

## CASE 1

### Monsanto Attempts to Balance Stakeholder Interests\*

Think Monsanto, and the phrase *genetically modified* likely comes to mind. The Monsanto Company is the world's largest seed company, with sales of over \$10.5 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 a 70 to 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, critics also express concerns about the possibility of negative health and environmental effects from biotech food. However, such criticisms have not kept 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. Next, we discuss some ethical concerns, including organizational misconduct and patent issues. We also look at some of Monsanto's corporate responsibility initiatives. We conclude by examining the challenges and opportunities that Monsanto may face in the future.

#### HISTORY: FROM CHEMICALS TO FOOD

Monsanto was founded by John F. Queeny in 1901 in St. Louis, Missouri. He named it after his wife, Olga Monsanto Queeny. The company's first product was the artificial sweetener saccharine, which it sold to Coca-Cola. Monsanto also sold Coca-Cola caffeine extract and vanillin, an artificial vanilla flavoring. At the start of World War I, company leaders realized the growth opportunities in the industrial chemicals industry and renamed the

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company The Monsanto Chemical Company. The company began specializing in plastics, its own agricultural chemicals, and synthetic rubbers.

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

However, during the 1970s, Monsanto encountered a major legal obstacle. The company had produced a chemical known as Agent Orange, which 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 had been harmed by the chemical. Monsanto and several other manufacturers agreed to settle for \$180 million, but 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 legally separate 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 the Alabama town of 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 the dumping. 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.

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 over 21,000 people in 160 countries. It has been recognized as a top employer in Brazil, India, and Canada.

## MONSANTO'S EMPHASIS ON BIOTECHNOLOGY

While the original Monsanto had made a name for itself through the manufacturing of chemicals, the new Monsanto took quite a different turn. It switched its emphasis from chemicals to food. Today's Monsanto owes its \$10.5 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 twentieth century, synthetic chemical 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.

Since then Monsanto has used technology to create many more innovative products, such as drought-tolerant seeds for dry areas like Africa. The company also utilizes its technological prowess to gain the support of stakeholders. For example, Monsanto has a laboratory in St. Louis that gives tours to farmers. One of the technologies that the company shows visiting farmers is a machine known as the corn chipper, which picks up seeds and takes genetic material from them. That material is then analyzed to see how well the seed will do if planted. The "best" seeds are the ones Monsanto sells for planting. Impressing farmers with its technology and the promise of better yields is one way that Monsanto attracts potential customers.

However, genetically modified crops are not without their critics. Opponents believe that influencing the gene pools of the plants we eat could result in negative health consequences. Others are worried about the health effects on beneficial insects and plants, fearing that pollinating GM plants could affect 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. The company invests largely in four crops: corn, cotton, soybeans, and canola. Monsanto owes approximately 60 percent of its revenue to its work on GM seeds, and today more than half of U.S. crops, including most soybeans and 70 percent of corn, are genetically modified.

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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 about the benefits of Monsanto technology.

As a result of higher yields, the revenues of farmers in developing countries have increased. 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. The European Union has banned most Monsanto crops except for one variety of corn. 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 of genetic modification.

### Concerns About the Safety of GM Food

Of great concern to 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 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 Environmental Protection Agency (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. Therefore, this information is not placed on labels in the United States, although other countries, notably those in the European Union, do require GM food products to state this fact in their labeling.

### Concerns About Environmental Effects of Monsanto Products

Some studies have supported the premise that Roundup herbicide, which is used in conjunction with the GM 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. Other studies suggest that Roundup might have

a detrimental effect on human cells, especially embryonic, umbilical, and placental cells. Monsanto has countered these claims by questioning the methodology used in the studies, and the Environmental Protection Agency maintains that glyphosate is not dangerous at recommended doses.

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Another concern with GM seeds in general is the threat of environmental contamination. Bees and other 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 varia-

tions of those plants that could negatively influence (through genetic advantages) the surrounding ecosystem. The topic has taken on particular significance in Mexico. For eleven years, Mexico had a moratorium on genetically modified corn. It lifted the moratorium in 2005, enabling Monsanto to begin testing its genetically modified corn in northern Mexico a few years later. Monsanto is seeking authorization to begin the pre-commercial stage in Mexico, in which it would be able to expand its growing area to approximately 500 acres. However, consumers are putting up a fight. Believing that GM corn could contaminate their over 60 maize varieties, Mexicans have staged protests and formed groups to try and keep GM corn out of the country.

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 claims that when it does contaminate ground water, it is soluble and will not have much effect on aquatic species. Stakeholders are left to make their own decisions regarding genetically modified crops

## 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 as overuse of antibiotics in humans has resulted in drug-resistant bacteria. The company's Roundup Ready line, in particular, has come under attack. Genetically modified plants labeled Roundup Ready are genetically engineered to withstand large doses of the herbicide Roundup, and as Roundup is being used more frequently and exclusively because of the Roundup Ready plants' tolerance, now 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 GM 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 required to vary herbicide use and practice crop rotations. However, since Roundup is so easy to use, particularly in conjunction with Roundup Ready seeds, some

farmers may not take the time to institute these preventative measures. When they do rotate their crops, some will rotate one Roundup Ready crop 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.

## 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 in Indonesia, and its actions resulted in the company being fined a large sum.

In 2002 a Monsanto manager instructed an Indonesian consulting firm to pay a bribe of \$50,000 to an official in the country's environment ministry. The official accepted the bribe in exchange for bypassing an environmental study. It was later revealed that such bribery was not an isolated event; the company had paid off many officials between 1997 and 2002. Monsanto headquarters became aware of the problem after discovering irregularities at its Indonesian subsidiary in 2001. As a result, the company launched an internal investigation and reported the bribery to the U.S. Department of Justice (DOJ) 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.

### 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.

However, this is a new concept for most farmers. Throughout agricultural history, farmers have collected and saved seeds

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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 gives 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 in the past 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 deal with farmers in a respectful manner. They approach the farmers suspected of patent infringement and ask them some questions. The company claims that investigators 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. They may 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. But some farmers tell a different story about Monsanto and its seed investigators. They claim that Monsanto investigators have used unethical practices to get them to cooperate. They call the investigators the "seed police" and say they behave like a "Gestapo" or "mafia."

Monsanto is not limiting its investigations to farmers. It also filed a lawsuit against DuPont, the world's second-largest seed maker, for combining DuPont technology with Roundup Ready. Monsanto won the lawsuit, but was countersued by DuPont for anticompetitive practices. These accusations of anticompetitive practices have garnered the attention of federal antitrust lawyers. With increased pressure coming from different areas, Monsanto agreed to allow patents to expire on its seeds starting in 2014. This will allow other companies to create less expensive versions of Monsanto seeds. However, Monsanto announced that it would continue to strictly enforce patents for new versions of its products, such as Roundup Ready 2 soybeans.

In order to prevent patent infringement, some have suggested that Monsanto make use of GURT, or gene use restriction technology. This technology would let Monsanto create "sterile" seeds. These so-called "Terminator seeds" have spurred much controversy among the public, including a concern that these sterile seeds might cross-pollinate with 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.

## Legal Issues

Many major companies have government and legal forces to deal with, and Monsanto is no exception. Recently, the government has begun to more closely examine Monsanto's practices. In 1980 the Supreme Court for the first time allowed living organisms to be patented, giving Monsanto the ability to patent its seeds; but Monsanto has now come to the attention of the American Antitrust Institute for alleged anticompetitive activities. The institute wrote a paper suggesting that Monsanto is hindering competition, exerting too much power over the transgenic seed industry, and limiting seed innovation. When Monsanto acquired DeKalb and Delta Land and Pine, it had to get the approval of antitrust

authorities, and gained that approval only after agreeing to certain concessions. However, Monsanto may be walking a fine line with the Department of Justice (DOJ) and could soon become a target for antitrust litigation. Monsanto's competitor DuPont even complained to the DOJ about Monsanto's alleged anticompetitive practices. DuPont has filed a lawsuit claiming that Monsanto is using its power and licenses to block DuPont products. As a result of complaints, the DOJ has begun a civil investigation into Monsanto's practices. If the DOJ agrees that Monsanto's practices are anticompetitive, resulting decisions could affect how Monsanto does business.

## CORPORATE RESPONSIBILITY AT MONSANTO

Today the public generally expects multinational corporations to help advance the interests and well-being of the people in the countries in which they do business. Monsanto has given millions of dollars in programs to help improve communities in developing countries. In fact, *Corporate Responsibility Magazine* ranked Monsanto number 31 on its 100 Best Corporate Citizens list of 2010, a jump from number 88 the previous year.

In addition, as an agricultural company, Monsanto must address the grim reality that the world's population is fast increasing, and the amount of land and water available 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. The company has 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

Monsanto CEO Hugh Grant has said, "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." Monsanto is quick to point out that its biotech products added more than 100 million tons to worldwide agricultural production in a ten-year period, which the company estimates has increased farmers' 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 now 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 2009 Monsanto launched Project SHARE, a sustainable yield initiative created 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 partnered with the African Agricultural Technology Foundation, scientists, and philanthropists to embark on the Water Efficient Maize for Africa (WEMA) initiative. During this five-year project, Monsanto will help to develop drought-tolerant maize seeds; small-scale African farmers will not have to pay Monsanto royalties for their use. As CEO Hugh Grant writes, “This initiative isn’t simply altruistic; we see it as a unique business proposition that rewards farmers and shareowners.” But not all view Monsanto’s presence in Africa as an outreach in corporate responsibility. Some see it as another way for Monsanto to improve its 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.

### Charitable Giving

In 1964 the Monsanto Company established the Monsanto Fund. This fund contributed \$30.2 million to projects across the world between 2008 and 2009. One recipient of the Monsanto Fund was Africare, which received a \$400,000 grant from Monsanto to fund a two-year food security project to study the availability of food and the access people have to food.

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 wanting to pursue agriculture-related degrees. The company supports 4-H programs and the program Farm Safety 4 Just Kids, a program that helps teach rural children about safety while working on farms. Additionally, Monsanto donated \$4 million dollars’ worth of seeds to Haiti after the massive 2010 earthquake.

## THE FUTURE OF MONSANTO

Monsanto faces some challenges that it must 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 (such as bribery) in the future. Monsanto is also facing increased competition from other companies. The seed company Pioneer Hi-Bred International, Inc., has been using pricing strategies and seed sampling to attract price-conscious customers. Chinese companies are becoming formidable rivals for Monsanto as their weed killers began eating up some of Monsanto’s Roundup profits. As a result, Monsanto was forced to lower the prices of Roundup and announced plans to restructure the Roundup area of the business.

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 benefit farmers worldwide, and after a plunge in Roundup sales, Monsanto’s profits are bouncing back once more. The company is also preparing several biotech products for commercialization. Additionally, Monsanto sees major opportunities for expansion into places like China. The company has been discussing a possible deal with chemicals conglomerate Sinochem Corp., which has been tasked with

ensuring food security for China's large population. If Monsanto can enter into the largely untapped Chinese market for genetically-modified foods, perhaps through a joint venture or by acquiring a stake in a Chinese company, it might be able to gain access to an additional 1.34 billion consumers.

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 eradicated the fears of stakeholders. Faced 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.

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## QUESTIONS

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1. Does Monsanto maintain an ethical culture that can effectively respond to various stakeholders?
2. Compare the benefits of growing GM 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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