



ABOVE In the fields at Egypt's Sekem, a fast-growing organic farm

Lessons from emerging markets *by Knut Haanaes, David Michael, Jeremy Jurgens, and Subramanian Rangan*

Organic products were a luxury with little market to speak of when Ibrahim Abouleish founded Sekem, Egypt's first organic farm, in Cairo in 1977. The years Sekem spent honing sustainable cultivation practices paid off, though, in 1990, when it moved into growing organic cotton. Organic produce was entering mainstream Western stores then, and worldwide demand for all things organic began to surge.

There were other advantages to the organic approach as well: Sekem's farming techniques helped reclaim arable land from the Sahara, which had been spreading into the Nile delta. With them, the soil absorbed more carbon dioxide from the atmosphere, decreasing greenhouse gases, and cotton crops needed 20% to 40% less water.

In the bargain, organic techniques lowered the farm's costs, improved average yields by almost 30%, and produced a raw cotton that was more elastic than its conventionally grown counterpart. So, far from being an expensive indulgence, organic cotton offered Sekem a business model that was more sustainable—not just environmentally but financially. In recent years that model has generated healthy revenue growth: From 2006 until the disruptions of the Arab Spring in 2011, the business posted 14% annual increases, and Sekem is now one of Egypt's largest organic food producers.

Rapidly developing economies are often portrayed as sustainability laggards—focused more on raising their citizens out of poverty than on protecting the environment. It's true that their regulatory bodies can be weak, hesitant to impose

Making Sustainability Profitable

restrictions on newly liberalized markets, or resentful of pressure from industrialized nations. But the developed world has never had a monopoly on visionaries, as Sekem's story illustrates. And in markets where the pressures of resource depletion are felt most keenly, corporate sustainability efforts have become a wellspring of innovation.

That's what we found in 2010, when the Boston Consulting Group joined forces with the World Economic Forum to identify companies with the most effective sustainability practices in the developing world. The study involved reviews of more than 1,000 companies ranging in size from \$25 million to \$5 billion, from a wide array of markets and industry sectors, and included interviews with almost 200 executives. From the pool of companies studied, we identified more than a dozen "champions," whose sustainability practices were highly effective, innovative, and scalable.

These organizations are located in countries across Latin America, Africa, the Middle East, Asia, and the South Pacific. Some pursue sustainability out of pragmatism, some out of idealism. But regardless of their motivation, they have consistently generated above-average growth rates and profit margins.

To make their environmental efforts pay off financially, these companies have, broadly speaking, followed one or more of three main approaches. First, many, like Sekem, took a long view, investing in initially more-expensive methods of sustainable operation that eventually led to dramatically lower costs and higher yields. Others have taken a bootstrap approach to conservation: They started with small changes to their processes that generated substantial cost savings, which they then used to fund advanced technologies that made production even more efficient. Last, some have spread their sustainability efforts to the operations of their customers and suppliers, in the process devising new business models that competitors find hard to emulate.

Collectively, these companies vividly demonstrate that trade-offs between economic development and environmentalism aren't necessary. Rather, the pursuit of sustainability can be a powerful path to reinvention for all businesses facing limits on their resources and their customers' buying power.

Taking a Systems Approach

It's hard for companies to recognize that sustainable production can be less expensive. That's in part because they have to fundamentally change the way they think about lowering costs, taking a leap of faith, as Sekem did, that initial investments made in more-costly materials and methods will lead to greater savings down the road. It may also require a willingness to buck conventional financial wisdom by focusing not on reducing the cost of each part but on increasing the efficiency of the system as a whole.

Zhangzidao Fishery Group, based in Dalian, China, is a good example. The group has adapted an ancient method that is now called integrated multitrophic aquaculture (IMTA). It's an approach analogous to companion planting: Rather than trying

The innovators adopt a different mind-set about costs: They focus on increasing the efficiency of the system as a whole.

to maximize the production of a single species, gaining profits through economies of scale, as most traditional "ocean ranchers" do, Zhangzidao creates a balanced ecosystem of scallops, sea cucumbers, sea urchins, abalone, and other interlinked species.

Some species provide food for the others, so fewer have to be fed from external sources. In this way Zhangzidao reduces waste by converting fish by-products into harvestable crops. What's more, unlike

single-species fish ranching, IMTA does not exhaust seabeds, eliminating the need to move cultivation from bed to bed to allow depleted areas to recover.

Zhangzidao has also adopted a simple practice called bottom sowing—similar to pruning—in which scallops are moved from overcrowded beds to more sparsely covered areas to increase growth rates, weights, and yields. Bottom sowing reduces disease and, like organic farming, creates a natural carbon sink that absorbs more greenhouse gas than it releases. And with the savings from its low-tech conservation efforts, the company has funded investments in cutting-edge technology for artificial reefs that foster marine life, for seaweed propagation, and for seafloor algae farms.

A focus on increasing profitability per unit of cultivation, rather than per species cultivated, has led to growth and profit levels that are nothing short of astounding. From 2005 to 2010, Zhangzidao sustained a compound annual growth rate of 40%, in an industry where the average is just 13%, as well as EBITDA margins of 31%.

Taking the Low-Tech Road

Unlike Western companies, which often try to mitigate the environmental damage done by their operations through costly retrofits or by underwriting the development of breakthrough technologies (think catalytic converters and smokestack scrubbers), many companies in emerging markets start small. They begin by conserving their most constrained resource with a series of minor adjustments to their operations.

Costa Rica's largest beverage bottler, Florida Ice & Farm, for instance, started by simply repairing water leaks in its production equipment in a timely fashion. In the Philippines, the Manila Water Company similarly focused initially on water lost to leaks or illegal taps of its pipes. Such savings are hardly trivial: From 1997 to 2010, the company recovered an amount of water equal to the supply from a medium-sized dam, which would have cost an estimated \$750 million to build.

As low-cost moves reap larger and larger returns, businesses can expand conservation efforts to other parts of their operations. Eventually, savings can mount high enough to fund purchases of expensive technologies and R&D initiatives that many Western companies might have started with.

Shree Cement is a case in point. When it began operations, in 1985, Shree had no explicit plan to promote sustainability. Like

electricity on the open market, which it generates at some of the lowest prices in the region.

A few of these improvements required major capital investments, but most involved just engineering work and a willingness to challenge conventional thinking. In total, they've cut expenses and emissions substantially. Shree produces a ton of cement using 9% less energy than the average Indian manufacturer and 15% less than the

to Indian conditions. It taught customers how to use them effectively through precision farming, which increases output by optimizing the balance between fertilizers, pesticides, water, and energy. In this way the farmers could use less water but still increase yields.

Most small farmers could not afford to purchase Jain Irrigation's systems without financing, however, and banks were reluctant to grant credit to illiterate villagers. So the company helped its customers apply for government subsidies. It also made a daring move into the wholesale agricultural commodities trade—promising to buy some of the crops its customers grew with its equipment at a set price and then reselling the produce. The guarantees in turn persuaded the banks to lend to the company's customers.

Jain Irrigation had no expertise as an agricultural wholesaler, and it could have faced a revolt from shareholders for straying so far from its core. Nevertheless, customizing its business model so radically to local needs has enabled the company to outperform other suppliers of irrigation systems. From 2006 to 2010, the company experienced compound annual revenue growth of 40% and EBITDA margins of 18%—both well over industry averages. Unlikely as it may seem, 20% of revenues now come from its agricultural wholesale business.

In Chile, Santiago-based Masisa is experimenting with a way to expand demand for its sustainably harvested wood. It has created a network of local carpenters to whom it gives training and special access both to its lumber and to Western customers willing to pay a premium for furniture made from it. Masisa aims to build demand for its products in remote, underdeveloped areas of the country, while giving the carpenters an incentive to use sustainable wood rather than buy from illegal cutters. Having started locally in 2009, Masisa has already replicated the model in Argentina, Brazil, Mexico, and Venezuela.

In Brazil the natural-cosmetics company Natura has built a unique competi-

By extending their sustainability efforts to customers' operations, firms have achieved impressive growth.

many other Indian companies, it invested in a diesel-generating plant to protect itself from disruptions to the supply of electricity, which is unreliable in India. But unlike most of its competitors, it experimented with tweaks to production processes to decrease the amount of electricity it needed.

As small changes added up to significant savings, Shree's engineers widened the scope of their conservation, turning their attention to ways to reduce the use of the company's kilns. The kilns, which consumed large quantities of coal to generate high temperatures, produced a material called clinker, which was cooled and mixed with a few stabilizing ingredients to make cement. By replacing some of the clinker with waste coal slag and fly ash recycled from the kilns' operation, Shree's engineers could make a cement suitable for certain applications and save a lot of energy.

Eventually, Shree could afford to invest in more-sophisticated technologies, such as one that recycled the hot exhaust from the kiln to power a separate electrical plant. Finding that it could generate electricity much more efficiently than the local municipal power plant, Shree built larger, coal-fired plants, whose production more than covers the company's growing needs. Deregulation in India's power industry has made it possible for Shree to sell its excess

global average. Its cost-reduction efforts, so critical in a commodity industry, have helped the company outpace rivals and expand profitably. From 2005 to 2009, Shree's revenues grew five times faster than the global average for the cement industry. Today, Shree, which had 2009 revenues of \$809 million and stunning EBITDA margins of 39% from 2005 to 2009, is one of the top five cement manufacturers in India.

Taking a Broader View

Impressive as the cost efficiencies are, more intriguing is the growth that companies in emerging markets have gained by extending their sustainability efforts to the operations of their customers. Companies are building unique business models by boosting customers' buying power and, in the process, creating interdependencies that are difficult for competitors to copy.

Consider Jain Irrigation Systems, in Jalgaon, India, which began as a supplier of irrigation systems for small farms. Farming in India has traditionally relied on monsoons, which recently have weakened. As water supplies have dried up, farmers have been going out of business. Some have even committed suicide in the face of mounting debt.

To help its customers, Jain Irrigation began adapting micro-irrigation systems



ZHANGZIDAO FISHERY GROUP

Dalian, China

Organic fish farm

By creating a balanced ecosystem in which several species of sea life are cultivated together, Zhangzidao reduces the amount of fish food needed, avoids depleting seabeds, and lowers costs and increases total yields dramatically.

2010 REVENUE
\$340 MILLION

2005-2010
COMPOUND
ANNUAL GROWTH
40%

2005-2010
EBITDA MARGINS
31%



FLORIDA ICE & FARM

San José, Costa Rica

Beverage bottler

This leading Central American company set—and met—the goal of becoming water-neutral in only four years.

2010 REVENUE
\$571 MILLION

2006-2010
COMPOUND
ANNUAL GROWTH
25%

2006-2010
EBITDA MARGINS
30%



SHREE CEMENT

Beawar, India

Producer of cement and electricity

With savings from low-risk, high-return efforts to conserve electricity, Shree has funded increasingly sophisticated moves to reduce energy use and improve production efficiency.

2009 REVENUE
\$809 MILLION

2005-2009
COMPOUND
ANNUAL GROWTH
50%

2005-2009
EBITDA MARGINS
39%



JAIN IRRIGATION SYSTEMS

Jalgaon, India

Maker of irrigation systems and wholesaler of produce

By agreeing to buy some of its customers' unsold produce for a set price, this farm-equipment supplier helped small customers afford its water-saving devices.

2010 REVENUE
\$820 MILLION

2006-2010
COMPOUND
ANNUAL GROWTH
40%

2006-2010
EBITDA MARGINS
18%



NEW BRITAIN PALM OIL

Mosa, Papua New Guinea

Producer of organic oils, sugars, and meat

New Britain's sustainable methods of agriculture have used 50% less pesticide while increasing yields 1.6% every year for the past 30 years.

2010 REVENUE
\$470 MILLION

2005-2009
COMPOUND
ANNUAL GROWTH
30%

2009
EBITDA MARGINS
34%

tive advantage by forging a similar symbiotic relationship—not with its customers but with its suppliers. The company has worked with rural communities, local governments, and NGOs to develop ways to sustainably extract raw materials. In turn, it teaches those methods to its suppliers, thereby helping them create jobs and increase capabilities in their communities.

In an industry where offering a constant stream of new products is crucial, Natura can compete against large multinationals with a far smaller investment in R&D, thanks to its research partnerships. Products launched in the most recent two years account for a share of Natura's total revenue that is far higher than the industry norm. More than 50% of the 427 products the company launched from 2008 to 2010 were developed through its open innovation efforts.

The Rewards and Risks of Pioneering

It's remarkable how many companies in emerging markets chose, like Natura, to embark on sustainability efforts long before any imperative arose. (For more about the genesis of Natura's business model, see "The Growth Opportunity That Lies Next Door," HBR July-August 2012.) In the process they often gained important first-mover advantages as markets for environmentally friendly goods grew.

New Britain Palm Oil was decades ahead of its time when in 1963 it developed integrative pest management that introduced natural alternatives to some chemicals while increasing crop yields. New Britain also chose to avoid planting altogether on the peat lands and in the rain forests of the biologically diverse islands of Papua New Guinea. As it expanded in later years, it leased its fields and partnered with small farmers rather than buying land outright. As a result it helped reduce local poverty and built close ties with the community, which allowed it to avoid the kinds of conflict that have hindered development in other palm-oil-producing countries.

Over the years the company has created a completely traceable supply chain—something that is greatly valued by B2B customers who are willing to pay higher prices for sustainably sourced raw materials. This favorable position has helped New Britain maintain a muscular 30% annual growth rate in recent years and achieve 34% margins.

In a world of scarcity, companies will need to consider their total return not just on assets but on resources.

Florida Ice & Farm was also ahead of the curve when in 2008 it set the extraordinary goal of becoming water-neutral in just four years. It was reacting not to any immediate environmental threat, since water is abundant in its tropical location, but to public concerns. Traditionally, bottlers use large amounts of water in cleaning the bottles and in the heating and cooling phases of production, as well as in the drinks themselves.

Bringing the latest technology and process innovations to bear, the company reduced the amount of water it took to produce a liter of beverage from 12 to 4.9 liters. In 2009 the company's Pepsi bottling plant, which it had acquired two years earlier, became the world's most water-efficient, using just 2.2 liters of water per liter of beverage. To offset its remaining consumption, Florida Ice has piloted community conservation efforts and helped engineer improvements to the national water infrastructure.

Keeping employees focused on such ambitious goals can be a challenge for organizations. Florida Ice has addressed it by developing a balanced scorecard that includes nonfinancial metrics such as the number of community service hours that employees spend planting trees that protect watersheds. It ties the compensation of its CEO and all other executives to the firm's performance not only on financials

but on environmental and social efforts, including those aimed at reducing binge drinking and the sugar content in soda. Moving toward a triple-bottom-line accounting system has not slowed the company's growth. The compound annual growth rate of 25% and EBITDA margins of 30% it saw from 2006 to 2010 were both twice the industry average.

In South Africa, food retailer Woolworths (no relation to the old U.S. five-and-dime) has instituted a similar balanced scorecard. Each business unit is rated on key "green" performance indicators, which are linked to compensation. Natura uses a carrot rather than a stick, training managers to identify socio-environmental challenges and turn them into business opportunities, and granting bonuses on the basis of environmental and social performance.

READY OR NOT, we are moving to a world of scarce resources, in which companies will increasingly need to consider their total return not just on assets and equity but on resources. They will have to monitor how much water, soil, and other natural resources they consume, as well as the payback they get from them. Companies that fail to calculate this equation will find themselves at the mercy of price increases and volatility, regulation, and social pressures, while those that master it will enjoy competitive advantage and gain market share. ♣

HBR Reprint R1303K

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