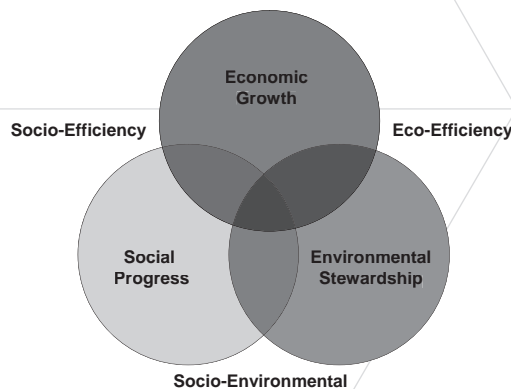


## Sustainability Concepts and Implications

### *The Evolving Definition of Sustainability*

- **The Original Definition** - The Brundtland Commission originally defined sustainability as "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
- **Sustainability Evolves to the "Triple Bottom Line"—People, Planet, Profit**—The "Triple Bottom Line" concept suggests that three broad elements—societal, environmental, and financial—need to be in balance for a company to be viable over the long-term. If any element is ignored in favor of short-term results in any other area, the company will suffer long-term consequences. This concept also recognizes that environmentally favorable activities which do not add economic value will not be sustainable. Similarly, economically advantaged actions that do not recognize the environmental or societal implications will not be sustainable. Rather than address each element independently, all three elements should receive equal consideration and must be strategically aligned and integrated. Over time, this new focus will lead to innovation, and ultimately, to a redefinition of the company, both internally (culture/values) and externally (brand reputation/image).



*The concepts of sustainable development suggest that three key elements... financial, environmental, and societal... need to be in balance and strategically aligned for a company to have long-term viability.*

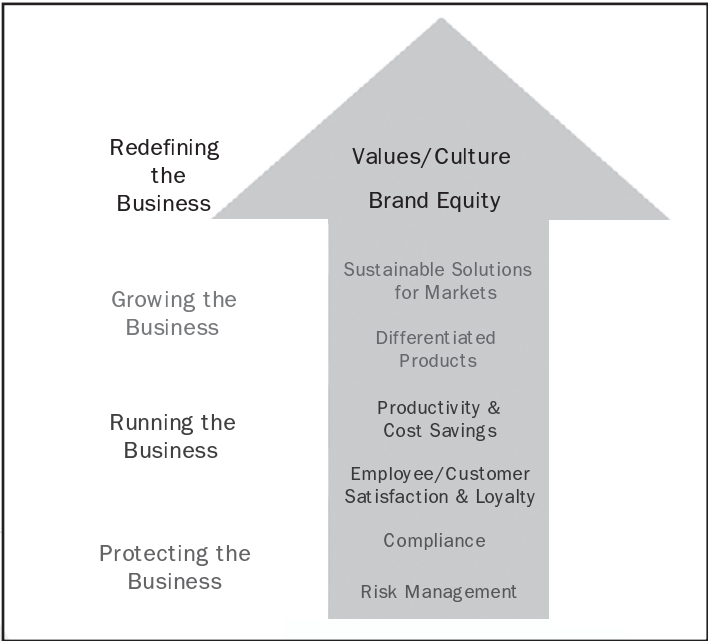
### *How is Sustainability Changing the Business World?*

- **Environmentalism is Becoming Mainstream**—Where environmentalism was once viewed as "radical", today's environmentalist is more "mainstream" due to several factors. Environmental and social awareness have gained prominence in the headlines as both natural and corporate disasters have called media attention to issues including global warming, pollution, child labor, and business ethics among others. The internet is making pervasive communication of concerns and issues real-time as well as creating a forum for like-minded individuals to share information. Where environmentalists once relied upon regulation, fear and conflict to drive change, many enlightened environmentalists and business leaders have discovered that collaborative relationships can benefit both the corporation and society using innovation as their tool of choice.

*Environmentalism is becoming mainstream. Where environmentalists once relied heavily on regulation, fear and conflict to drive change, enlightened environmentalists and business leaders have discovered that collaboration and innovation can deliver progress against both agendas.*

- **Beyond “Compliance” – A New Accountability** – The business context is changing. In this time of virtually infinite communication and information, companies are being held more accountable than ever. It is no longer acceptable to simply “comply” with regulations. Instead, companies are being challenged to take ownership for their actions as well as the actions of their suppliers and customers up and down the supply chain.

*“Companies are being challenged to take ownership for their actions as well as the actions of their suppliers and customers up and down the supply chain.”*



- **Playing Offense Instead of Defense** – Companies are moving their energy and dollars away from managing risk and defending their brands to creating differentiated value through brands that are recognized as being environmentally and socially aligned. The cost/risk of producing a “marginal” product in terms of compliance, litigation, worker safety, and reputation is being recognized and redirected towards creating competitive advantage by driving unique and differentiated solutions.

*The financial impact of risk on society, the environment, brand and image are being weighed more holistically against alternatives.*

- **Transparency to Targets is Expected** – Companies are being driven to create greater transparency to their non-financial environmental and societal performance. They are moving beyond compliance reporting and selective communication of only the positive messages to acknowledging opportunities for improvement, showing year over year progress, and setting long-range, publicly visible goals. These include key elements such as energy, water, land use, ecosystem conservation, as well as impacts to labor, greenhouse gas emissions, and carbon footprints.

Not only is there a push for increased transparency within the public sector, but there are movements underway from the investment community to change traditional corporate financial reporting to include a broader scope.



*Companies are being pushed beyond compliance reporting towards greater transparency and publicly visible goals.*

- **Companies are Anticipating Future Trends** – As part of the planning process, companies are anticipating future needs, concerns, trends and implications on the viability of their businesses and establishing plans to not only react to change, but to proactively leverage these new drivers to create sustainable competitive advantage. A new frame of reference creates new opportunities.

*These societal trends are creating new opportunities for differentiation and value creation.*

- **Focus Beyond Shareholders to Stakeholders** – Companies are beginning to engage a broad base of stakeholders... including detractors! They are listening to concerns and interacting with a range of stakeholders to identify practical solutions. At the same time, groups that may have once been viewed as extremist are finding that they can better effect change by engaging in dialogue with business to work towards realistic alternatives.

Companies are also recognizing that their own employees are energized by being part of an innovative company that has concern for the well-being of the world and future generations. These organizations are reaping benefits through employee engagement and retention as well as their enhanced ability to recruit the best talent.

*Companies are moving beyond serving shareholders alone, to engaging a broad range of stakeholders... even detractors... to collaborate on solutions that drive value.*

Stakeholders include not only traditional partners such as suppliers, customers, employees and shareholders, but also communities, governmental agencies, and non-governmental organizations (NGO's) among others.

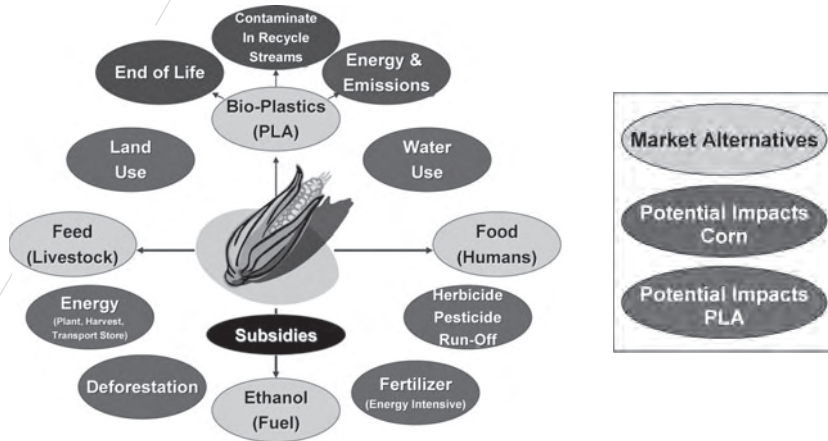
## Complex Issues

As companies move to be more environmentally and socially responsible, they have to exercise great care in making both decisions and claims. Trying to position a product or process as being more sustainable or environmentally “superior” to an alternative takes careful analysis. It is easy to market something as “green”, but claims need to be backed by data or the company risks embarrassment, possible backlash and a tarnished image.

A current example which illustrates the complexity of these decisions would be the use of bio-based polymers derived from corn. While on the surface, this would appear to be an attractive alternative to petroleum-based polymers, there are other factors to consider when determining the overall environmental impact:

- Total energy to produce the bio-based polymer including planting, harvesting, transport, and processing, as compared to the petroleum-based alternative
- The use of land and deforestation
- Impacts to food and feed availability and pricing

- The use of chemicals such as fertilizer (which is energy intensive to manufacture) and pesticides (which run off into streams)
- Water use in irrigation
- Ability to recycle and the implications of bioplastics in the recycle plastics stream
- Biodegradability vs. compostability
- Bioengineering of plants to improve productivity



*Companies will be held accountable for data to support their “green” claims. Ideas that may appear to be great on the surface will need to be evaluated broadly to truly understand their sustainable value.*

This is not to suggest that biopolymers from corn are better or worse than their petroleum-based alternatives; it simply highlights the breadth of considerations currently under debate. Ultimately, the answer will require broad-based analysis and life-cycle assessment versus a range of alternative solutions.

### **The Bottom Line**

- Sustainability is a concept by which companies can evaluate their decisions through not only a financial lens, but also a wider, holistic view that considers environmental and societal implications, all aligned within a common strategy.
- Companies are engaging a broader array of stakeholders in an effort to align their strategy to create not only shareholder value, but stakeholder value.
- Businesses are recognizing that such a view is creating the opportunity for sustainable competitive advantage, not only by shifting resources and energies from risk management to value creation, but also by identifying solutions to emerging global needs.
- Companies recognize that such actions not only attract positive press and enhance their corporate image, but also enable them to recruit and retain the best talent from the next generation of graduates.
- Companies are finding that they are faced with a much more complex set of data and decisions, and that they need to be careful that their claims take in to account the full implications of their actions and are supported by data.

### **How Can PolyOne Help**

PolyOne is a global solutions provider and we are well positioned to support our customers in their development of sustainable solutions. Because we are not tied to any single polymer or chemistry, we can assist in identifying the right solution for your application needs. From unbiased material selection to processing improvements to supply chain options, PolyOne has a solution for you. Visit our Web site at [www.polyone.com](http://www.polyone.com), or e-mail us at [biosolutions@polyone.com](mailto:biosolutions@polyone.com).