

Rethinking operations



Finding value through design

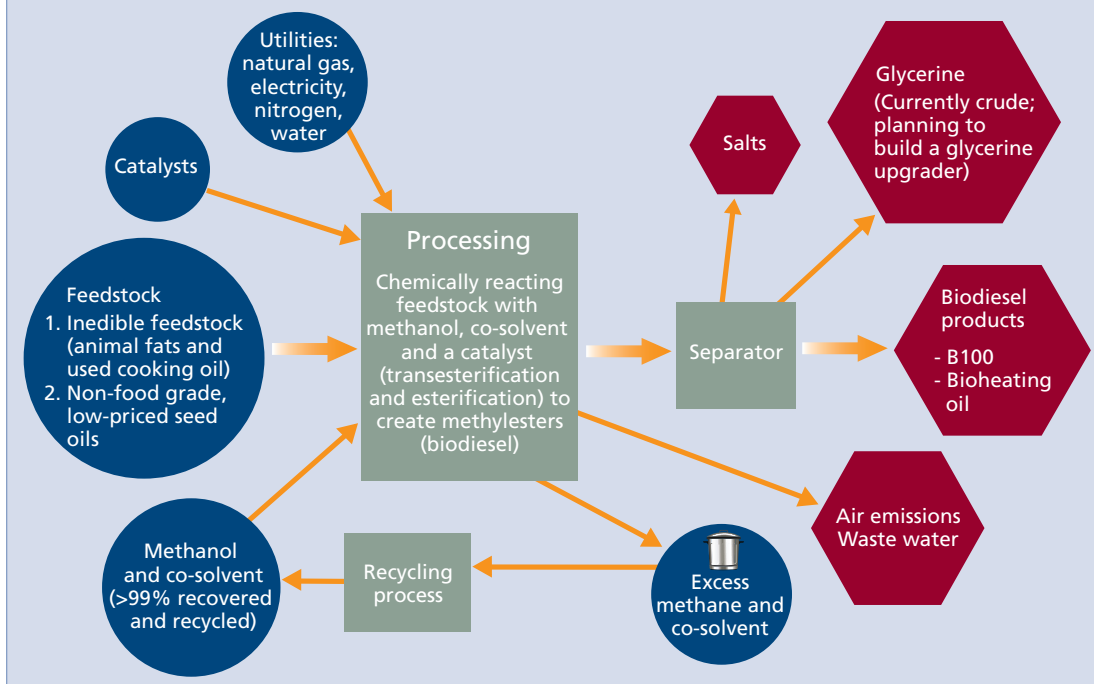
Green design principles offer exciting possibilities for agriculture. New processes could be developed to mimic nature. Waste products could be turned into valuable byproducts.

Anaerobic digestion is an example of technology that reuses water, generates electricity from waste and creates usable byproducts. Other designs promote reuse of materials to prevent them from entering the waste stream. Rethinking the design of your operations, either on your own or with professionals, could uncover opportunities to minimize environmental impact and become more efficient.

Making it work – Biox Corporation

Biox Corporation is turning waste into profit. At 67 million litres per year of production capacity, Biox's Hamilton, Ontario, plant is Canada's largest commercial-scale biodiesel operation. Biox's proprietary and patented process converts low-value feedstock, such as animal fats and used cooking oils, into biodiesel – a renewable, non-toxic, lower-emission replacement for petroleum diesel. Biox uses environmentally sound processes in its operation.

www.bioxcorp.com





Did you know?

Biomimicry is a discipline that studies and emulates natural forms, processes and ecosystems to create sustainable and healthier solutions and technologies for humans. From the creation of Velcro by observing plants to learning how to sequester carbon by studying human lungs, biomimicry offers solutions for the future.

www.biomimicry.net;
www.biomimicryinstitute.org

Cradle to cradle

Cradle-to-cradle thinking analyzes natural systems to design products, facilities and equipment that can be recycled into new products of equal quality. It replaces the cradle to grave thinking that is based on creating products that will end up as waste.

Xerox has developed a copier that can be dismantled into component parts and recycled into new equipment when it's no longer being used. The BMW Z1 Roadster has plastic side panels that come apart like the halves of a walnut shell for easy recycling.¹¹ The straw from Canadian oilseed flax has been used to replace fibreglass in polypropylene-moulded auto parts.¹² Could a car's side panels be made from bioplastic? Could a photocopier be made from biomaterials? What role can agriculture play in smart, sustainable design? Imagine a future where you have eliminated waste and all of your outputs can be recycled or reused.

Design for the environment

Design for the environment refers to using smart design principles to minimize the environmental impact of products throughout their life cycle. It involves three major design elements:

environmental manufacturing, environmental packaging, and disposal and recyclability. Rethinking your own systems and processes can identify gaps where green design can save money, reduce toxic materials, prevent energy loss and reuse materials. Life cycle assessment, which assesses the overall impact of products or services throughout their entire life cycle, is an input to design for the environment. Agribusinesses interested in learning more about product life cycle analysis can contact organizations like the Guelph Food Technology Centre in Ontario.

Finding value through marketing

Whether you are already taking steps to minimize your environmental impact or are considering new green initiatives, you may have an opportunity to have your brand reflect your green priorities and practices.

Marketing your products or branding your business as green requires careful consideration. Consumer confidence in green product claims is waning. According to Mel Phadtare, Director of Integrated Sustainability for Junxion Strategy, the total number of green products has increased by 79 per cent in the last two years, with the rate of green advertising tripling in the last three years. Of those products identified as green, Phadtare says, only two per cent are accurate or genuine in their claims.¹³ Consumers are increasingly distrustful of green claims and concerns about greenwashing are growing.

Greenwashing occurs when a business spends more time and money on green claims than on green business practices. Consumers visiting www.greenwashingindex.org can post advertisements or rate them on how authentic or verifiable they are. The site has three goals: to increase consumers' ability to evaluate environmental marketing claims, to hold businesses accountable for their claims and to encourage legitimate sustainable business practices.

As you examine opportunities for green branding, consider the role of authenticity and verifiable claims. There are benefits to green marketing, including meeting consumer needs and building a strong reputation and brand for your company. What can you do to stand out and earn consumer confidence in an era of growing distrust? Could you turn current practices or innovations into a profitable branding strategy?

Did you know?

In 2008, Save-On-Foods maximized how trailers were loaded and eliminated over 1,000 trips. In 2009, Coca-Cola Enterprises ordered 150 diesel-electric hybrid tractors and 35 Kenworth hybrid straight trucks.¹⁴

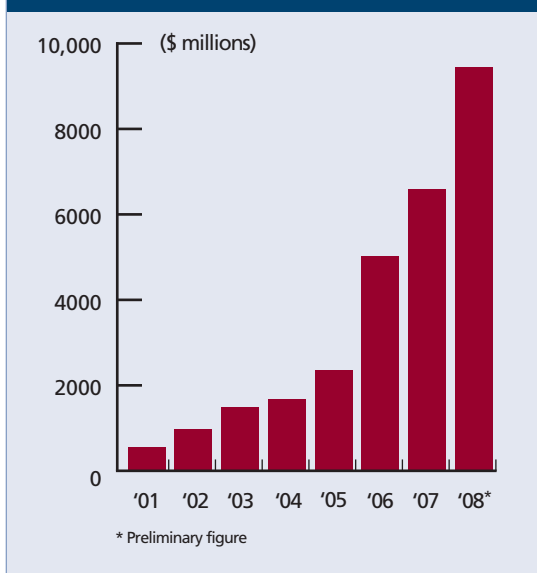
Finding value in transportation

Your system for transporting goods may have been affected by volatile fuel costs and concerns over emissions. Some agribusinesses are already responding by adding hybrid trucks to their fleets or choosing lighter packaging. Some are sourcing goods closer to home. Others are finding new markets for their goods. Many are increasing costs to end users. Green thinking can help you remain competitive in the face of rising transportation costs. Can you be part of a local value chain or a sustainable value chain? What can you do to learn what other businesses in your supply chains need?

Did you know?

The Conference Board of Canada's downloadable publication *Turning Green Into Gold: Green Marketing for Profit* provides ideas for capitalizing on the growing interest in eco-friendly products and services.

Figure 5: Green-tech venture capital investment in North America, Europe, Israel, China and India



Source: Cleantech Group

Finding value through technology

Global businesses face pressures from rising energy costs, growing populations and climate change. Science and technology are providing solutions. Figure 5 shows a significant increase in investment in green technology through venture capital funding in North America, Europe, Israel, China and India. As researchers around the world investigate new technologies for decreasing environmental impact, consider how your agribusiness can become involved in this surge

of innovative thinking. Perhaps you could pilot an initiative or partner to create a new technology that increases your operational efficiency.

Many innovations have already been developed. Buildings with passive design use the heat from the sun, cooling from the wind and geothermal heat from the earth to be energy neutral. Algae are fed carbon dioxide to sequester harmful gas emissions and grow an energy-rich feedstock. Self-sustaining facilities use sun, wind and waste for energy and recycle waste water. Students at San Jose State University built a solar-powered icemaker using \$100 worth of plumbing pipes and a sheet of reflective steel. The device used no electricity or moving parts to produce a large bag of ice from a few hours of sunshine.¹⁵

Re-examining your operational model can uncover opportunities for ecologically beneficial solutions. In an era where science and technology are forging new frontiers and changing the foundations of design, new knowledge can help uncover profitable solutions for your operation.

Did you know?

Green chemistry, also known as sustainable chemistry, refers to processes that replace substances that harm the environment during manufacturing with ones that produce less harmful waste and byproducts. California is leading the way in green chemistry in North America. Some agricultural applications include pesticides, pharmaceuticals, plastics and water purification.

