmers and activists in regard to the introduction of GM cotton in Indonesia.

It was later revealed that such bribery was not an isolated event; the company had paid off many officials between 1997 and 2002. Monsanto first became aware of the problem after discovering some irregularities at their Indonesian subsidiary in 2001. As a result, the company launched an internal investigation and reported the bribery to the U.S. Department of Justice and the Securities and Exchange Commission (SEC).

Monsanto accepted full responsibility for its employees' behavior and agreed to pay \$1 million to the Department of Justice and \$500,000 to the SEC. It also agreed to three years of close monitoring of its activities by American authorities. The incident showed that although Monsanto has not been immune to scandals, it has been willing to work with authorities to correct them.

Patent Issues

Like most businesses, Monsanto wants to patent its products. A problem arises, however, when it comes to patenting seeds. As bioengineered creations of the Monsanto Company,

Monsanto's seeds are protected under patent law. Under the terms of the patent, farmers using Monsanto seeds are not allowed to harvest seeds from the plants for use in upcoming seasons. Instead, they must purchase new Monsanto seeds each season. By issuing new seeds each year, Monsanto ensures it will secure a profit as well as maintain control over its property.

Unfortunately, this is a new concept for most farmers. Throughout agricultural history, farmers have collected and saved seeds from previous harvests to plant the following year's crops. Critics argue that requiring farmers to suddenly purchase new seeds year after year puts an undue financial burden on them and allows Monsanto too much power. However, the law protects Monsanto's right to have exclusive control over its creations, and farmers must abide by these laws. When they are found guilty of using Monsanto seeds from previous seasons, either deliberately or out of ignorance, they are often fined.

Since it is fairly easy for farmers to violate the patent, Monsanto has found it necessary to employ investigators from law firms to investigate suspected violations. The resulting investigations are a source of contention between Monsanto and accused farmers. According to Monsanto, investigators approach the farmers suspected of patent infringement and ask them some questions. The investigators must practice transparency with the farmers and tell them why they are there and who they represent. If after the initial interview is completed, suspicions still exist, the investigators may pull the farmer's records (after assuring the farmer they will do so in a respectful manner). Sometimes they bring in a sampling team, with the farmer's permission, to test the farmer's fields. If found guilty, the farmer often has to pay Monsanto. According to Monsanto, in the past ten years, it has only filed suit against farmers 120 times, and only eight of these suits have proceeded to trial. Each time the ruling was in Monsanto's favor.

Some farmers, on the other hand, tell a different story about Monsanto and its seed investigators, calling the investigators the "seed police" and even referring to them with such harsh words as "Gestapo" or "mafia." One controversial suit was a case involving storeowner Gary Rinehart from Missouri. As Rinehart relates it, a Monsanto seed investigator entered his store and accused him of saving seeds from previous seasons. The investigator then threatened him with a suit if he did not settle. The company filed suit but eventually found it had the wrong man. Monsanto dropped the suit against him but never apologized. Rinehart also claims the investigators were inspecting other farmers in the area. Other complaints against investigators include similar acts of intimidation, with some farmers even going so far as to accuse investigators of following them and secretly videotaping them.

Such accusations are disturbing, but Monsanto has countered them with its own stories. It claims that Rinehart refused to cooperate and became irate, finally throwing the investigators out of his store. Monsanto filed suit, but eventually found that it was Rinehart's nephew who was transporting the saved seed. The company dropped the suit against Rinehart, and the nephew eventually agreed to settle. According to their website, the nephew still has not paid the settlement.

In order to prevent so many instances of patent infringement, some have suggested that Monsanto make use of GURT, or gene use restriction technology. This technology would let Monsanto create "sterile" seeds. Dubbed by stakeholders as "Terminator seeds," these seeds have several risks and have spurred much controversy among the public, including

Farmers using Monsanto seeds are not allowed to harvest seeds from the plants for use in upcoming seasons.

a concern that these sterile seeds might somehow get transported to other plants, which could create sterile plants that would reduce genetic diversity. In 1999, Monsanto pledged not to commercialize sterile seed technology in food crops. The company has promised that it will only do so in the future after consulting with experts, stakeholders, and relevant NGOs.

CORPORATE RESPONSIBILITY AT MONSANTO

It is a common expectation today for multinational companies to take actions to advance the interests and well-being of the people in the countries in which they do business. Monsanto is no exception. The company has given millions of dollars in programs to help improve the communities in developing countries. In fact, *Corporate Responsibility Magazine* ranked Monsanto number 20 on its 100 Best Corporate Citizens list of 2009, a jump from number 88 the previous year.

In addition, as an agricultural company, Monsanto must address the grim reality facing the world in the future: The world's population is increasing at a fast rate, and the amount of available land and water for agriculture is decreasing. Some experts believe that our planet will have to produce more food in the next 50 years to feed the world's population than it has grown in the past 10,000 years, requiring us to double our food output. As a multinational corporation dedicated to agriculture, Monsanto is expected to address these problems. In fiscal year 2008, the company expended \$980 million for researching new farmer tools. The company has also developed a three-tiered commitment policy: (1) produce more yield in crops, (2) conserve more resources, and (3) improve the lives of farmers. The company hopes to achieve these goals by taking some initiatives in sustainable agriculture.

Sustainable Agriculture

Agriculture intersects the toughest challenges we all face on the planet. Together, we must meet the needs for increased food, fiber and energy while protecting the environment. In short, the world needs to produce more and conserve smarter.

This quote by Monsanto CEO Hugh Grant demonstrates the challenges agriculture is facing today, along with Monsanto's goals to meet these challenges head-on. For instance, Monsanto is quick to point out that its biotech products added more than 100 million tons to worldwide agriculture production between 1996 and 2006, which they estimate has increased farmer's incomes by \$33.8 billion. Monsanto has also created partnerships between nonprofit organizations across the world to enrich the lives of farmers in developing countries. Two regions on which Monsanto is focusing are India and Africa.

The need for better agriculture is apparent in India, where the population is estimated to hit 1.3 billion by 2017. Biotech crops have helped to improve the size of yields in India, allowing some biotech farmers to increase their yields by 50 percent. Monsanto estimates that cotton farmers in India using biotech crops earn approximately \$176 more in revenues per acre than their non-biotech contemporaries. In February 2009, Monsanto announced that it would launch Project SHARE, a sustainable yield initiative done in conjunction with the nonprofit Indian Society of Agribusiness, to try and improve the lives of 10,000 cotton farmers in 1,100 villages.

In Africa, Monsanto has helped many farmers prosper and thrive through difficult periods. For example, in 2007 the government of Malawi provided farmers with vouchers worth about \$3 each, which farmers could exchange for Monsanto seeds. Some of the farmers using these seeds saw their crop yields increase from a few bags to hundreds. Monsanto has also provided help to Project Malawi, a program to improve food security and health care to thousands of Malawians. Monsanto has provided the program with hybrid maize seed and has sent experts from the company to provide training for farmers in how to use the seed. Additionally, the large seed company has agreed to donate 240 tons of hybrid corn seed through 2010 to villages in Malawi, Tanzania, and Kenya. The goal of Monsanto is to improve farmers' lives in a way that will help them become self-sufficient.

Not all view Monsanto's presence in Africa as an outreach in corporate responsibility. Some see it as another way for Monsanto to improve the bottom line. Critics see the company as trying to take control of African agriculture and destroy African agricultural practices that have lasted for thousands of years. Yet, despite this criticism, there is no denying that Monsanto has positively affected African farmers' lives, along with increasing the company's profits for its shareholders. As CEO Hugh Grant writes, "This initiative isn't simply altruistic; we see it as a unique business proposition that rewards farmers and shareowners."

Charitable Giving

In 1964, the Monsanto Company established the Monsanto Fund. Much of the Monsanto Fund's contributions fund the company's projects in Africa. In 2006, the Fund awarded a \$15 million gift to the Donald Danforth Plant Science Center, which will help to support crop research in Africa. Other projects of the Fund include the "Healthy Children, Healthy Future" program, which seeks to reduce diseases in Brazilian children through education on good health and basic hygiene, and the funding of the Monsanto Insectarium at the St. Louis Zoo.

The Monsanto Company also supports youth programs. In the first decade of the twenty-first century, the company donated nearly \$1.5 million in scholarships to students who want to pursue agriculture-related degrees. The company also supports Future Farmers of America, the 4-H program, and the program Farm Safety 4 Just Kids, a program which helps teach rural children about safety while working on farms.

THE FUTURE OF MONSANTO

Monsanto faces some challenges that it needs to address, including lingering concerns over the safety and the environmental impact of its products. The company needs to enforce its code of ethics effectively to avoid organizational misconduct (like bribery) in the future. Monsanto also may be facing increased competition from other companies. The seed company Pioneer Hi-Bred International Inc. is using pricing strategies and seed sampling to attract price-conscious customers. Additionally, lower grain prices may convince farmers to switch from Monsanto to less expensive brands.

Yet, despite the onslaught of criticism from Monsanto detractors and the challenge of increased competition from other companies, Monsanto has numerous opportunities to thrive in the future. The company is currently working on new innovations that could increase its competitive edge as well as provide enormous benefits to farmers worldwide.

In 2009, the company announced that it had finished regulatory submissions for the planet's first biotech drought-tolerant corn. This corn could be a major boon to farmers in areas where drought is prevalent. Monsanto is also working with the African Agriculture Technology Foundation to bring drought-resistant technology to Africa (without having them pay royalties).

Although Monsanto has made ethical errors in the past, it is trying to portray itself as a socially responsible company dedicated to improving agriculture. As noted, the company still has some problems. The predictions from Monsanto critics about biotech food have not yet come true, but that has not totally eradicated the fears of stakeholders. With the increasing popularity of organic food and staunch criticism from opponents, Monsanto will need to continue working with stakeholders to promote its technological innovations and to eliminate fears concerning its industry.

QUESTIONS

1. Does Monsanto maintain an ethical culture that can effectively respond to various stakeholders?
2. Compare the benefits of growing GMO seeds for crops with the potential negative consequences of using them.
3. How should Monsanto manage the potential harm to plant and animal life from using products such as Roundup?

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