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The Benefit Multiplier of Investing in Nature

Solving Business Problems and Realizing Multiple Returns through Working with Ecological Systems



About This Business Brief

The purpose of this business brief is to show that leading companies—around the world and across sectors—are citing business reasons for investing in nature-based solutions and the restoration of natural systems. The illustrative case examples on the following pages show that early corporate movers are now engaged with green infrastructure projects as well as ecological restoration initiatives that work *with* natural systems and address business issues and challenges, or realize new opportunities. Many of these early adopters are finding that natural systems-oriented initiatives are benefit multipliers, which—when designed well—make business sense while also offering community and environmental benefits. It is time for a cohort of fast followers to explore this body of work, and consider crafting business solutions that work with, restore, and maintain the natural systems in which companies are literally situated—with the potential of realizing multiple returns and benefits.

The focus of this brief is on corporate initiatives that are conceived of, financially supported by, and implemented within the company itself—and are *not* driven by regulation. This brief does *not* review the broader public policy context that exists in various countries, such as the United States, which enables private capital investment, including through compliance options. This policy context has been well documented in a series of reports and articles by [Forest Trends](#) and [the Ecosystem Marketplace](#). While we urge business decision makers to understand and assess real estate and risk-management opportunities within this public policy- and regulation-enabled context, our focus is on corporate actions around the world that are investing in nature-inspired solutions and ecological restoration for stated business reasons—above and beyond regulatory drivers.

This business brief draws upon both a review of both NGO and academic literature related to corporate investment in ecological restoration, as well as 32 semi-structured interviews conducted in 2015 with thought and practice leaders from the private, public, and non-profit sectors—all of whom work on ecological restoration, green infrastructure, and investments in watershed structure and function.

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Contents

Introduction	3
How Are Companies Starting?	6
Who Is Investing in What?	8
What Is the Takeaway?	17
How Do I Move Forward?	18
Annexes <i>(separate document)</i>	

Introduction

Companies are now making investments in natural systems as business solutions—to operational challenges, for real estate portfolio optimization, and due to sourcing as well as supply chain management issues. Like *aikido* masters, these business leaders have perceived that leverage is gained from working *with* dynamics that are already underway. Investing in natural systems can also offer benefit multipliers—for companies, ecological systems, and local residents alike. The question increasingly is why businesses have not invested in nature-inspired solutions and ecological restoration earlier.



Nature-based business solutions and investments in ecological restoration can be far less expensive than alternatives. What's more, investments in natural systems-based approaches can be equally effective and also more attractive for local surrounding communities—while offering multidimensional returns on investment (ROI). The cases presented in the following pages illustrate all of these points.

For example, **Dow** now has almost two decades of data from the United States to show how well a wetland can naturally filter water and improve water quality—at a tiny fraction of the cost of a built wastewater-treatment plant. **Royal Dutch Shell** has come to the same conclusion and is investing in large-scale wetland-based solutions to water management in the Middle East. **Coca-Cola** has concluded that maintaining a key input to their product (water) requires corporate investments in reforestation and revegetating lands far upstream from bottling facilities, even though lands are owned by others. **Apple** sees innovation and leadership opportunities by investing in trees and sustainable forest-management approaches that can balance and thus address the inputs for packaging. **Danone** has also been innovating and leading on the increasingly business-relevant issue of climate change, through trifecta-play investments that sequester carbon, benefit local people and economies, and introduce greater resilience into natural systems—within an approach that scales positive impact by enabling other companies to also invest. **Allegheny Power** has rationalized its real estate portfolio, while concurrently mitigating operational risks and realizing significant revenues and tax credits, by asking what parcels of land could do for the company versus what it could do for the natural environment. The list goes on, as laid out in the following pages and annexes.

The business cases made to support these investments vary based on the specifics of the situation. In some companies, such as Dow and Shell, the let's-work-with-nature approach is more cost- and operationally effective. End of case. In other companies, the fundamental drivers of investments in ecological restoration were the clear dynamics associated with demand and supply of a key natural resource input—such as watershed-wide, total water demand, and supply challenges. In other situations, investments make business sense when considered in relation to a growing set of threat multipliers, such as market demand trends (for timber, among many other commodities) or a decrease in reliable, high-quality supplies of essential raw materials, particularly when combined with climate change, water stress, and other challenges that present a growing array of risks to supply chains.

In many companies, once nature-based solutions to business issues are identified, then building a persuasive final business case is often a mix—as UCLA's Ed Leamer has [asserted](#) is essential for building any business case—of “pictures, words, and numbers, in that order” (though pictures can be graphs representing patterns). The spreadsheets and financial assessment are key—and they should reflect low numbers because investments in infrastructure are commonly seen as adversely affecting the bottom line, at least in that quarter.

However, less widely appreciated in building the business case is the role of visual imagery. These pictures can include actual photographs that people can hold in their minds, or graphs that illustrate effectiveness of solutions. For Dow, [a picture of three bottles of water](#)—showing the relative viscosity versus clarity of various water-treatment solutions perfectly illustrated the effectiveness of a substantially cheaper nature-based solution to addressing water quality challenges (relative to a traditional waste water treatment plant solution). The business case was made.

Yet, despite the growing set of case examples of nature-inspired and natural-system restoration initiatives, as laid out in this brief—and the increasing ability of people in companies to build the business case through a combination of pictures, words, and numbers—it is still only a relatively small set of companies that are currently investing in nature-based solutions to business challenges and ecological restoration opportunities.

This relatively slow (though accelerating) uptake to date is not surprising in light of innovation diffusion theory, stemming from the work of Everett Rogers and others. Based on this research, the rate of innovation diffusion is expected to be a function of the relative advantage of new approaches, compatibility with existing values and practices, simplicity and ease of use, ease of testing (“trialability”), and observable results.

Investing in nature-based solutions *does* commonly offer relative advantages, ease of use, and testability. However, these ecological solutions can be perceived as incompatible with an engineering mindset and expected practices—in which certainty and assurances are the focus—while also extending beyond the customary training of engineers.

In addition, obstacles to nature-based solution uptake exist in terms of internal corporate dynamics. New expenses can be hard to justify within companies, even if they result in long-term savings. Corporate representatives reported, in the interviews conducted for this paper, that experienced business managers are often reluctant to lead nature-based solutions projects, particularly if they lack experience with the issues. Such a project hardly seems like an assured path to promotion—just as any new approaches (ones that are untested within a specific company) are often skeptically viewed as potential career risks.

These hurdles make it all the more remarkable that a growing number of corporate innovators and early adopters are investing in the (literal) foundations of their business—that is, the very ground on which key business facilities sit, or from which suppliers source inputs.

The reported results, though some are preliminary, are often positive and measurable across multiple metrics, including financial, community, and environmental. Illustrations of such measurement approaches have been developed by [Restore the Earth Foundation](#), [Commonland](#), and [Dow in collaboration with The Nature Conservancy \(TNC\)](#) through the [Ecosystem Services Identification & Inventory, or ESI](#), among others. These and other such tools can show how nature-based solutions can offer significant quantitative, benefit-multiplier results and advantages over alternative approaches.

With both a set of case studies and tools, the takeaway for corporate decision makers is to systematically start asking:

- Are there opportunities to more efficiently run our business, by working with and gaining leverage from natural systems?
- Are there natural solutions (in every sense of the word) to business challenges?
- Can investments in maintaining, restoring, or [mimicking nature's systems](#) create less expensive and more effective solutions to business operational problems?
- Can these investments offer multiple opportunities and upside, in terms of a benefit multiplier for local residents and regional communities, as well as for natural systems—in addition to financial return on investment?

Our intent is to offer brief case examples, with the goal of inspiring further investigation and adoption of nature-based solutions as well as investment in restoration of nature by businesses.



How Are Companies Starting?

The spark for this new thinking, in many cases, came from the simple act of pulling up another chair at a brainstorming meeting and inviting a biologist, ecologist, or hydrologist to sit down.



Natural scientists often see both the problem and solution spaces from different angles than others within companies. Rather than maintaining only a tight focus on facilities and machines, these scientists consider business infrastructure (such as buildings, roads, harbors, or other built infrastructure) within the natural context in which they are located. They see the surrounding grasslands, forests, wetlands, and broader watersheds with an analytical lens that considers how species' composition and distribution may affect the flow and recharge of natural aquifers, produce oxygen (through plants and trees), sequester carbon, mitigate climate change, and offer other advantages to people and societies.

From an ecologist's vantage point, the natural environment is *not* a business limitation. Rather, it is viewed through the same lens that an engineer considers gravity: a reality to consider in designing a built structure or business approach.

Ignore gravity at your own peril. Similarly, ignore natural systems and you may miss a slew of business solutions while also stumbling on a range of business challenges related to access to water, clean air, climate change, sourcing of raw materials, and many other issues of concern.

The natural systems in which business facilities are sited and operate are simply another system companies need to be attuned to—not just for problems, but also for solutions.

All businesspeople recognize that they must be attuned to regulatory systems.¹ So too should corporate decision makers be tracking and assessing the natural systems in which a company literally sits.

¹ It is noteworthy that in some countries there exists supportive public policy and in some cases regulation related to investing in restoration, as has been well documented in a series of reports and articles by [Forest Trends](#) and [the Ecosystem Marketplace](#). For example, in the United States, companies can purchase mitigation bank credits to meet compliance needs. If a credit is purchased from an approved restoration project, the permitting time can be significantly decreased, while also addressing issues associated with liability for U.S. Clean Water Act-related obligations. For more information, please see the various reports issued by [the Ecosystem Marketplace](#).

For example, prior to siting a new facility—or while managing an existing facility, real estate portfolio, or even supply chain—businesspeople should ask a range of questions, such as:

- **Is this site, and broader region, prone to natural systems-related problems?** These could include flooding, storm surges from the ocean, droughts, excessive draw-down of groundwater beyond current recharge rates of natural aquifers, water quality problems, or other nature-related issues.
- **Do our corporate siting, facility operations, and supply chain management teams assess the ecological and hydrological context in which they operate** with the same due diligence that they examine zoning and land use, as well as tax breaks and labor/employee availability?
- **Does our company assess opportunities to leverage the momentum of natural systems to address business challenges or realize new opportunities?** For example, wetlands can be expanded or created to provide buffers from storms, improve water filtration, sequester carbon, and create more open space for employees and adjacent communities, as well as habitat for migratory birds and other species.

With these kind of questions, new business-relevant insights have come into clear focus for a growing set of companies.

In many cases, these solutions address the fundamental reality that businesses are built on, and within, natural systems. By considering these systems, new opportunities, solutions, and returns are being generated, as the cases below show.



Who Is Investing in What?

There are four primary business issues that are being addressed through investments in nature-based solutions, as the table below shows:²

Business Problem & Question	Business Units Involved	Illustrative Examples
How can we ensure that our company can maintain access to essential raw materials and key inputs?	Supply Chain Management Operational Management	AB InBev Coca-Cola IKEA Kingfisher
How do we manage our wastewater effectively and efficiently?	Operational Management Regulatory Compliance Stakeholder Engagement	Dow Royal Dutch Shell
How do we optimize returns on the overall real estate portfolio?	Real Estate Portfolio Management	Allegheny Power
How do we execute on our corporate environmental commitments and policy with a focus on sound investment and strong financial, social, and environmental ROI?	Corporate Strategy Brand Investment Portfolio	Apple Danone Mars

² Additional cases can be found in the Annexes to this report—which is in a separate document—as well as at the [Natural Infrastructure for Business website](#) and the [Natural Capital Business Hub](#), among a growing set of other related green-infrastructure websites.

Question: How do we ensure that our company can maintain access to essential raw materials and key inputs?

Answer: Invest in the structure and function of the natural systems that produce the inputs on which your company relies.



For the **Coca-Cola Company**, ensuring access to water is a core business and multilayered issue—one that includes the legal right to draw water, the maintenance of local community support to use water in the area, and the actual availability of water to draw. Loss of any one of these components can translate into operational disruptions or even corporate stranded assets.

The complexity of these issues came into clear focus in 2004, when the company lost access to water for its Kerala, India, bottling plant and ended up with a stranded asset, disrupted operations, and a tarnished reputation.

Both in response and looking forward, The Coca-Cola Company crafted a multidimensional [corporate water stewardship plan](#). Their approach was far more diversified than a buy-more-water-rights approach. Rather, the company focused not just on efficient water use within their own facilities, but also on overall water availability in the watersheds on which they relied—factoring in the demand for water by all water users within the context of total water supply. In watersheds and basins with water challenges and risks, the company looked to nature-based solutions for investments that would improve supply through improved watershed structure and function.

Notably, the plan called for investments on lands that were not owned by the company itself. As such, Coca-Cola was looking beyond its own corporate fence-lines to improve upstream watershed structure and function, as well as overall aquifer recharge and water access for all in the area.

Overall, the company's [goal](#) to be water neutral by 2020 has included significant [investments](#) in watershed restoration and protection initiatives, and was launched in collaboration with a range of organizations.

For example, in California's Sierra Nevada mountains, Coca-Cola has given about [US\\$200,000 for watershed restoration in the Indian Valley](#), the headwaters of the Mokelumne River that supplies water to Coca-Cola's bottling plant in San Leandro. In partnership with several other organizations, the money has been used to create natural "soil plugs" within upland streams, in order to have the water pool up in the meadows. This basic restoration investment allows the meadow to hold water, which in turn enables water to soak into underground aquifers while also nourishing native plants and habitat. Such efforts improve overall water availability for all users—both residential and industrial—while concurrently contributing to the company's license to operate through investing in solutions to overall water problems in the area.

This systemic approach to solving problems at the source is the business rationale that underlies the company's US\$1 billion investment in 382 water-related projects at facilities around the world as part of its [“water replenishment” strategy](#). The wide range of projects that Coca-Cola has funded reflects a nuanced understanding of how water cycles through different ecological systems, such as:

- In Texas, Coca-Cola has invested in **removing non-native plants and planting native grasses** to restore grasslands in the Brazos and Trinity Rivers regions, which in turn increases water quality and quantity to municipal water supplies for Dallas, Fort Worth, and Waco, Texas.
- In Michigan, the company is supporting farmer adoption of new practices, such as **on-farm wetland restoration, low- or no-tillage agricultural practices, sustainable corn production, and removal of invasive species**—all of which aim to increase infiltration of water into the watershed and improve the water quality of the Paw Paw River.
- In Georgia, Coca-Cola is collaborating with organizations to encourage farmer adoption of remote **soil-moisture monitoring and precision irrigation management** to save water by irrigating only when needed, which has saved about 154 million liters of water per year over 1,000 acres.

The full list of projects and on-the-ground partners is much longer, and offers the clear message that Coca-Cola sees investing in nature as an important element of its business and to retaining access to key inputs.



Anheuser-Busch InBev (AB InBev) has arrived at a similar conclusion as Coca-Cola about the importance of well-functioning watersheds and the natural systems from which they draw water. Therefore, AB InBev has [committed](#) to “engage in watershed protection measures ... in partnership with local stakeholders” at 100 percent of its facilities located in key areas in Argentina, Bolivia, Brazil, China, Mexico, Peru, and the United States. This corporate commitment is translating into on-the-ground action.

For example, AB InBev partnered with the [World Wildlife Fund](#), local communities and governments in the Corumbá-Paranoá Basin, which provides the water used by the company's Brasília brewery. Among the activities included in the [initiative](#) is the planting of 5,700 saplings in the region.

In addition, AB InBev is working in the Jaguariúna region of Brazil, in collaboration with [The Nature Conservancy](#) (TNC), which provides a portion of the water to the greater São Paulo region as well as the company's beverage facility. Just as in the other Brazilian basins, work is underway on identifying the most important areas in which to restore ecological systems to improve natural water systems, particularly the filtration of water into natural aquifers, which recharges groundwater systems, in turn improving local water supply. Of course, given AB InBev's bottling plant in the region, this water supply is also a core business issue and essential to the plant staying operational.



Companies beyond the beverage industry are also investing in the natural systems that produce key business inputs. For example, **Kingfisher**—the largest home-improvement retailer in Europe—is working toward [global net reforestation](#). The company [states](#): “We aim to protect forests and our timber supplies by taking a restorative approach, creating more forest than we use.” Therefore, Kingfisher has launched projects in China, the U.K., Poland and Spain to “improve forest management, benefit biodiversity, and get local communities involved.”

The company’s timber demand for the goods that it sells means that investing in wood supply flow will mitigate against decreasing supply amidst growing overall demand and rising timber prices. The company expects these actions to translate into financial savings for Kingfisher, which the Boston Consulting Group [estimates](#) to be between £45 to £60 million (US\$64 to US\$85 million) per year.

Kingfisher’s CEO is clear on the rationale for these actions, [stating](#): “This is revenue-generating for us and we shouldn’t be shy about saying that. We have to make a business case for it.” In a [report](#) on their “net-positive impact” work, Kingfisher [lays out the business case](#) for this reforestation work and other efforts as:

“Net Positive means not just preventing deforestation, but working towards net reforestation. It means helping create homes that go beyond zero carbon to become generators of their own energy. It means innovating new business models, products, and services that are net-positive by design. ... Net Positive will be good for our business. It will enable us to secure the resources that we use, unlock new opportunities, and to drive growth. ... Today, the system is broken: The use of resources worldwide is outstripping supply.”

Overall, these commitments are about sourcing and supply chain management over time, as well as maintaining brand and reputation as a company that takes seriously stakeholder (and, increasingly, investor) concerns about deforestation, and also the linkages between cutting down forests and releasing carbon that drives climate change.

The key to the long-term success of these goals will be not only maintaining overall forest cover, but also ensuring that those forests maintain biodiversity and ecological structures that enable the ongoing flow of various [ecosystem services](#) from which local communities derive benefit.



Also relying on wood for its business, **IKEA** has committed to being “[Forest Positive](#)” by August 2020, meaning that the company “will have continued full compliance with our forestry requirements and promote the adoption of sustainable forestry methods beyond our own needs and across the industry.” This work, the company asserts, will also contribute to ending deforestation.

To support these commitments, IKEA has put in place supply chain standards and management practices that track where raw materials come from, as well as whether these lands are managed sustainably, with plans for continual regeneration of trees and forests. In addition, the company is working with the World Wildlife Fund, the Forest Stewardship Council, as well as other companies to [improve methods](#) to credibly provide deforestation-free assurances within their supply chains. As with Kingfisher, long-term success will hinge on the ability to factor in not just tree-cover, but also issues related to biodiversity, ecosystem services flows, and community concerns, such as those laid out by the Climate, Community, and Biodiversity Alliance ([CCBA](#)).

As with Kingfisher, IKEA's investments in wood are ultimately about forward-looking supply chain management as well as reputation and brand management. Together, these supply and reputational issues form the basis for a compelling business case in a world in which stakeholders are increasingly concerned about whether companies' supply chain practices are driving deforestation and, in the process, contributing to the dynamics of climate change.

For example, the Carbon Disclosure Project (CDP) urges corporate [disclosure](#) on forest-related risks and has been tracking [corporate commitments to deforestation-free supply chains](#). In addition, Forest Trends has collaborated with other organizations—including CDP and WWF—on “[supply change](#)” analyses that examine whether companies are realizing commitments to address deforestation in supply chains. Looking at key drivers of deforestation, as laid out in a [WRI](#) and by [WWF](#), there is an immense opportunity for companies in other sectors, notably within the food and agriculture industry, to continue to make commitments to deforestation-free supply chains.

Question: How do we manage our wastewater efficiently?

Answer: Invest in a natural approach to filtering water.



To meet regulated wastewater quality mandates in a Texas facility, **Dow** had to take action. Rather than building a US\$40 million wastewater treatment plant, the company spent US\$1 million to create a wetland that naturally filters water—with significantly lower construction and operational costs, as documented in a peer reviewed [article](#). Not only did this approach save US\$39 million dollars, but it has been effective.

Since the day that water first flowed through the created wetland about 19 years ago, this approach to water filtration has been in regulatory compliance with U.S. water requirements.

In addition, over almost two decades, the wetland-based water filtration approach has delivered [US\\$282 million in net present value savings](#), with more savings to come in the future as it continues to function well.

Dow's investment in “engineered natural treatment systems for industrial wastewater” is essentially a human-constructed wetland to undertake the water-filtration processes that natural wetlands do very well. The final results look strikingly similar being out in nature, because it is created to enable natural ecological systems to do what they do—as shown in a [video created by Dow](#).

The advantages of this approach, when compared with a built wastewater-treatment plant, are numerous and are described in a TNC case [study](#) as including:

- **Capital expense savings**, with US\$1.2-1.4 million versus US\$40 million for the gray infrastructure alternative proposed

- **Operating expense savings**, with no energy, additives, or oxygen; no bio-solids disposal; minimal maintenance
- **Lower environmental footprint**, which eliminated the need for constructing and operating an energy-intensive wastewater treatment facility
- **Labor cost savings**, given that a wetland requires minimal support from operations and maintenance, as opposed to the gray alternative requiring 24/7 support
- **Operational performance**, which has been 100 percent compliant since startup
- **Construction benefits**, which cut in half project implementation time (fully operational in 18 months)
- **Other benefits**, such as providing habitat for deer, bobcats, and birds, as well as educational opportunities for local schools

In speaking about Dow's work related to natural capital, CEO Andrew Liveris has [said](#): "Natural systems not only serve multiple functions, but have multiple benefits—often requiring less capital and less maintenance while promoting biodiversity that we all enjoy."



[Royal Dutch Shell](#) has also [invested](#) in 360 hectares of an engineered reed wetland in Oman "to naturally treat 100,000 m³ of oily water per day," in a partnership with Petroleum Development Oman Nimr, a joint venture with The Shell Petroleum Company Ltd. and the government of Oman.

The approach has saved considerable expenses, as well as ongoing operational costs such as electricity to run the wastewater treatment facility, bringing the additional advantages of wetland creation, described in a [TNC case study](#) as including:

- **Capital expense savings**, compared to the alternative water treatment facility
- **Operating expense savings**, which includes energy demands reduced by ~98 percent due to the elimination of electric-powered water treatment and injection equipment
- **Operational performance**, which has included oil content in the produced water consistently being reduced from 400 milligrams per liter to less than 0.5 mg/l when leaving the wetland system
- **Significantly reduced carbon footprint**, with CO₂ emissions reduced by ~98 percent due to the elimination of electric-powered water treatment and injection equipment
- **Other benefits**, including the wetlands that provide habitat for fish and hundreds of species of migratory birds

Royal Dutch Shell is making additional investments in ecological restoration, such as in collaboration with [Restore the Earth Foundation in Louisiana](#).



Arriving at similar conclusions following years of "engineered wetlands technology" tests at various locations, **Alcoa** committed to expanding its use of "[ecological, natural-based systems](#)" to treat waters and wastewaters, as laid out in a [case study](#) on the Natural Capital Business Hub. The most recent and largest project was a system implemented in the Kingdom of Saudi Arabia at the Ma'aden-Alcoa joint venture project site, which is projected to reduce water demand by nearly 2 million gallons (5 million liters) per day and save more than US\$7 million annually that would otherwise be used to purchase fresh water. Alcoa estimates about US\$50 million in savings across sites from water projects to date.

Question: How do we optimize returns on our real estate portfolio?

Answer: Revenues can be gained and risks mitigated from conservation uses, improvements, and environmental market mechanisms.



In a sale of lands that were not core to the business but had ecological and conservation value, **Allegheny Power** accrued both US\$16 million revenues and also a US\$16.6 million tax write-off, as documented in a GreenVest case [study](#) and [article](#).

As with any company that has large holdings that it was not using, this sale also allowed the company to control liability and risks from trespass and eliminate operational and management costs. Rationalizing the real estate portfolio with an eye on maximizing financial value led to the realization that environmental value could also be tapped into, by engaging in a land transaction that sold the land so that it would be used for conservation purposes and maintaining the ecological structure and function of particular areas. (The opportunities for the power generation industry on other such real estate portfolio management transactions for conservation purposes and corporate risk mitigation are well laid out in a 2003 [EPRI report](#).)



Cargill has also [sold](#) to the public sector 16,500 acres of its San Francisco Bay Area salt ponds for US\$100 million, so they can be restored to improve the ecological functioning of the area. Numerous other companies have taken similar steps, as documented on the [Ecosystem Marketplace](#), a web-based information platform about market-based approaches to conserving ecosystem services.

Overall, the opportunity for companies is to review their real estate portfolios in terms of ecological value. Numerous organizations are available to assist, including Ecosystem Investment Partners ([EIP](#)), [GreenVest](#), and [Restore the Earth Foundation, among others](#).

Question: How do we execute on our corporate environmental commitments and policies while maintaining a focus on sound investment and strong financial, social, and environmental ROI?

Answer: Align investments and/or supply chain management with overall corporate commitments and policies, through new initiatives or sourcing that can be independently verified as resulting in multiple co-benefits—for local communities, biodiversity, and the natural environment—while also meeting internal business hurdles.



For **Apple**, the business issue involved finding an innovative and aspirational approach with which to address corporate paper and cardboard uses as well as associated forestland impacts. The answer—to addressing Apple’s reliance on cardboard for packaging—led to an investment in [36,000 acres of forestland](#). Specifically, Apple explained that “the collective annual production from these forests is equivalent to nearly half the virgin fiber used for iPhone, iPad, iPod, Mac, and Apple TV packaging in fiscal year 2014.”

The company states that it ultimately aims to protect as much as 1 million acres of responsibly managed working forests, so that its paper use has “zero net impact on forests”. (As with the Kingfisher and IKEA cases above, ideally these forest goals will include metrics related to [biodiversity issues](#) as well as ecosystem structure and function concerns, which include maintaining flow of [ecosystem services](#).)

Not surprisingly, **Apple** describes its work on reforestation in terms of innovation and aspiration. The company [states](#): “Innovation means working with what’s here to create something new.” Apple [describes](#) their rationale for investing in reforestation as “part of our continuing mission to leave the world better than we found it,” and specifically “to help ensure that future generations have access to even more forest than we do”.

Apple has translated aspirations into a clear goal of “net zero impact” on virgin tree fiber, [stating](#): “We are committed to protecting—and creating—as much sustainable working forest as is needed to produce the paper in our product packaging.” Apple has partnered with the NGO [The Conservation Fund](#) to “create and protect the types of sustainably managed forests that produce virgin fiber for paper and packaging” on more than 36,000 acres of working forests across the United States. Looking forward, Apple is also collaborating with the World Wildlife

Fund to protect up to 1 million acres of responsibly managed working forests that provide fiber for pulp, paper, and wood products across China.

With aspiration, innovation, and commitment, Apple is showing that when thinking about impacts on renewable resources—like paper, pulp, trees, and forests—the road leads inevitably to investments in ecological conservation and restoration.

Of course, the opportunity is to continue to move forward with its other supply chains—from hardware manufacturing and raw-material sourcing, including impacts from mining—exploring similar questions and opportunities around natural systems impacts and restoration.



For **Danone**, investments in nature were sparked by the need to execute on corporate commitments in a way that could deliver positive impacts, while also showing innovation and brand alignment. Therefore, Danone formed the Danone Fund for Nature in 2008 to focus on “the restoration of natural ecosystems..., agroforestry and sustainable agriculture projects, and rural energy/clean cook stove projects.”

Following on investments in carbon offsets, Danone expanded the approach and collaborated with 10 European companies. In 2011, these companies—**Danone, Schneider Electric, Crédit Agricole, Michelin, Hermès, SAP, CDC Climat, La Poste, Firmenich, Voyageurs du Monde**—launched the [Livelihoods Fund](#), with capital of €40 million (US\$45.5 million). The fund has invested in seven projects in Asia, Africa, and Latin America to date.

For example, Danone [describes](#) how, in the Sundarbans archipelago, they will replant 5,500 hectares of mangroves with the help of a local NGO partner, bringing the potential for positively affecting 250,000 people. In India’s Araku Valley, Danone worked with another local NGO on an agroforestry project that will plant 6,000 hectares of fruit trees, bringing benefits to a potential 100,000 villagers.

Overall, the fund has led to the planting of more than 130 million trees, improving the livelihoods of more than 1 million people in Africa, Asia, and Latin America. In 2014, the seven projects supported by the Fund are expected to generate carbon credits equivalent to 8 million tons of CO₂ over the next 20 years, [according to Danone](#).

Danone describes the underlying motivation as clear, simple, and business-oriented:

“Livelihoods is an investment fund, not a charity, and it invests in large-scale programs aimed at generating long-term sustainability and high social, economic, and environmental value for the local communities. In return for their financial contributions, the fund’s partner investors receive high-quality carbon credits that they can use towards offsetting carbon emissions from their business activities and towards reducing their environmental footprint.”



In 2015, Danone and Mars launched a [new Livelihoods fund](#) with a focus on “helping companies to learn how to sustainably source the materials they need from smallholder farmers while at the same time delivering large-scale social and economic impact to those farmers and their communities.” The resulting Livelihoods 3F initiative aims to invest €120 million (US\$136 million) in the next 10 years to implement projects in Africa, Asia, and Latin America, helping more than 200,000 smallholder farmers and boosting the sustainability of their crops.

The rationale for this work is clear and business-related: Danone [explains](#) that with global population on the rise, pressure on natural resources is also increasing. In addition, deforestation, land degradation, climate change, and biodiversity loss are undercutting natural system functioning. Farmers will increasingly need to know how to improve agricultural productivity and income, as well as ensure soil fertility, access to water, and maintain ecosystem structure (including biodiversity) to enable natural system functions. The challenge is that: “... small family farmers are not currently bankable investees for investment funds, despite the fact that they dominate the supply side of many major markets like cocoa, coffee, or rubber.” In response, therefore, “Livelihoods 3F’s purpose is to aggregate these farmers and to integrate them into value chains with the positive impact benefits monetized to give a return for the fund.”

Returns on this investment will be assessed in an [integrated way](#) that considers financial as well as environmental and social returns. For example, the fund will track increases in farmer incomes, improvements in farmer livelihoods, and benefits to the environment, such as carbon emissions mitigated or sequestered through reforestation.

What Is the Takeaway?

These examples show that the business case for nature-based solutions and ecological restoration emerges when companies look at specific issues through the lens of business imperatives—such as sourcing of inputs, operational or supply chain challenges, real estate portfolio management, among other issues.

Taking this business-imperatives view leads directly to questions about what elements of the context in which a company operates could adversely affect the firm. With this analytical frame, a range of environmental and community issues emerge as highly relevant to business—which enables decision makers to explore a greater range of risks as well as options for solving business problems or sparking innovation with associated cost savings and other benefits.

An analogy highlights the importance of the broader context that can affect business imperatives: No investor would make a decision based on only one number, such as profits. Questions would be asked about costs, revenues, margins, market share, and other figures. Context, and contextualizing data, is key. Any business decision maker wants multiple figures.

The cases in this business brief show that by adding the environmental context enabled decision makers to see new business-relevant possibilities, or even new business imperatives, in the form of maintaining natural systems.

In some companies, such as Dow and Shell, the let's-work-with-nature approach is simply more cost- and operationally effective. End of case. In other cases—such as that which numerous beverage and food companies face—the fundamental drivers of investments in ecological restoration are simple dynamics associated with raw material demand and supply.

The key takeaway is that when business problems are encountered, corporate decision makers are wise to consider nature's systems and processes with capital investment in mind. These investments should be viewed as long-range and infrastructure-related, not short-term profit-driving measures—and therefore are best understood using the lens of capital investment.

The cases show that investing in nature's systems and processes has offered cost-effective solutions to businesses' needs—from facility operation through decreasing impacts, better managing real estate portfolios, and even increasing ROI—in terms of financial as well as environmental and social returns. In this sense, all of these cases are manifestations of, to use Harvard Business School's Michael Porter's term, [shared value creation](#).

This corporate value, and returns on investment, can be documented at multiple levels through selecting the best approach for a particular company. For example, some companies build on pre-existing internal frameworks. Other businesses adapt social return on investment ([SROI](#)) models, [blended value](#) approaches, Environmental Profit and Loss ([EP&L](#)) spreadsheets, or Environmental Balance Sheets ([EBS](#)). More recently, the [Restore the Earth Foundation has developed](#) a custom-made approach to integrating across financial, environmental (across a landscape scale), and social impacts in the form of the Social Impact Model ([SIM](#)), which can also be used for restoration projects seeking to delineate multiple returns on investment. In addition, the [four returns model](#) documents landscape restoration ROI—including inspiration as a return—which Commonland is applying now with investors, companies, and local ventures in South Africa, Australia, and Spain.

The bottom line is clear. Investing in nature-based solutions can offer numerous, measurable returns.

How Do I Move Forward?

Companies would do well to hire more engineers with blended civil or environmental engineering and biology backgrounds—especially individuals who consider green infrastructure and seek out biomimicry-inspired approaches. Business units can organize and hold trainings for technical solutions teams in biomimicry and green infrastructure opportunity assessments. Business leaders can participate in field trips to visit well-functioning green infrastructure. And internal corporate new-project processes and checklists can integrate the question: “Have you considered how nature would solve this issue?” Finally, human resource departments can integrate perks, benefits, bonuses, and promotions to staff who are exploring and investing in nature-based solutions, ecological restoration, and green infrastructure projects.

The opportunity is to learn from the leaders who are investing in nature-based solutions to business questions—and seeing value created at multiple levels. This set of cases should provide inspiration as well as guiding questions with which to begin explorations within companies.

For businesspeople who are new to these issues, the internal discussion process begins with questions, such as:

Illustrative Overarching Business Questions	Illustrative Business Units Involved?
Are any of my company’s business imperatives dependent upon well-functioning natural systems, or adversely affected if these natural systems malfunction?	Corporate Strategy Team Supply Chain Management Facility / Operational Management
What specific risks exist within particular key business or supply chain geographies that could stem from malfunctioning natural systems and adversely affect my business operations, supply chains, social license to operate, or other essential items?	Supply Chain Management Operational Management Regulatory Compliance Stakeholder Engagement
- What nature-based or ecological restoration-oriented solutions exist to the issues identified? - How does nature handle a particular issue or challenge (e.g., water filtration, flood control, coastal protection, buffering from storm surges, etc.)? - Is there a biomimicry approach that offers reduced capital investment/reduced operations and maintenance costs, low energy intensity, minimal operator involvement, little residual waste, low odor potential, high reliability (both from an operational and regulatory perspective), and soft advantages/benefits, particularly in terms of public affairs and improved wildlife habitat?	Environmental or Sustainability Corporate Teams Stakeholder Engagement Teams

The time is ripe to explore nature-inspired solutions to business problems, and investments in restoration of natural systems. The cases are in place. Engagement is the next step into a world of benefit multipliers that will accrue to the company, the environment, and local communities.

About BSR

BSR is a global nonprofit organization that works with its network of more than 250 member companies to build a just and sustainable world. From its offices in Asia, Europe, and North America, BSR develops sustainable business strategies and solutions through consulting, research, and cross-sector collaboration. Visit www.bsr.org for more information about BSR's more than 20 years of leadership in sustainability.

About Restore the Earth Foundation (REF)

REF restores forest and wetland ecosystems on a landscape-scale so that their work has the greatest impact, securing cleaner air, cleaner water, and environmental resiliency. REF's collaborative network of partners includes government agencies, corporations, NGOs, universities, community-based organizations and individuals who work together to benefit the environment and communities. The approach to impact assessment verifiably measures environmental, social, and economic value of ecosystem restoration in monetized terms.