DEDICATED TO MAKING A DIFFERENCE

Responding to the Biodiversity Challenge

Business contributions to the Convention on Biological Diversity

World Business Council for Sustainable Development

Contents

Introduction

Business and ecosystem services are inextricably linked.

Corporations not only impact ecosystems and the services they provide, but also depend upon them. For instance, freshwater is a critical input for every conceivable major industrial process; the pharmaceutical industry benefits from genetic resources; agribusiness and the food sector depend on ecosystem services like pollination, pest and erosion regulation; forest industries – and the downstream construction, communications and packaging sectors – rely on continued supplies of timber and wood fiber; all extractive industries cause some level of ecosystem disturbance; whilst tourism increasingly builds on an ecosystem's cultural services and aesthetic values; all building owners and plant operators benefit from the natural hazard regulation service that some ecosystems provide. In fact, it is hard to think of any economic activity that does not benefit from ecosystem services or, in some way, alter the ecosystems around it.

Ecosystems degradation will affect how business operates

However, in the past 50 years, human activity has altered ecosystems faster and more extensively than ever before. This is unfortunate, as the degradation of ecosystems and the services they provide destroys business value and limits future growth opportunities. Biodiversity loss and ecosystem degradation come at a price, which has been estimated to be between Euro 1.35 trillion and Euro 3.10 trillion each and every year. Business cannot function if the ecosystem services it relies on are degraded or out of balance, and there is a need to recognize the full value of ecosystems and their services in order to ensure their sustainable use.

Business is part of the solution

Some initiatives aiming to curb biodiversity loss are currently being tested, or are already operational. They include the creation of new market mechanisms such as Payment for Ecosystem Services (PES) or habitat banking, inspired by the existing carbon market. A major market opportunity is the Reducing Emissions from Deforestation and Degradation (REDD+) initiative that is already being implemented in different countries and likely to deliver significant biodiversity benefits through forest conservation, restoration and sustainable management. On the other hand, regulations are also converging towards stricter measures to further protect biodiversity and ecosystems. These measures include new and improved environmental policies and regulatory frameworks such as taxes, fiscal incentives and trading schemes. Implementation of these measures will be backed by an intergovernmental platform intended to assess current knowledge, identify gaps and provide independent policy-relevant information on biodiversity and ecosystem services. This Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is to provide improved information for use by decision makers and practitioners, including the private sector.

In addition to these measures, business is already innovating on a voluntary basis, through different projects that respond to the United Nations Convention on Biological Diversity's (CBD) three core objectives:

1. The conservation of biological diversity
2. The sustainable use of the components of biological diversity
3. The fair and equitable sharing of the benefits arising from the utilization of genetic resources

These projects show that business has an important role to play in achieving biodiversity conservation and sustainable use, and that this role goes well beyond financial support.

Featuring the wide range of solutions initiated by corporations

This publication showcases a range of business case studies from the World Business Council for Sustainable Development (WBCSD) member companies, detailing where, how and why corporations have leveraged their business experience and expertise to contribute to the CBD objectives, whilst improving their bottom-line and securing their license to operate.

Business motivations and solutions are multiple

There is no unique response to the CBD objectives: depending on the sector, country and environment; solutions can, for example, consist of reforestation, introduction of sustainable agricultural practices, restoration of degraded ecosystems, or the protection of a specific endangered species. Motivations to undertake these actions are also diverse, and include securing the company's license to operate (reputational and regulatory risks), improving its operations efficiency (operational risks), or securing its future operations (market, product and financing risks). Corporations can also be motivated by new business opportunities stemming from biodiversity conservation activities.

Key findings

These business case studies demonstrate that corporations can further improve their efficiency in sustainable ecosystem management and biodiversity conservation by leveraging partnerships with key stakeholders, including public authorities. They also illustrate that new market mechanisms like habitat banking or offsetting are emerging as solutions to improved ecosystem service management that can be effectively and efficiently used by business.

Finally, this publication demonstrates that the role of business goes beyond financial assistance and includes offering solutions linked to technology transfer, capacity building and ecosystem stewardship.

On the ground business actions

The case studies feature companies from diverse sectors, operating in very different countries and implementing specific measures to address one (or several) of the CBD objectives.

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CBD OBJECTIVES	RELEVANCE	
	++	+
The sustainable use of the components of biological diversity		
The conservation of biological diversity		
The fair and equitable sharing of the benefits arising out of the utilization of genetic resources		

ArcelorMittal

Sustaining our Great Lakes

The business case

ArcelorMittal, owning operations within the Great Lakes basin, manages its business risk and supports critical public resources through a unique partnership dedicated to the protection and restoration of the Great Lakes ecosystem.

The issue

A high dependency on water

ArcelorMittal has nine facilities throughout the USA and Canada that surround the Great Lakes. After iron and coal, water is the most important component in the steelmaking process. An average of 13,000 to 23,000 gallons of water may be required per ton of steel. ArcelorMittal depends on the Great Lakes to ship raw materials for its manufacturing operations and product distribution. Additionally, 37 million people, including more than 25,000 ArcelorMittal employees, live and rely on the lakes for drinking water, recreation and food sources.

Recognizing that the planet's largest freshwater resource is in jeopardy, ArcelorMittal, as the sole corporate partner, joined the National Fish and Wildlife Foundation, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Forest Service and the National Oceanic and Atmospheric Administration in 2007, to focus on collaborative ecosystem restoration.

The response

"Sustain Our Great Lakes", a public-private multi-stakeholder partnership

ArcelorMittal and partners work together to leverage resources and educate decision makers on the importance of the Great Lakes to the region's economic vitality and quality of life, the needs and priorities of the ecosystem, and to identify efforts that can have the largest impact towards restoration goals. The ultimate goal of the Sustain Our Great Lakes program is to restore the ecological integrity of the Basin. This is achieved through financial grants that:

- Increase capacity and collaboration of environmental initiatives; and
- Enable NGOs to provide on-the-ground impact toward restoration goals, thereby increasing the overall health of the Great Lakes.

The results

Different projects for the same objective: biodiversity conservation

This bi-national effort represents a public-private partnership model where grants are leveraged two to one. Since the program's inception in 2006, the partnership has facilitated 103 grants equaling approximately $29 million USD in conservation investment ($12.1 million cash funded by the partnership, $16.9 million provided in matching funds) across the Great Lakes. The program supports the implementation of the Great Lakes Restoration Initiative and is designed to protect, maintain and restore the chemical, biological and physical integrity of the basin's ecosystem. In the long term, ArcelorMittal's involvement in these conservation projects demonstrate the company's responsibility, and consequently strengthen its license to operate in the Great Lakes region.

For additional information on this case please refer to the site www.sustainourgreatlakes.org

SUSTAIN OUR GREAT LAKES

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ArcelorMittal

Conserving indigenous forests in Liberia

The business case

As part of its risks management strategy in Liberia, ArcelorMittal has set-up a multi-stakeholder partnership to investigate how it could mitigate its future liabilities, i.e. its potential impacts on local biodiversity and people's livelihood.

The issue

Mining in Liberia – an environmental and social challenge

ArcelorMittal, the world's leading steel company, is planning to start iron ore mining operations in Liberia. Liberia has one of the richest seams of iron ore in Africa. However, some of the most accessible seams of ore are in the remote Nimba mountain range, which is one of the few remaining West African wet-zone forests, and home to many unique species and ecosystems. These forests are an important habitat for the smaller mammals that are an integral part of the diet for local people.

Business impacts on the ecosystems can be profound if they are not managed with extreme care. ArcelorMittal's challenge, therefore, is to establish ore extracting operations without destroying these special habitats or fragile local livelihoods.

The response

Initial steps: knowing the existing ecosystems and working with stakeholders

The first step was to build a solid basis for decision-making, which meant carrying out a large-scale, year-long ecological study in both the wet and dry seasons. Nothing like this had been possible during the civil war, so there was very little knowledge about local biodiversity. ArcelorMittal assembled a large team of specialists and partners from Liberia and other neighboring countries, including the Liberian Forestry Development Authority, the NGOs Conservation International and Fauna and Flora International, and the Côte d'Ivoire-based *Afrique Nature*, to study the current state of biodiversity in the region.

First encouraging outcomes

The ecological study proved that the forests close to the proposed mine sites did indeed show high levels of biodiversity. For example, the study identified 742 species of butterflies and moths in the forests, but also revealed that these were under threat from long-term degradation and decline, due to logging, agriculture and previous mining operations. ArcelorMittal had the opportunity not only to mitigate damage from mining, but to start reversing that trend.

One of the positive consequences of the work carried out has been the establishment of an energetic local stakeholder group, which brings together all the different NGOs working in the area. It meets every two months and develops shared plans for the management of the forest, based on sustainable community activities. The group has also helped the government agencies to focus their efforts, and make conservation their priority, rather than commercial logging.

The results

Initial discussions and planning for rehabilitation and protection work began in 2009 and are expected to last until the end of 2010. Implementation will take approximately 15 years of low level input, starting from 2011.

ArcelorMittal will work to mitigate its potential impacts on surrounding ecosystems, and consequently people's livelihoods, at every stage of the development project, leveraging the multi-stakeholder consultation in which it is deeply involved.

These actions towards biodiversity conservation should help the company to secure its license to operate among government authorities, and also local communities, who rely on the existing ecosystems.

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BASF
The Chemical Company

Protecting and preserving ecosystems through respectful agricultural practices

The business case

It is of critical importance for the agriculture sector to protect and enhance the ecosystems it relies on for its yields. Acknowledging this fact, BASF has developed different programs throughout the world that aim first to show that modern agriculture can be compatible with nature whilst also supporting its clients, the farmers.

The issue

BASF, the world leading chemical company, is operating a Crop Protection division whose role is to enhance sustainable agriculture, providing farmers with products and services to improve crop yields and quality. BASF recognizes that the functioning of ecosystems is important for agriculture and the company's customers, the farmers. Moreover, it acknowledges that competitive agriculture needs to be compatible with biodiversity, in order to be accepted by society. This is why BASF has developed several programs aiming to combine agriculture and biodiversity conservation.

The response

Project 1 – Testing methods of biodiversity enhancement on commercial farms (UK)

Since 2002, BASF has been working in partnership with a commercial farm at Rawcliffe Bridge, Great Britain. The owners agreed to implement and monitor new biodiversity methods suggested by the Farming and Wildlife Advisory Group and the Royal Society for the Protection of Birds. All data has been collected by independent experts and is published.

An approach based on food supply

Since 2003 bird numbers have been monitored on the farmed area and in trees recently planted in an unproductive field. Using a "bed and breakfast" type approach, nest boxes have been set up on the trees and wild bird food crops have been planted so as to provide season-long food supplies. One hectare near woodland was also sown with a grass mix, while two hectares nearby were sown with field margin mixtures – all aimed at encouraging seed production, insects and ground-feeding birds. Some farming practices were changed to minimize the impact to birds and their food source.

Encouraging results on biodiversity conservation

Since 2003, the farm has provided inspiration to 650 annual visitors and habitats for over 100 bird species (annual records are approximately 70 species), 25 percent of them being considered endangered. Scientists have recorded approximately 150 plant species growing in the field margins – a third more than average.

Project 2 – Planting trees for a more sustainable agriculture (Brazil)

Initiated by BASF in 1984, the Brazilian "Mata Viva" initiative is based on future farmers' education as well as actions to restore and conserve biodiversity, protect the quality of water, and create areas to preserve native vegetation and wild life.

The initiative began when the company began restoration of the land around its main South American chemical complex at Guaratinguetá. Fundação Espaço ECO, a non-profit organization established by BASF and GTZ with the mission to promote Sustainable Development in Latin-

America, is responsible for implementing and strategically steering the program for BASF.

A two-fold project: restoration and education

Employees of BASF Brazil joined forces with a broad range of partners from both the business and scientific communities, including cooperatives and farmers, to plant more than half a million native Brazilian trees, covering an area of around 300 hectares since the implementation of the program. The program engaged farmers around sustainable agriculture and is contributing to the enhancement of biodiversity. To ensure both transformation and continuity, the program trains technicians how to identify and map affected areas, understand a diagnosis, and follow a reforestation plan.

Project 3 – Protecting and preserving bees (France)

The increase in pollinators' mortality has been noticed in different countries in the world, in France amongst others. Pollinators' population decline has a direct impact on agriculture and consequently on BASF customers, the farmers. The company has therefore decided to join the French Bee Biodiversity Network, in order to actively contribute to the protection and enhancement of honey bees and pollinators in France.

Nutrition based solutions

The French Bee Biodiversity Network numbers over 300 partners, including scientists, beekeepers, farmers and private companies. Its goal is to enhance honey bee and pollinator populations in France through improvement of bee nutrition, which is not always sufficiently available in the agricultural landscape. The Bee Biodiversity Network therefore provides special "bee pastures" on more than 2500 hectares every year. The data shows that this is an effective measure to improve bee health.

The results

These three programs all share the common objective of improving a region's biodiversity, through different methods – whether it is through providing habitats and food supply to local species or reforestation and education programs. For BASF, the expected outcomes are multiple. They:

- Demonstrate that modern and registered crop protection and good agricultural practices are compatible with biodiversity;
- Improve and strengthen the relationship with farmers, by providing solutions that are compatible with farming practices; and
- Enhance the reputation of the farming sector and BASF's industry as a provider of agricultural solutions.

Further information can be found on the BASF AP website (www.agro.basf.com)

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Testing the first habitat banking project in Europe

The business case

New market mechanisms targeting biodiversity conservation are emerging worldwide, and among others, the biodiversity offset market size is expected to increase in the coming years. The French company CDC Biodiversité has seized this opportunity and is testing the first habitat banking project in Europe.

The issue

Biodiversity offsetting, a new activity in Europe

CDC Biodiversité, a French company subsidiary of the financial institution *Caisse des Dépôts*, operates in the field of biodiversity consultancy. Biodiversity offsets are an emerging market in France, where CDC Biodiversité is positioned as an actor piloting all steps of developers' compensatory actions: finding and securing lands, developing management plans, realizing development works (restoration, enhancement,…) and ensuring long term management.

So what is the objective of biodiversity offsets? Offsets allow developers to build infrastructures or industrial projects with "no net loss" in biodiversity, as they compensate for residual impacts through an ecological project, generating biodiversity gain equivalent to the residual loss.

The response

The first European habitat banking project

CDC Biodiversité is currently testing the first habitat banking project in Europe, near Marseille. It began in September 2008 and will last 30 years, i.e. until 2038. During this time, CDC Biodiversité will act as the manager of the project, reporting on its status to local environment agencies.

The project`s aim is to convert 367 ha of a former arboriculture domain into sustainable grazing areas for ewe herds, as well as suitable habitats for critically endangered avian species found in the area. It is carried out in liaison with national and local environmental agencies, and provides an experimental framework to explore the relevance and modalities of the habitat banking system in the context of French and European regulations.

The results

New services to answer increasing biodiversity conservation needs

Biodiversity offset banks are a new way for companies to act towards biodiversity conservation, through compensation of their residual impact on biodiversity. These projects tend to be more cost-effective than ad-hoc offsets, due to economies of scale: banking projects are of higher ecological efficiency as they typically target large areas; therefore they are more appropriate for the conservation of habitats and species (as they will be used to compensate the impacts of several projects and not just one). The biodiversity impact is thus further emphasized.

From a business perspective, biodiversity offsetting represents a new market opportunity for consultancy agencies such as CDC Biodiversité – as companies that lack the internal knowledge will be able to outsource compensatory actions.

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Conserving a unique transboundary ecosystem

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The business case

As part of its corporate responsibility, CEMEX has long recognized the importance of protecting the biodiversity of our planet. It has therefore conducted a multi-stakeholder, long-term transboundary conservation initiative along the Mexico and US border over ten years, thus helping to protect the region's biodiversity.

The issue

Protecting an extraordinarily biodiverse region

CEMEX is a global building materials company that provides high quality products and reliable service to customers and communities throughout the Americas, Europe, Africa, the Middle East, and Asia. Its operations network produces, distributes, and markets cement, ready-mix concrete, aggregates, and related building materials in more than 50 countries, and it maintains trade relationships with more than 100 nations.

In addition to the responsible land management related to its extractive operations, CEMEX is engaged in several programs for the broader conservation of nature. A key program that helps raise awareness of and advance biodiversity conservation among a broad cross-section of stakeholders is the El Carmen Transboundary Conservation initiative, located in the El Carmen-Big Bend region (*map*).

This region represents one of the most unique and diverse ecosystems in North America, consisting of a large Mexico – US transboundary ecological corridor vital for bird and mammal migration. The region is a series of mountain ranges surrounded by lowland desert ("sky islands"). These mountain ranges are located in the Madrean pine-oak woodlands, recognized as a biodiversity hotspot. Moreover, the desert lowlands are part of the "Greater Chihuahuan Desert," recognized by the WWF's Global 200 ecoregions.

The El Carmen ecosystem was heavily exploited by logging, mining, and overgrazing in a non-sustainable way for more than 100 years, resulting in habitat and biodiversity loss. During the late 1990s, CEMEX realized the importance of the area's biodiversity, and the necessity to conserve this exceptional transboundary ecosystem.

The response

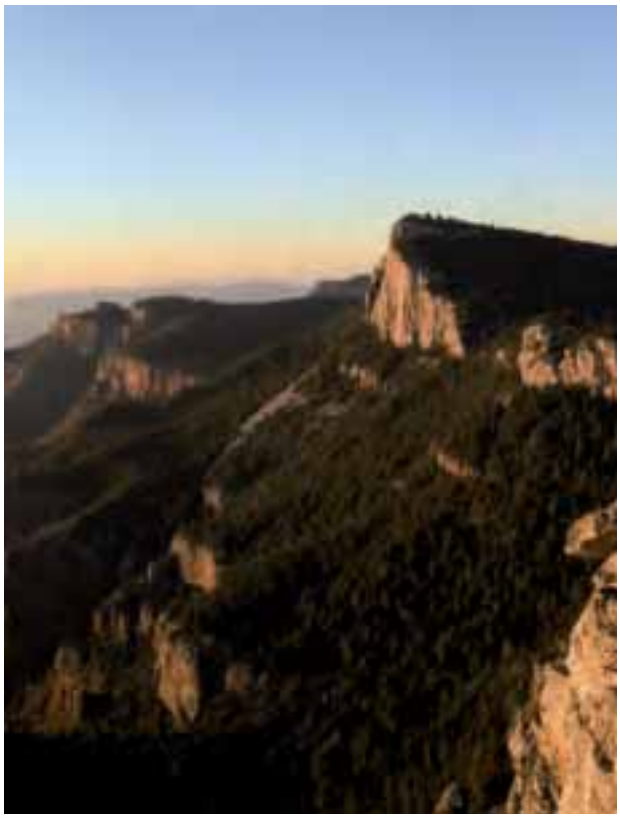
A multi-stakeholder initiative to protect the region

For 10 years, the company has been working in El Carmen with a long-term commitment that has been growing over the years. The initiative uses scientific research and proven habitat and wildlife management practices to restore and protect the landscape. One of the priority efforts has been the restoration of native wildlife and its habitat. Since the beginning of the initiative, domestic livestock was removed to allow lands to rest, interior fences were taken up allowing wildlife freedom of movement, water systems for wildlife are continuously being developed, and native grasslands are being restored, as part of the comprehensive management plan. Other significant efforts include the restoration of large mammal species, such as desert bighorn sheep (*Ovis canadensis*) and pronghorn antilope (*Antilocapra americana*), which had been locally extinct for more than 50 years. The El Carmen staff also provide guidance on habitat and wildlife restoration to its neighboring private landowner partners. El Carmen has now become a new generation conservation model, comprising a unique partnership between the company, the government, private landowners, NGOs, universities, and other stakeholders.

The results

A "win-win" initiative- good for the environment, good for the company

Today, the El Carmen area of participation encompasses approximately 200,000 hectares consisting of CEMEX land and other private landowners on both sides of the Mexico-US border, and has contributed to the protection of the whole region's exceptional biodiversity. Current results of the baseline inventory in the area indicate more than 500 species of plants, 290 species of birds, 80 species of reptiles and amphibians, and 81 species of mammals; many of them are endemic and/or critical for the region's biodiversity conservation.



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As a result of the implementation of El Carmen initiative, wildlife populations have increased to more stable levels. Examples of this are: the desert mule deer (*Odocoileus hemionus*), the carmen mountain's white-tailed deer (*Odocoileus virginianus carminis*), javelina (*Pecari tajacu*), black bear (*Ursus americanus*), and wild turkey, of (*Meleagris gallopavo intermedia*) which populations have increased more than five times during the past 10 years.

The initiative demonstrates CEMEX's commitment and hands-on expertise in land management and biodiversity conservation. It helps CEMEX build relationships with leading global conservation organizations, universities, governments and communities. These partnerships provide strategic guidance, improve CEMEX's understanding of biodiversity issues, and help the company better address them on a global and local level.

Also the El Carmen Initiative will give CEMEX the opportunity to participate in emerging markets for carbon sequestration and watershed protection in the near future.

Further information on the case can be found on the following site: www.cemex.com/su/Su_ow_cc.aspx

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Creating business value through ecological stormwater management

The business case

Being highly exposed to flooding on its Houston site, CCP has chosen to restore its surrounding ecosystem rather than building another stormwater management infrastructure. This operation, while enhancing the region's biodiversity, will ultimately help the company save money, as well as benefit the whole local community.

The issue

Cook Composites and Polymers Co. (CCP) is an industrial company producing and distributing products such as gel coats, composite resins, or coatings resins. It owns a site in Houston US that is highly dependent on the natural flood regulation services from the local bayou ecosystem to prevent stormwater from accumulating across its facilities and creating a nuisance. However, the development of impervious surfaces throughout Houston has disrupted this ecosystem service.

Ecosystem regulation services, an alternative solution to fight floods

The CCP Houston site is currently equipped with a stormwater management infrastructure that is ageing and not able to cope with the frequent storms and flooding that occur in the region. Therefore, CCP is planning to construct a wetland ecosystem to replace this infrastructure. Through this project, CCP aims to restore the local ecosystem by reestablishing the natural hydrological cycle for its facility's location, as well as provide water purification services through the ecological stormwater management solution.

CCP believes this progressive solution to a unique problem for an active industrial facility will require support and approval from multiple regulatory agencies.

The response

A multi-stakeholder project

CCP is working together with the U.S. Business Council for Sustainable Development (US BCSD), The Center for Resilience at the Ohio State University and other partners to analyze, design and construct a wetland to replace the existing stormwater management infrastructure. CCP believes this unique partnership will:

- support message point development for demonstrating project value to regulatory stakeholders (e.g., City of Houston Public Works, City of Houston Fire, TCEQ Houston, TCEQ Austin) and company shareholders; and
- enable CCP to obtain approval from not just one but multiple state and local regulatory agencies.

The results

Results for business, results for the community, results for biodiversity

This ecological solution to the current ageing stormwater management system will eliminate site flooding, allowing the company to save money on the reduction or elimination of storm water discharge, on nuisance costs associated with flooding, and also on the capital required to maintain the existing system. Additionally, the project will reduce the burden on the public water treatment system, whilst providing a natural amenity. These positive impacts, as well as the partnerships built during the project, will also enable CCP to strengthen its social license to operate in the region.

Finally, the wetland enhancement will also benefit the local ecosystems as plant biodiversity is expected to increase by approximately 30 species.

FURTHER INFORMATION

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Utilizating household wastewater in the large-scale

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The business case

To reduce environmental impacts and risks linked to water supply, Dow is using household wastewater on its Terneuzen industrial site, which not only allows water to be re-used three times but also saves energy and chemicals previously used for water treatment.

The issue

A business with a high dependency on water

Dow is a company specialized in innovative chemical, plastic and agricultural products and services. Its Terneuzen manufacturing facilities in The Netherlands require a significant amount of freshwater. However, the local water is brackish, requiring freshwater to be transported a distance of ~100 km. Because the freshwater is utilized by both industry and municipalities, Dow needs to reduce potentially major business risks of increased scarcity and increased costs of freshwater.

The response

The Terneuzen project – using household water to reduce impacts linked to freshwater use

The objective of the Terneuzen project is to provide a long-term, cost-effective, reliable supply of water for the industrial site. Development of the "household wastewater utilization" project began in early 2005 with implementation occurring in early 2007. Together with regional partners, the utility provider Evides and the regional Water Board, a robust integrated water management system was created. Thanks to this scheme, the Terneuzen site is now taking the local community's treated wastewater, which was previously discharged directly into the river, and reusing it twice – firstly for steam production in manufacturing plants and then again in cooling towers – before releasing it into the atmosphere as vapor.

Since 2007, the site accepts more than 9.9 million liters of municipal household wastewater every day. Dow has been able to cut its freshwater use in half by using the wastewater from the municipality and also through recycling efforts. By managing water in this manner, Dow has also reduced the amount of brackish water required.

The underlying philosophy of this project is that freshwater should, in priority, be available for potable water use and thus industry should find innovative ways to reuse water multiple times.

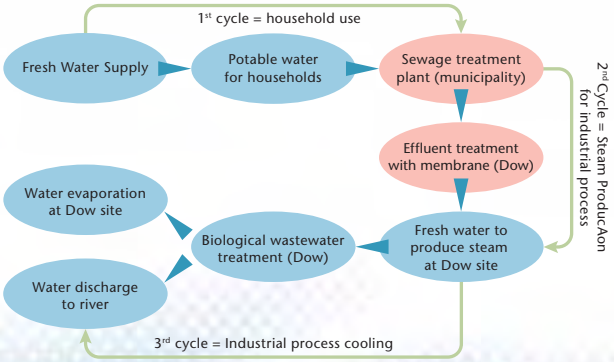
The results

Reducing impacts, while improving costs

Along with significant reductions in the amount of freshwater used by the site, an additional major environmental benefit lies in the fact that the household wastewater can be purified under lower pressure than the salt water that was used in the past. This translates into 65% less energy and 500 tons fewer chemicals to be used per year, and consequently 5,000 tons less CO_2 is discharged annually. As an additional outcome, every liter of water is used three times, instead of once.

The result is a reliable long term water supply for the site which allows the manufacturing facilities to be cost effective. A key aspect of this project is the partnership between Dow, the water company Evides and the regional Water Board. This partnership allows water to be supplied for the same prices as Dow had paid in the past.

Water use at Dow Industrial site – Reusing every liter of water three times



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Planting trees in the Philippines to preserve biodiversity

The business case

In the Philippines, Pioneer Hi-Bred is carrying out a reforestation program that aims to positively impact its environment so that the company can benefit from improved water and soil conditions. It demonstrates that corporation involvement in biodiversity conservation projects can positively impact business prospects.

The issue

How deforestation can impact farming

Pioneer Hi-Bred, a DuPont business, is a company providing customized solutions for farmers, livestock producers grain and oilseed processors. It runs a seed production plant in the Philippines, located close to the Mt. Makiling Reserve, in the South of Manila. Over the last few decades, the Reserve has suffered from deforestation, and the runoff from soil erosion has started to impact water quality. This in turn has begun to impact the quality of Pioneer Hi-Bred production fields. Therefore local Pioneer Hi-Bred and DuPont Crop Protection teams have started to work with the local government and communities to develop a tree-planting program.

The response

The program aims to directly improve soil and water quality, which in turn impacts seed quality. It also aims to have a major positive impact on the biodiversity of the area, as the Mt. Makiling Reserve is one of the few remaining areas in the country with large areas of intact natural forests and a high diversity of flora and fauna.

Not just financing; direct employee involvement

The tree-planting and nurturing project was intended to encourage employees to actively participate in the preservation and improvement of their ecosystems. The project started in June 2001 in cooperation with the Philippines High School for the Arts, University of the Philippines-Los Baños and the Makiling Center for Mountain Ecosystems.

Ensuring that the seedlings planted would reach maturity was a major goal of this project. Therefore, as well as planting seedlings, DuPont also fertilized the trees planted from the previous years to help ensure the trees' growth.

DuPont is one of several companies that sustained the project and have made it an annual activity. All its employees participate in this annual environmental, community outreach and improvement program.

The results

Increasing biodiversity to strengthen relations with stakeholders

During its first year, DuPont planted 1,165 seedlings in the allotted 2.51 hectare land in Mt. Makiling. Now in its 10th year, the company's allotted land has increased to 3.11 hectares with more than 6,000 standing trees.

This project also helped to strengthen the relationships Pioneer, DuPont leaders and employees have with local government officials, the community and business leaders, helping to secure its future license to operate in the region.

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Implementing "zero impact" invoices

The business case

Committed to neutralize the environmental impacts associated with its paper invoicing process, EDP has engaged in a compensation program based on (1) life cycle assessment and (2) externalities compensation through agro-forestry good practices that restore the ecosystem service originally impacted by invoicing activities.

The issue

The environmental impact of invoicing

EDP – Energias de Portugal, an electrical utility company, distributes around 34 million paper invoices per year in Portugal, a quantity that has non-negligible environmental impacts. To mitigate these impacts, EDP has first committed to reduce the number of invoices mailed out every month. In 2007, it started to promote on-line invoice services, and by the end of 2009, more than 500.000 clients had joined the initiative. The company was willing to go further and to compensate all the impacts resulting from its paper invoicing process, through an innovative environmental compensation methodology.

The response

Life Cycle Assessment methodology to assess impacts on ecosystems

The approach, called "Zero Impact" has been developed at the Lisbon school of engineering – *Instituto Superior Técnico*. It goes beyond the offset of CO_2 emissions in voluntary markets (already common worldwide), as it aims to quantify and cover all negative environmental externalities of the life cycle of paper invoices. The software used for this Life Cycle Assessment (Sigma Pro 6.0) accounts for the resources, energy and equipment used for generating invoices (paper, plastic and printing process), as well as for invoices delivery (fuel).

The offset initiative consists mostly in agro-forestry good practices, which are implemented in rural areas. The approach is as follows:

1) Compensation of environmental impacts is carried out in the same ecosystem service category and, whenever possible, in the same location.
2) When not possible, compensation is carried out in another ecosystem service category.

The compensation initiatives cover most of the impacts on ecosystem services, as for example: water used for paper production, or soil protection provided by the agro-forestry good practices implemented in the vicinity of EDP's activities.

The remaining negative impacts not covered by the agro-forestry initiative are compensated through the CO_2 markets, representing approximately 1120 tons of CO_2 credits.

The results

An ecosystem services approach at the basis of success

The methodology used has proved to have clear biodiversity conservation results. Compensation activities included not only 9.800 m^3/year of water savings through irrigation process optimization, 585 ha of agriculture best practice use, but also incorporated biodiversity conservation projects such as soil nest protection (691 ha) or protection of riverbed vegetation (2,1 km). It also helped reinforce relations with stakeholders and in particular local communities.

Its first implementation was a success and has led to its extension for another 3 years, allowing EDP to evaluate the perspective of making this approach a new business opportunity in the future by using biodiversity market mechanisms.

FURTHER INFORMATION
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Fibria

Band-tailed Hornero (Furnarius figulus)

Setting private natural heritage reserves

The business case

Owning large natural reserves as part of its forestry activities in Brazil, Fibria has chosen to register its most biodiverse lands as part of the Brazilian-specific Private Natural Heritage Reserves scheme. Recognition of Fibria's conservation efforts is expected to further increase public and stakeholder awareness on company conservation activities.

The issue

Gaining recognition for environmental conservation

As a pulp and paper company, Fibria's activities involve the management of forests. In Brazil, the company owns an area of 1,043,000 hectares, of which 393,000 hectares are native reserves dedicated to environmental conservation. Fibria aims to have recognition from the Brazilian government for this initiative and has thus engaged in a protection program under the Brazilian legal framework called Private Natural Heritage Reserves (or Reserva Particular do Patrimônio Natural, RPPN).

The RPPN is a system that was created by Federal Decree 20 years ago and is unparalleled in the rest of the world. It provides a mechanism for the creation of environmental conservation areas on private land. RPPNs are voluntarily established by the landowner who makes a commitment to preserve nature and guarantee that the area will be protected indefinitely. RPPN registration approval by the Brazilian public environmental agency depends on the environmental attributes of the land such as its biodiversity, water resources, and scenic beauty. But it also includes obligations for the private landowner, such as ensuring that the environmental characteristics of the area are maintained and gaining approval of land use zoning plans. Today, Brazil has around 1,000 of these private reserves, covering a total area of 700,000 hectares.

The response

Implementing biodiversity conservation initiatives in Private Natural Heritage Reserves

Fibria decided to apply for RPPN registration for a total of 6,367 hectares of land. In these areas, Fibria is implementing different biodiversity conservation initiatives, and among others, is enhancing biological diversity through the expansion of the areas connected by ecological corridors. Fibria devotes its efforts to not only setting up the reserves, but also carrying out the support work of cataloguing, maintenance and studying the biodiversity in depth, together with the assistance of institutions, NGOs and universities. Fibria will, therefore, allow the land to be used for scientific studies on biodiversity and will also grant access to the public for environmental education projects.

The results

Registration as a key communication tool toward stakeholders

Fibria has now completed the legalization process for 3 RPPNs, representing a total of 2,677 hectares. These RPPNs are:

- Restinga de Aracruz, which is one of the only preserved areas of coastal forest in the north of Espírito Santo;
- Recanto das Antas, situated in Linhares (ES) within the Atlantic Forest biome. It is among the ten largest RPPNs within Brazil's Atlantic Forest biome according to the *Instituto BioAtlântica*, and is home of the tapir, one of the largest mammals in the Americas; and
- Mutum Preto, also located in Linhares (ES) within the Atlantic Forest biome. It is home to the black curassow, an endemic bird that is in danger of extinction.

An additional submission for a total of 3,690 hectares is also currently under approval by the Brazilian government. These areas are now better protected and studied, and their records are part of the management plan that is being drawn up and submitted to environmental agencies.

While generating public awareness on its biodiversity conservation initiatives, the recognition of these lands as RPPNs will help strengthen Fibria's ties with government agencies and NGOs active in environmental conservation.

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Partnering for biodiversity conservation on landfill sites

The business case

As part of its reputational risk management, SITA France is developing different programs aiming to conserve biodiversity on its landfill sites. These initiatives include field programs, such as the Red Kite conservation project, and development of new methodologies designed to better assess impacts on biodiversity and consequently better monitor conservation and rehabilitation actions.

The issue

SITA France, a GDF SUEZ group company, is specialized in waste management. From collection to recycling, treatment, and landfill operations, it manages a great number of facilities across France. Landfills impact ecosystems since they occupy large areas of non-developed land and can induce changes in the population equilibrium by being a foreign source of food for local fauna. As the company depends on public acceptance to secure its license to operate, SITA France needs to mitigate its impact on local biodiversity and to show active involvement in biodiversity conservation. It has designed different projects to respond to these objectives.

The response

Program 1 – A biodiversity quality index to assess biodiversity conservation plans

Implementation of conservation plans in and around landfills, and restoration measures after exploitation require the understanding of specific local stakes for each landfill. However, there is currently no simple standardized, ready-made tool that allows this analysis. SITA France has therefore decided to develop a tool that could help to assess the ecological quality of the sites, with the objective of tracking the effects of conservation and implementing restoration measures on its landfill sites in a standardized way.

Developing a standardized evaluation – Biodiversity Quality Index

In cooperation with the French Natural History Museum (MNHN), SITA France has developed a Biodiversity Quality Index (BQI) for landfill sites that was tested on 20 of its French sites. The BQI allows the assessment of landfill sites ecological quality, giving them a score out of 100. The Index is the result of the evaluation of several variables used to characterize the ecological interest of all types of sites. According to the results of standardized field investigations, each variable is given a mark, which is then totalled to produce a global biodiversity quality score.

This Index is a decision-making tool to improve biodiversity management on landfill sites: the mark attributed to each variable allows the determination of weaknesses and strengths of actual land management, and is thus used to define the objectives of biodiversity management plans on landfill sites. The follow-up of these variables will be a measure of the effectiveness of biodiversity management plans, which can be adapted every year, if necessary.

Red kite, Milvus milvus. © Christian Aussaguel, LPO

Program 2 – Red Kite conservation on landfill sites

SITA France operates over 80 landfill sites in France, and has a key role to play regarding the conservation of the Red Kite. This great long-winged European bird is threatened due to a number of reasons such as intensive agriculture which eradicates its potential prey and degrades its habitat, or collisions with cars and electric cables.

A two-fold program: direct actions and sensitization

In order to contribute to the conservation of the Red Kite species, SITA France established a partnership with the French Bird Protection League (LPO) in 2008. Several feeding platforms were built in 2009 and adequate food was supplied during the winter months in order to maintain juveniles which could not yet migrate in good health. Landfill site staff were also trained in raptor identification so they could contribute to data collection and knowledge about Kite species. Action to safeguard this species also includes sensitization, in which scholars and the general public are invited to the landfill sites at least every year to observe Red Kites, learn about its ecology and the causes of its decline, so they can in turn join the conservation efforts.

The historical presence of Red Kites on landfills is an opportunity for SITA France to involve its employees in the conservation of this species and also to inform the general public about its actions to protect biodiversity.

Centre landfill, © Philippe Gourdain, MNHN

The results

These two examples demonstrate the company's involvement in conserving biodiversity on its landfill sites, whether it is through field projects (Red Kite conservation) or elaboration of structured methodology (Biodiversity Quality Index). These initiatives are critical to the acceptance of landfills at regional and national levels, and are therefore the key to strengthening SITA France's future activities.

FURTHER INFORMATION

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Creating an oasis of biodiversity

The business case

Committed to returning land to the community in an even better condition than before exploitation, Holcim Spain has engaged in a rehabilitation program based on the definition of a clear strategy including new land design and habitat creation.

The issue

Quarry rehabilitation, at the core of the company's strategy

Holcim Spain is a company that produces and distributes cement, aggregate, concrete and mortar. It has owned the El Puente gravel quarry since 1989, a site in operation since 1979.

The production of cement and aggregates depends on long term access to raw materials, which in turn depends on safeguarding the environment and relationships with stakeholders. It is thus critical for Holcim to ensure that the land on which it operates is returned to the community with an environmental quality equal or greater to that existing before exploitation, while also producing tangible social and economic results.

The response

Rehabilitation needs a clear and defined strategy

Holcim Spain's restoration methodology follows a long term strategy involving clear objectives from land design to biodiversity creation, which started with preliminary studies and will end when the exploited area is completely rehabilitated.

Before exploitation started in 1979, the land was used for agricultural purposes, which means that the biodiversity level was basic. When Holcim took over exploitation in 1989, it worked with an independent biologist on restoration plans to be held in parallel with quarry exploitation. It was then decided to take advantage of the Jarama River running through it to create and enhance wetland environments. The rehabilitated areas were transformed into a series of habitats with different flora and fauna. The restoration design included different water depths, islands, irregular banks, marshland vegetation, and partial recovery of riverside forests, ensuring natural links to the adjacent riverside and marshy vegetation. Attention was given to nesting areas, spaces for feeding, resting, refuge, and areas for monitoring the birds. As a result, the rehabilitated areas now have greater environmental quality than before quarrying began, attracting species that were not there at the time when the land was occupied only by agricultural fields.

The results

The 180 hectares of land are now home to 200 different bird species, 72 of which are aquatic and four in danger of extinction. In a year, over half of Spain's usual species can be spotted in the human-made lakes of El Puente, and about 4,300 birds pass through monthly, a record even by international standards.

An award-winning project

The restoration effort has received numerous accolades from government and industry. In 2008 it was declared a special bird protection zone by the regional government. It went on to receive the Special Biodiversity Award by the Spanish Aggregates Federation (FdA) in 2009 and the UEPG Sustainable Development Special Biodiversity Award in 2010. These awards have a direct positive impact on Holcim's relations with its stakeholders, and consequently its future license to operate.

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Building local plant nurseries for the rehabilitation of quarries

The business case

As part of its quarry rehabilitation process, Lafarge has developed local plant nurseries that respect indigenous species and are adapted to the local environment. This initiative is part of broader methodologies and best practices developed by the company to optimize its quarry reclamation, with the final objective of strengthening the acceptability of its operations in the long run.

The issue

Mitigating impacts and restoring biodiversity, critical steps for extractive industries

Lafarge is a French group operating in resources extraction and building materials. Extractive industries have potential impacts on biodiversity, for example, through the removal of soil in the early stages of extraction, or through the destruction of habitats during the mining operations. Mitigating biodiversity impacts during operations, and rehabilitating the site afterwards, is therefore critical as it is linked to the acceptability of Lafarge's operations in the long run and its company reputation.

The response

Plant nurseries as part of biodiversity restoration

To maximize the conservation interest of its restoration projects, Lafarge has developed a number of tools and best practices organized in a biodiversity management system.

The creation of local nurseries is an important feature of the rehabilitation process as plants ensure soil stability and landscape integration. Local nurseries ensure the respect of indigenous species, the adaptation to the local biogeographical context, and avoid the spread of invasive species.

Plant nurseries have been created specifically in Uganda and the Philippines where Lafarge is rehabilitating quarries. The quarry team, together with a workforce from the local community, selects and collects seeds, and grows plants in significant numbers. In some cases, seeds or material for vegetative multiplication are collected directly in the vicinity of the quarry. Local know-how also plays an important role: local communities sometimes help choose the potentially most adapted species and build the protocols for plant multiplication, planting and after care. In some quarries, partnerships with botanical authorities can also be the ultimate stage of the process in order to formalize the way the plants are selected, according to their adaptation to local conditions.

The results

Specific outcomes in Uganda

In Uganda, the nursery has a production capacity of 100,000 seedlings per year including seedlings for alternative fuel: 30,000-50,000 seedlings are used for alternative fuel plantations and approximately 12,000-15,000 seedlings are used for rehabilitating the mined area. The local communities, on average, receive around 30,000 to 50,000 seedlings depending on the applications made by the community members for seedlings each season. The nursery project itself employs more than 30 people. These actions, whilst helping Lafarge rehabilitate its former quarry, have also helped the company secure its operations in the region.

FURTHER INFORMATION

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Protecting ecosystems and producing rubber in a sustainable way

The business case

In response to productivity decline issues in its hevea plantation in Brazil, Michelin has started developing in 2002 a multi-faceted project involving local producers and aiming for social, environmental and economic positive impacts. Among other results, the project has led to the creation of a 3,000 ha environmental reserve.

The issue

Rubber, the basis of Michelin's business

Michelin, a company producing and selling tires, uses natural rubber, a renewable raw material produced by hevea trees, in its tire manufacturing process.

At the end of 2001, Michelin was confronted with a combination of crucial issues surrounding its hevea tree plantation in the state of Bahia, on the northeastern coast of Brazil. Productivity had been decreasing, due to structural factors: topography of the area, decline of the yield due to the age of the trees and the *Mycrocyclus Ulei* leaf disease. The price of natural rubber had also been decreasing. Michelin was thus forced to decide how to cope with these broad issues.

The response

Different projects with the same objective: conservation and sustainable use of the region's biodiversity

Playing a key economical role in a region of low economic development, and holding a unique ecological wealth in an endangered primary Atlantic forest, Michelin decided to tackle the issue through the implementation of a new business model and organizational structure, based on social, environmental and economic targets.

The project's basic idea was to divide the original plantation into 12 medium-sized plantations of 400 hectares each. The plots of land would then be sold to Brazilian Michelin managers, enabling them to replant with new varieties of rubber tree resistant to *Microcyclus*, and to develop other types of culture between the lines of hevea, such as cocoa and banana, according to farming models created by Michelin's agronomists.

In addition to these initiatives, the company developed family-owned rubber plantations by providing small neighboring farms (1,000 families) with resistant varieties of hevea, produced by the breeding research program led by Michelin and CIRAD (International Center for Agronomic Research and Development, France). Michelin also decided to donate 18 hectares of land for the construction of a new village, named Nova Igrapiuna, mainly for the tappers and their families.

As a complementary program, Michelin also launched the *Ouro Verde* project, aimed at preserving primary Atlantic forest threatened by deforestation. Three plots of primary Atlantic forest, with a total surface area of 800 hectares offering exceptional biodiversity, were located on the hevea plantation. The company purchased an additional 550 ha plot and created 1,650 ha of ecological "corridors" linking the plots by planting native species between the rows of rubber trees. This environmental reserve now totals 3,000 ha. The reserve is managed by Michelin scientists and has a 35,000-unit tree nursery, using the seeds from 100 different native species.

The results

This new Michelin strategy based on the inhabitants' involvement has proved to be successful. Besides helping to replant new resistant hevea, the program has empowered people who depend on the plantation for their livelihood and has consequently increased the plantation's productivity.

By creating different complementary programs that generate social, environmental and economic results for the local communities, Michelin greatly improved the rubber supply for its operations, enhanced its reputation with consumers and environmental stakeholders, and kept the competition at bay.

FURTHER INFORMATION
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Restoring wetlands to secure water supply

The Zoar wetland three years after restoration

The business case

Highly dependent on water availability for its operations, Mondi leads a multi-stakeholder wetland restoration program in South Africa. The program has resulted in the loss of commercial forest for Mondi, a cost that is, nevertheless, part of the company's social and environmental license to operate.

The issue

A high water dependency

Mondi, an integrated paper and packaging producer, owns plantations in South Africa, a part of the world where fresh water is a scarce resource and where an estimated 6 million people do not have access to sufficient potable water to satisfy their needs. Furthermore, an estimated 55% of South Africa's wetlands to date have been significantly damaged due to poorly managed agriculture and commercial forestry; mining, urban development, pollution, dam building, erosion and fire. Because Mondi's commercial activities (commercial forests and processing plants) use significant volumes of water, it relies on healthy wetlands and riparian zones.

The response

Towards securing water availability – restoration and education

Mondi is the principal sponsor of the Mondi Wetlands Programme (MWP), a partnership between Mondi and South Africa's two largest NGO conservation organizations (WWF South Africa and the Wildlife and Environment Society of South Africa) together with the Mazda Wildlife Fund. The program is making an important contribution to the protection and rehabilitation of wetlands and riparian areas in South Africa. Through WWF, it has achieved international recognition for success in bringing about social change that encourages wetland users and owners to manage their wetland resources in a more environmentally relevant manner. It primarily does so by using a number of strategies:

- Raising awareness
- Policy work and lobbying
- Catalyzing partnerships
- Research-based management tools and resources
- Training and on-the-ground support

Giving up productive forestry to help recovery of freshwater resources and biodiversity

With the support of the MWP, Mondi is assessing the health of all significant wetlands on land it manages, and strengthening its wetland sustainable practices. It has almost completed the process of removing all its commercial trees on, or close to, riparian or wetland areas, which encourages the recovery of natural freshwater resources and associated biodiversity. This has involved the loss of approximately 5% of Mondi's productive forestry land at an opportunity cost of around 200,000 tons of wood a year.

The results

These responsible actions make a substantial contribution to the maintenance of functioning freshwater systems and biodiversity in South Africa. The costs form part of Mondi's social and environmental license to operate and its commitment to downstream communities.

FURTHER INFORMATION

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Sharing the benefits arising from the use of biodiversity in cosmetics

The business case

Relying on the natural ingredients it sources in Brazil for its cosmetic product manufacturing and R&D, Natura has engaged in strong partnerships with local communities, who are not only compensated for the supply of raw ingredients, but also rewarded for their knowledge through benefit sharing.

The issue

Sustainability as a business platform

Natura is a Brazilian cosmetic, fragrance and personal hygiene products company that has adopted the sustainable use of Brazilian biodiversity as a business platform since 2000, combining scientific research and the wisdom of traditional communities. The communities' traditional knowledge is leveraged to develop technologies and cosmetic solutions that allow creation of products with differentiated qualities for the consumer, while resulting in socio-environmental gains through partnerships with communities.

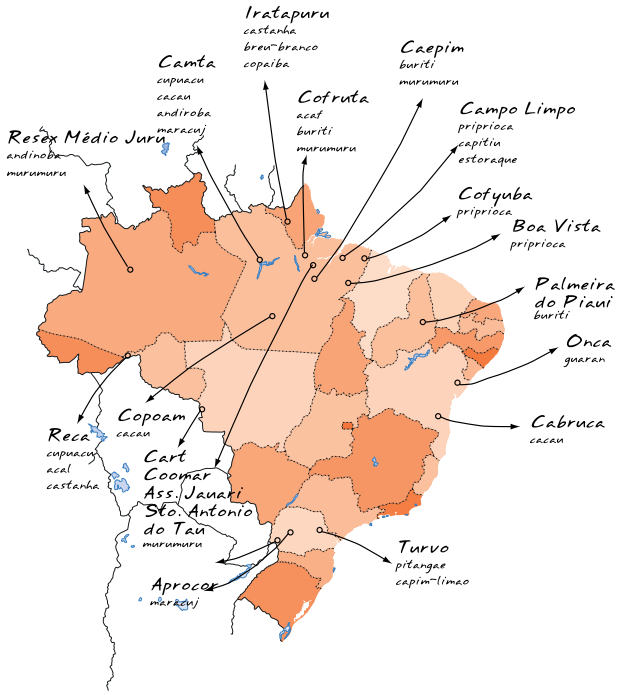
The greatest expression of the sustainable use of Brazilian biodiversity is the cosmetic line Natura Ekos, consisting of around 100 products.

The response

Respecting the criteria of the Convention on Biological Diversity

When developing new products, Natura Ekos establishes partnerships with indigenous communities to source raw materials to be used in the brand's product. To underpin this relationship, it adopts the principles of the Convention on Biological Diversity, seeking to promote fair trade, sustainable use, social development and biodiversity conservation.

Natura has developed partnerships with 26 communities, who, in return for providing access to the natural ingredients and their traditional knowledge, receive direct payments and benefits from other investments made by Natura in local development.



Supplier communities throughout Brazil

The values received by traditional communities in 2009 were as follows:

US$ Thousands	*2009*
Supply	1.531
Benefit sharing	587
Local Development Funds	632
Use of image	8
Training	84
Certification and management	15
Studies, consultancy and support	207
Total	**3.065**

The results

A "win-win" partnership

Natura Ekos is a business model that creates a virtuous cycle, generating wealth for all, whilst returning value to the place of origin:

- The community benefits from Natura's activities because the partnership generates income for families;
- Natura benefits from its business platform because it generates higher revenues through products with greater appeal to consumers;
- Consumers benefit from Natura's initiative because they are proposed products with high quality natural ingredients; and
- Nature benefits from Natura's activities because the community takes care of its forests to ensure a better quality of life for itself and for future generations.

The example of Maracatu project

In March 2010, Natura launched a new toilet soap line under the Ekos brand, which includes in its formula from 20% to 50% of pure oils extracted from Brazilian fruits, such as cupuaçu, cacao, passion fruit and murumuru. Named the Maracatu Project, it marked the expansion of Natura's proposal for the sustainable use of Brazilian biodiversity as a technological platform.

Murumuru, a species to protect

One of Ekos' most successful products is produced from the oil of the murumuru, the fruit of a native palm tree from the Amazon Forest. The extraction work of the oil involves 157 families from the interior of the State of Pará. The murumuru was not considered very useful by the families from that region; not even as food. These trees, which have sharp thorns all along their trunks, stood in the way of the families who were ready to cut them down and replace them with more profitable crops such as the Açaí berry, which is highly prized in both local and foreign markets. Murumuru was at risk of extinction in the region.

Sustainable use of the product to preserve biodiversity and promote social inclusion

Natura's project raised awareness of the value of this species through its stewardship by the communities and, consequently, the potential for generating income by the families through the harvesting of murumuru. Through this model, Natura supported the development of a supply chain that encompasses everything from forest-mapping for identifying the species, to socio-economic and cultural evaluation, as well as the training of communities. This process generated work, promoted social inclusion in a region that faces many social challenges, and helped keep the forest standing strong. Natura estimates that the project provided the preservation of approximately 3,000 trees. From a business perspective, the project allowed Natura to innovate, using an original natural ingredient, while securing its future ingredients supply.

FURTHER INFORMATION
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Using market mechanisms to protect biodiversity at the Panama Canal basin

The business case

To answer freshwater supply challenges caused by population growth and increase of productive activities, the Panama Canal Authority (ACP) is designing new biodiversity protection and restoration projects that are to be financed by market mechanisms such as carbon credits and REDD+.

The issue

The Panama Canal basin, an area to protect

The Panama Canal Authority (ACP), an agency of the Government of Panama, is the body responsible for the operation, management, preservation and maintenance of the Panama Canal so that it can operate in a safe, continuous and profitable manner. This man-made canal is the only waterway in the world draining into two oceans, and it runs solely with freshwater stored at the Panama Canal basin. Each time a ship crosses the canal, freshwater from the basin flows by gravity from Gatun Lake -85 feet above sea level- into the locks, thus preventing salt water intrusion which could destroy the canal ecosystem. Given its proximity to the country's largest cities, the Panama Canal basin is a territory influenced by population growth and a variety of productive activities that occur in its environment – industrial, maritime, touristic, agricultural, livestock, forestry, and fisheries, among others. However, population growth and development activities have put pressure on the area's natural resources, and in particular, on freshwater availability. Being highly dependent on the basin freshwater availability, ACP has a major role to play in the conservation and protection of the region's water resource, in coordination with the stakeholders.

The response

Using market mechanisms to finance conservation activities

To address this situation, ACP established in 2008 a 20 year project called "The Environmental Economic Incentives Program", aimed to protect the quantity and quality of the water resources. The final objective is to ensure the availability of freshwater for more than half of the country's population, for the Panama Canal operation, and other human activities.

The conservation program is based on three main aspects:

1. The protection of existing forest cover and regulation of land use, according to the area's ability to preserve the quality and quantity of water resources in strategically important sites of the basin;
2. The recovery of specific areas through the implementation of agroforestry, silvopastoral systems, and reforestation activities at community-level continuous sites, and
3. The inclusion of commercial reforestation activities, involving local farmers in a long-term basin conservation scheme.

ACP made the initial investment to design and implement the first phase of these ecosystem restoration projects. In the midterm, it will be financed through market instruments that will allow the assignation of an economic value to the natural resources. Among other mechanisms, ACP is working on the possibility to obtain certified emissions reductions in voluntary markets for its forest conservation programs. If ACP succeeds in selling such carbon credits in the carbon market, it will then obtain additional funds for replicating the model in other areas of the basin.

In addition, ACP is considering integrating other compensation schemes, such as the Reduced Emissions form Deforestation and Land Degradation (REDD+) program. This scheme has the potential to mitigate millions of tons of CO_2 in protected forest areas.

The results

A great potential in both extent and value

The credit compensation program will cover an estimated area of 20,000 hectares and should reduce tons of CO_2 emissions in a 20-years period by incorporating forestry activities. The REDD+ scheme could also potentially cover forested areas at sites located primarily in two national parks (Soberania and Camino de Cruces).

The use of market mechanisms will help the Panamanian government to replicate this model at a larger scale, therefore having a broader impact, and ultimately helping to secure the water supply in the region for its activities and for the country's population.

FURTHER INFORMATION
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PEPSICO

Growing a staple food with less water & fewer GHG emissions in India

The business case

Committed to conserving more water than it uses in India, PepsiCo has engaged in a water use reduction program in agriculture, a sector that accounts for over 85% of the country's water consumption, and which offers significant water saving opportunities.

The issue

Agriculture in India, a water intensive sector

PepsiCo, a consumer products company, operates several beverage manufacturing plants in India. Engaged in a process of securing a reliable water supply for its operations, PepsiCo committed in 2003 to conserve more water than it uses.

In India, all industry accounts for about 6% of total water use, whereas agriculture uses over 85% of the country's water. The country is also among the largest rice growers in the world, growing about 144 million tons of paddy over roughly 44 million hectares. Indian rice has traditionally been cultivated via a conventional, water-intensive method that begins by sowing seeds in a small nursery where they germinate into saplings. The saplings are then transplanted manually to a field and grown in 10-12.5 cm of water at their base for the first 6-8 weeks.

PepsiCo has therefore identified rice growing as a main opportunity for water use reduction in the country, and has consequently implemented a program based on direct seeding methodologies of rice.

The response

Water savings through direct seeding of rice

PepsiCo's R&D team has been experimenting with direct seeding of rice (DSR) for four years. With the DSR method, seeds are sown directly in the field and do not require water at the crop base. This saves 30% (2.25 million liters/ha) of the water historically needed in rice seeding.

PepsiCo has also introduced a special tractor with a direct seeding machine to automate the process, and given Indian farmers free access to the tractors and to field technicians who guide them through the entire cultivation process. In addition to saving water, the new technology is reducing costs for farmers by 3500 rupees per hectare as compared to their traditional methods.

The results

In 2009 DSR was perfected, and extended to 2630 hectares throughout India, resulting in a saving of 5.5 billion liters of water. This significant reduction of water use has allowed PepsiCo India to achieve positive water balance – giving back more water than its business consumed. More importantly, it has reduced water usage in a country where water is an increasingly precious commodity.

In late 2009, PepsiCo received confirmation from a nodal body of the Indian Government that, in addition to the significant water savings that direct seeding affords, it also reduces greenhouse gas (GHG) emissions (from decreased methanogenic activity) by over 70%, which will create new business opportunities when this new method of GHG reduction is certified in the future.

This program has helped PepsiCo India to become a positive water balance company, to reduce greenhouse gas emissions, therefore enhancing its sustainable image, and securing its license to operate in the country.

DIFFERENT STAGES OF DIRECT SEEDING CROP

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Portucel Soporcel Group image

Integrating biodiversity conservation in the forest management model

The business case

Portucel Soporcel, an important landowner in the paper and pulp sector, has developed a systematic methodology to map, define, implement and monitor action plans in zones of special conservation interest, in order to preserve ecosystems integrity. Through this strategy, the company aims to improve plantation management as well as increase biodiversity in the areas of implementation.

The issue

The need for new tools to manage plantations in a diverse landscape

The Portucel Soporcel Group, a major player on the international paper and pulp market and European leader in the production of uncoated woodfree paper, manages 120,000 hectares of forest, comprised not only of eucalyptus plantations (around 73%), but also of cork oak, pines, other conifers and broadleaved species, in addition to several patches of natural and seminatural habitats. Such an important area of estate and multiplicity of natural assets has triggered the need to define new planning and management approaches, based on the systematic assessment of relevant natural values, and to define measures to maintain or enhance their conservation status. The company firmly believes that well-managed plantations can positively contribute to ecosystem integrity at the landscape level.

The response

A tailor-made methodology based on valuation, impact assessment and conservation actions

Portucel Soporcel has consequently developed a specific strategy to preserve ecosystems integrity and has been implementing it through afforestation/reforestation projects and through projects involving specialists and partnerships.

The method first begins with the identification of natural values in the forest, by performing pre-operation assessment of potential impacts and a survey of habitats, flora and fauna using its own biodiversity manuals. The company then produces adequate mapping of zones they are seeking to conserve. Subsequently, with consideration made to the specific habitat and special species conservation status, conservation plans and plantation designs are defined for implementation and monitoring by the forest project team and operational staff. Examples of practical measures include:

- The use of selected genotypes based on long term knowledge of their behavior and adaptation to the soil type and climate;
- Stakeholder consultation on red listed species;
- Identification and preservation of existing valuable habitats and natural/semi-natural vegetation within the plantations;
- Creation of protective buffer zones around water courses;
- Preservation and enhancement of wildlife corridors and other connectivity features;
- Promotion of structural diversity through a mosaic of species, clones, age classes, habitats and naturally or artificially created discontinuity strips; and
- Seasoning of operations to preserve the biological cycles of relevant fauna or to avoid negative soil and water impacts and to control pests and diseases.

The results

By end of 2009, biodiversity assessments were completed in a large part of the estate. The company's manuals and conservation action plans were documented for over 40% of the area managed by the Group and around 12,000 hectares were classified as zones with interest for conservation. The conservation action plans proved to be successful in improving plantation management as well as biodiversity in the areas where they were implemented. By involving multiple stakeholders, these plans also strengthened Portucel Soporcel's communication and stakeholder's consultation opportunities in the regions where it operates.

FURTHER INFORMATION
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Protecting local species for impact mitigation and creation of new business opportunities

The business case

Companies working in the field of tourism, such as the Sol Meliá hotel group, are starting to take biodiversity protection measures such as habitat restoration or endangered species protection not only for the objective of mitigating their ecological impacts, but also to differentiate their brand.

The issue

Tourism impacts and depends on the environment

Mexico is one of the countries with the largest number of turtles in the world. Of the seven species of turtles which exist, six live in Mexican waters and are hatched on its beaches. Tourism may have a negative impact on turtle populations, mainly due to the degradation and/or destruction of the beaches where they lay their eggs. Excessive light may also affect the behavior of the adult females when nesting, and attract the newly born turtles away from the sea. On the other hand, tourism is also dependent on a healthy natural environment. The protection of ecosystems is the best way to ensure the beauty and exclusivity of natural environments, to make them unique and to attract tourists.

The response

Mitigating its impacts and strengthening its position as a responsible group were the two motivations for the Sol Meliá hotel group in Mexico to engage in a turtle protection program in 2009.

Direct collaboration and education, the two pillars of the program

Although all the group's hotels have helped in different ways, there were two main types of cooperation:

- Participation of guests in releasing recently born turtles. This action was important because it raised guests' awareness, as it also included a presentation about the turtles, their lifecycle and the importance of their preservation.
- Active cooperation in the protection of nests and baby turtles. Hotels whose beaches are used for nesting helped the local environmental police to protect and guard the nests and the newly born turtles.

The results

Among other results, in 2009 the Sol Meliá hotels located in Mexico, thanks to their sea turtles protection program, directly involved 3770 guests from the hotels, and helped protect approximately 4216 baby turtles of the Green sea and Olive ridley* endangered turtle species.

A new mandate for tourism

The Sol Meliá hotel group example shows that protecting local endangered species can be part of the attraction of the destination, therefore creating a new business opportunity for tourism, at a time when consumers are more and more concerned by their potential environmental impact.

FURTHER INFORMATION
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SOMPO JAPAN

Utilizing financing mechanisms to protect Japanese satoyama biodiversity

The business case

Aware of the role finance has to play in the field of biodiversity projects funding, Sompo Japan has developed a loan mechanism that fosters investments in ecological housing and finances a charity fund dedicated to Japanese specific landscape protection.

The issue

Including biodiversity in financing mechanisms

The Sompo Japan Group, specializing in finance and insurance, has developed a sustainable development strategy throughout the years in response to increasing pressures for a more responsible finance and investment sector. Sompo Japan is now, for example, marketing six different Socially Responsible Investment (SRI) funds, as well as a wide variety of environment-related insurance protection plans.

Biodiversity conservation is becoming a leading concern in Japan, and Sompo Japan is willing to be positioned as a solution provider in this field.

The response

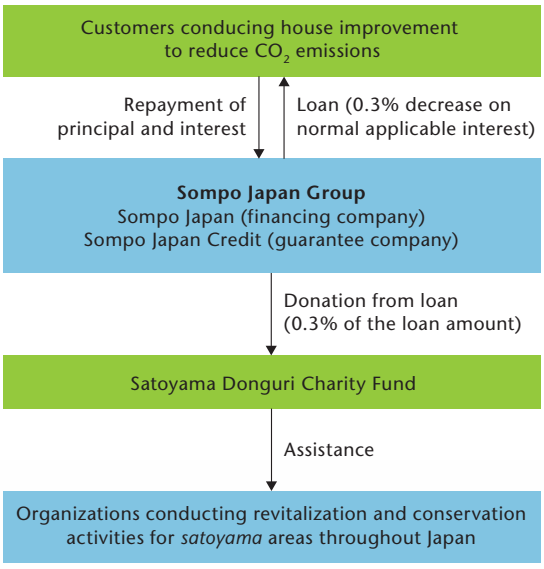
A charity fund to protect *satoyama* ecosystems

As a first step, Sompo Japan introduced biodiversity conservation into the screening criteria of its "Sompo Japan Green Open", an SRI fund that has now become the biggest eco fund in Japan.

Going beyond SRI products, Sompo Japan and Sompo Japan Credit Inc. (SJC) started to work in 2008 on a new loan mechanism aimed to foster investments in ecological housing and biological conservation. Named "Green Reform Loan Plan", the mechanism offers consumers a 0.3% lower interest rate on loans for making ecological improvements on housing that reduce CO_2 emissions. These improvement projects can, for example, include installation of solar photovoltaic panels or "Eco-Cute" hot water systems, a heat pump system that raises the temperature of water by using heat from the air. For its biological conservation efforts, Sompo Japan partnered with Ecology Online (EOL), an environmental NGO, to focus on conserving the *satoyama*, a natural environment intrinsic to Japan. It was decided that 0.3% of the housing improvement project amount would go to a Satoyama Donguri Charity Fund, dedicated to the *satoyama* areas protection.

Satoyama are areas located between mountains and cities that encompass "secondary" nature maintained by human activities, including rural settlements, wooded areas, farmland, and grassland. The work of people in *satoyama* areas has served to make these areas rich in biodiversity. However, *satoyama* areas in Japan are in jeopardy due to modernization that has devastated forests, and also to depopulation in some regions. Revitalizing and conserving these areas is a pillar of Japan's national biodiversity strategy, which is why Sompo Japan and EOL decided to support this cause.

The Loan Plan mechanism can be schematized as follows:



The results

The Green Reform Loan Plan was launched in January 2009. After 2009, the Satoyama Donguri Charity Fund has donated to six different regional NGOs that provide for programs to education children on the environment and ecology in *satoyama* areas.

Overall, this 2009 initiative has created the opportunity for Sompo Japan to build relations with a new stakeholder as well as to strengthen its ties with local communities.

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Reclamation progress at oil sands

August 2010

The business case

Energy development disturbs land – there is no way around that. However, the land is not lost forever and Suncor, an energy company operating in the Canadian oil sands, is developing strategies and new technologies to facilitate and accelerate reclamation of its mining sites.

The issue

A reclamation objective

Suncor Energy Inc. is Canada's largest integrated energy company. Suncor combines a leading position in oil sands with complementary operations in refining and marketing, natural gas production and conventional oil production internationally and offshore East Coast Canada. Suncor's oil sands business unit operates in the Athabasca region of Alberta located in the Canadian boreal forest. In order to address the obvious environmental impacts of oil sands mining, the company is committed to ultimately returning all lands disturbed by mining and in-situ operations to a natural state as close to pre-disturbance conditions as possible. Reclamation is not only a regulatory requirement, but is also a key stakeholder expectation that impacts corporate reputation.

The response

A methodology based on constant research and innovation

Prior to the construction of a new mine or in-situ facility, Suncor develops a conceptual reclamation plan in consultation with local stakeholders and government regulators. It develops plans for land preparation and ultimate reclamation with respect to land impacted by the in-situ operations as well. The Alberta government must approve detailed reclamation plans for all new projects.

Reclamation is a carefully monitored process with several distinct components:

- Transformation of oil sands tailings ponds into solid material that can support vegetation, wildlife and landscape restoration, which includes landform design and soil placement;
- Re-vegetation in a way that the reclaimed landscape can support vegetation and wildlife as self-sustaining ecosystems.

The results

Pond 1, the first reclamation of an oil sands tailing pond

Suncor is currently approaching a milestone – with its first surface reclamation of its former oil sands tailings pond, "Pond 1". The plan is to ultimately transform the company's 220-hectare pond, established in the 1960s, into a mixed wood forest and a small wetland capable of supporting a variety of plants and wildlife.

Reclamation began in 2007 and continues to date. In the first 6 months of 2010 alone, over 150,000 trees were planted on the site. In 2010, Suncor became the first oil sands company to have a tailings pond with a trafficable surface that has progressive reclamation underway. By combining research on innovative reclamation methodologies and multi-stakeholder consultations during all stages of its operations, the company is aiming to increase acceptance of its operations and to consequently maintain its "social license" to operate.

More information on the Suncor website http://sustainability.suncor.com/

Summer 2007

Fall 2008

FURTHER INFORMATION

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Protecting a national park for half a century

The business case

Placing biodiversity conservation at a high priority, TEPCO has chosen to conserve and restore the land it has historically owned since 1951 in Oze, Japan, despite the area's potential for hydroelectric generation. This land management project is now part of the company's social responsibility strategy.

The issue

Managing the company's heritage

TEPCO is a Japanese utilities & power company supplying electricity to the metropolitan Tokyo area. It owns 16,000 hectares of land in the Oze marshland, Gunma prefecture, which was originally acquired by another electric power company in the early 1900s for its abundant water resource, necessary for power generation. TEPCO inherited the land upon its establishment in 1951. In the 1960s, the booming popularity of Oze National Park as a hiking destination brought vast numbers of visitors to the area and caused great damage to the marshland. The company was then faced with the decision on how to best manage this important historical heritage.

The response

Protecting marshlands as part of the company's social responsibility

TEPCO made the decision to preserve this land of unique flora and fauna, and not use it for hydroelectric generation. Nowadays, TEPCO continues to conserve and restore the Oze marshland as part of its social responsibility.

TEPCO has been implementing various measures to conserve the beautiful environment and protect this precious natural asset for almost half a century. As an example, the company has been restoring the Ayamedaira marshland (1ha), which was the Oze area's most damaged during the 1960's hiking boom. To date, its efforts have led to the restoration of approximately 90% of the marshland's green landscape. TEPCO is also currently restoring and renewing about 20 kilometers of the wooden walkways that weave through the park to allow visitors to experience nature at close quarters. In addition, the company has also installed public restrooms with septic tanks in 7 locations, and has placed shoe-sole cleaning mats to prevent foreign plants from entering the park.

The results

Recognition at national and international levels

Restoration and conservation efforts in Oze have led to the recognition of this area as a symbolic place of nature conservation in Japan. Part of the Oze region was designated as a national "Special Natural Monument" in 1960 and in 2007, the entire Oze area (37,200 ha) became a National Park. It has also been registered as a wetland under the Ramsar Convention in 2005, in recognition of its value as a wetland habitat for migratory birds.

These positive outcomes contribute enormously to TEPCO's reputation and image as a socially responsible company, respectful of the environment.

FURTHER INFORMATION
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VALE

Conserving biodiversity in the Atlantic forest of Brazil

The business case

As an important landowner, it is critical for mining company Vale to extend its responsibility to all the lands it owns, even those that are not meant for mining, as part of its corporate social responsibility. Vale is therefore engaged in biodiversity conservation initiatives throughout the world and in particular in Brazil, where the Atlantic Forest is at stake.

The issue

An extended responsibility

Vale, an international player in the field of mining, is committed to reducing its impacts and promoting sustainability of its operations. It has, for example, developed in 2010 its "*Biodiversity Guidelines*" – a set of procedures and tools designed to encourage best practices and continual improvement that must be employed by all of its operating units. As its corporate responsibility strategy, Vale is committed to protecting and restoring its properties. These actions also serve as a means to strengthen its license to operate in the countries where it does business. However, the company's responsibility is not limited to its mining operations, but also includes the land it owns, as well as its adjacent areas.

The response

Protecting an exceptional biome in Brazil – the Reserva Natural Vale

As part of its commitment to conserving biodiversity, Vale protects more than 10,000 km² of natural habitat – nearly 1.1 million hectares – distributed across Brazil and other countries. These areas include sites owned by the company, leased areas and official conservation units, protected in partnership with local government authorities.

More specifically, Vale in Brazil carries out protection projects in 22 areas, including the Reserva Natural Vale, a protected area of over 250 km² owned by Vale and located in the state of Espírito Santo. This reserve is an area of extreme biological importance for the conservation of biodiversity in Atlantic Forest, as recognized by the Brazilian Environmental Ministry and UNESCO when it designated the Brazilian Discovery Coast as World Natural Heritage. To contribute to a better understanding of the area biodiversity, Vale is carrying out research actions by itself and in partnership with other organizations. These projects have included demographic and ecological studies, research into forest dynamics, studies of the structure of local vegetation, and climate change impact assessments. In parallel with these studies, technologies and procedures have been developed for the recovery of degraded areas, including the production of seedlings in a Nursery specialized in Atlantic Forest species. An internationally recognized herbarium is also maintained by Vale, and environmental education activities are also conducted in the Reserve.

The results

In 2009, more than 100 research projects were carried out in the region. Inventory studies have catalogued about 3,000 plant species, 1,460 insect morphospecies, 26 fish species, 66 amphibian, 69 reptiles, 380 birds and 105 mammal species so far. From the material collected, 97 new botanic species and 2 new botanic genera were also discovered, and the research continues. These findings demonstrate the richness of the biome and demonstrate the necessity of protecting this extraordinary biodiversity.

The actions carried out by the company show that the private sector can act as a protagonist and partner in protecting natural areas and conserving in situ biodiversity. For Vale, this is part of its corporate social responsibility program, also aimed at securing its license to operate.

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VEOLIA ENVIRONNEMENT

Preserving water quality in a sustainable manner

Veolia Environment Picture Library – Rodolphe Escher

The business case

Veolia Water, whose mandate is to deliver high quality water to its clients, is actively working with local authorities to protect the site that it depends upon to provide water to the Greater Lyon Urban Community in France. These actions to preserve biodiversity have proved to bring financial benefits to the company, whilst enhancing local biodiversity in the region.

The issue

Veolia Water is a global operator of water services, providing drinking water for the Lyon metropolitan area in France. For its water supply, it relies on the Crépieux-Charmy water withdrawal site, an area where public access is forbidden and all activity strictly controlled.

A protected wellfield to secure water quality

With a surface area of 375 hectares, Crépieux-Charmy is the largest well field in France. This site is unique in terms of its biodiversity, as it includes almost 500 plant species along with a very broad range of fauna (mammals, birds, fish, insects, etc.). Its quality has been recognized through its listing on several scientific inventories (i.e. Natural Zones of Ecological, Flora and Fauna Interest, Sensitive Natural Space, and Remarkable Wetlands and Natura 2000).

Veolia Water is highly dependent on the state of the Crépieux-Charmy water withdrawal site for the availability and quality of the existing water resource. Consequently, the company has implemented management plans aimed to further protect the site.

The response

Maintaining and restoring ecosystems

Since 1996, a team of environmental technicians, working closely with the Greater Lyon Urban Community and the Regional Conservatory of Natural Spaces, has been in charge of monitoring the ecological heritage (environment, flora and fauna). The team maintains and restores the wellfield and performs other activities to meet the targets of its management plan:

- Keeping fauna and flora inventories;
- Installing/restoring and maintaining important habitats for the fauna and flora (alluvial forests, dry grasslands and wetlands);
- Additionally, the team leader participates in numerous awareness and communication campaigns.

Veolia Water tracks all of these developments very closely in liaison with the municipality and its partners (i.e. nature lovers, bird watchers and forest guards).

The results

Positive impacts on biodiversity compatible with savings

Since its inception, this project has helped to protect the site's biodiversity and led to the return of species that had previously disappeared from the site.

From a business perspective, the ecological management of the site has allowed Veolia Water not only to preserve water resource quality, but also to spend less money on site management and use the money saved for other purposes such as technical improvements of its facilities.

Veolia Environment Picture Library – Rodolphe Escher

FURTHER INFORMATION
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VERACEL

Conserving the Atlantic rainforest in Brazil

The business case

Protecting the native forests in Brazil supports Veracel's long term business perspectives as it enhances the ecosystem services that its operations depend on in the long term. Veracel has therefore engaged in native forest restoration activities in parallel with its usual forestry activities.

The issue

A direct dependency on ecosystems

Veracel, a joint venture between Stora Enso and Fibria, is a pulp mill and tree plantation company in southern Bahia, Brazil. The company depends on the environment and the ecosystem services it provides, such as clean water and soil nutrition, to sustain its business in the long term. It is therefore critical for Veracel to protect the environment in and around the tree plantation, in order to guarantee its future operations.

The response

The right balance between eucalyptus planting and native rainforest restoration

Veracel has adopted a land use model based on a mosaic landscape approach that combines both growing eucalyptus for industrial use and conserving and restoring the native Atlantic rainforest. Veracel plants eucalyptus mainly in plateaus, leaving valleys, riversides, steep slopes, and other areas with special characteristics reserved for environmental preservation. This results in a land use pattern where eucalyptus covers less than half of the total area, while the non-planted areas of the Atlantic rainforest are destined for conservation and regeneration.

The area reserved for the Atlantic rainforest is mainly allowed to regenerate naturally, but the most degraded areas are restored through active planting of native tree species. Veracel also works to protect existing remnants of the natural forest and aims to connect those remaining patches through forest corridors.

The results

Every year, Veracel replants some 400 hectares of Atlantic rainforest. By the end of 2009, Veracel had altogether restored over 3500 hectares.

These reforestation efforts, together with the protection of large areas, are critical for Veracel to ensure its business license to operate and also to secure its future operation through maintenance of the native forest ecosystem services that are key to providing good growing conditions for its eucalyptus plantation.

Further information on Stora Enso's actions can be found on the following website: www.storaenso.com/globalresponsibility/

FURTHER INFORMATION
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Replenishing groundwater through reforestation in Mexico

The business case

Operating in a region in Mexico with high water scarcity risk, Volkswagen decided in 2008 to engage in a multi-stakeholder reforestation program in the region surrounding its factories to allow the ecosystem's water provisioning function to be restored.

The issue

Reliable water supply, a crucial condition for industry operations

Car manufacturer Volkswagen operates a factory in the Puebla Tlaxcala valley in Mexico, a region where the water-supply situation is particularly critical. Although the waste water Volkswagen produces is treated and recycled, it has been obvious for years that there would not be enough fresh water for the growing city of Puebla and the industrial area nearby. In this context, securing a reliable water supply was critical for Volkswagen to ensure the stability of its production.

The response

Restoring the environment to secure water replenishment

The company decided to join forces with specialists from the *Comision Nacional de Areas Naturales Protegidas* and the Free University of Mexico City to comprehensively examine the groundwater situation in the region. The analysis found that groundwater replenishment in the valley was contingent to a substantial degree on the functionality of the ecosystems on the volcanic slopes of Popocatépetl and Iztaccíhuatl. It was important, therefore, to re-plant the deforested slopes between the two volcanoes in the source region of the Rio Atoyac. In 2008 and 2009, 300,000 Hartweg's Pines (a native Mexican tree) were planted at an altitude of up to 4,000 meters. To help this process along, a rain water infiltration project was carried out in 2008 and 2009. Some 21,000 pits were dug out on the slopes and about 100 larger earth-banks were erected throughout this terrain to help retain the rainwater and facilitate water infiltration into the deeper soil layers.

Volkswagen de México earmarked $430,000 of funding for the project for the first two years and will subsequently lend its further support to maintaining and managing the re-cultivated forest expanse.

The results

Successful results on water availability and a secured license to operate

These measures will enable more than 1,300,000 additional cubic meters of water per annum to be fed into the ground reserves in the source region. That is significantly more groundwater than *Volkswagen de México* itself consumes every year. Over the long term, the additional biomass now will also help to sequester CO_2 and to improve living conditions for the native fauna.

This additional water supply will support Volkswagen's long term operations in the region. From a broader perspective, this project will also help to prevent water rationing, rising water prices and unrest in the local population, therefore guaranteeing the license to operate for Volkswagen in Mexico.

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Weyerhaeuser

Mitigation bank projects on Southern Timberlands

The business case

New market mechanisms which aim to compensate unavoidable loss in biodiversity are currently being developed, and some are already up and running. Mitigation banking is a new way to foster biodiversity conservation initiatives in very large land areas, and represent business opportunities for companies such as Weyerhaeuser, that owns lands as part of their business activities.

The issue

A new revenue stream

Weyerhaeuser is a forest products company with business segments including timberlands, wood products and cellulose fibers, also managing commercial forestland worldwide.

Owning wide areas of timberlands, Weyerhaeuser has identified new revenue streams in biodiversity linked with emerging markets such as mitigation banking. The company's objectives are to:

- Achieve an economic return on company-owned assets;
- Create offsets to compensate for unavoidable loss of wetlands; and
- Manage ecosystem health and provide ecosystem services to society.

The response

Banking projects, an emerging market mechanism for offsetting

A mitigation bank is a project to restore, create, enhance, or preserve a wetland, water body, or wildlife habitat, undertaken to compensate for unavoidable losses. They are most commonly set up for the purpose of providing compensatory mitigation in advance of impacts authorized by law. Because the markets for mitigation banks are created by public policy enacted into a regulatory requirement, they are often referred to as "policy – enabled markets". The most developed mitigation banks in the U.S. are for wetlands. Here, wetland credit is the standard unit of measurement and is the "currency" that defines the unit of compensation for units of wetland loss.

A number of mitigation methods are used for credit creation: enhancement, establishment, preservation and restoration. These methods can be compensatory, whereby the permittee compensates for its own impact either on-site or off-site, or with an in-lieu fee, whereby the permittee pays a fee for mitigation carried out by someone else, usually off-site. A general framework defined by the U.S. Army Corps of Engineers for wetland mitigation banking includes defining and determining of wetland credits, assessing wetland value, determining the bank location, providing financial assurance, maintaining performance standards, and providing long-term management, monitoring, protection and remediation.

The results

Weyerhaeuser currently has proposed 11 mitigation banking projects in the U.S. In terms of the US market, there were 431 active banks, 182 banks pending approval, and 88 banks that were sold out in 2009. The wetland credit pricing ranged from $3000 to $653,000 per credit.

These figures show that this market is now becoming substantial, which implies new business opportunities, as well as opening up new perspectives for biodiversity conservation.

References

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Example of a mitigation bank project on Weyerhaeuser Southern Timberlands

Weyerhaeuser has signed an agreement to conduct wetlands mitigation for a large project located in St. Tammany Parish, Louisiana U.S. The project covers an area of 130 ha and consists of the restoration of a site to longleaf pine savannah ecosystem. Restoration was started in 2008 and will end in 2023. The credits were calculated through a model that determines the degree of ecological rehabilitation of the project. The Nature Conservancy will be the holder of the conservation servitude agreement.

FURTHER INFORMATION

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Appendix

Industry	Company	Project Name	Country	CBD Objective	Page N.
Mining and Metals	**ArcelorMittal**	Sustaining our Great Lakes	US		6
Mining and Metals	**ArcelorMittal**	Conserving indigenous forests in Liberia	Liberia		7
Agriculture & Chemicals	**BASF SE**	Protecting and preserving ecosystems through respectful agricultural practices	UK, Brazil, France		8
Consultancy	**CDC Biodiversité (EpE Member)**	Testing the first habitat banking project in Europe	France		10
Cement	**CEMEX**	Conserving a unique transboundary ecosystem	Mexico		11
Engineering	**Cook Composites and Polymers (US BCSD Member)**	Creating business value through ecological stormwater management	US		13
Chemicals	**The Dow Chemical Company**	Utilizating household wastewater in the large-scale	The Netherlands		14
Agriculture & Chemicals	**Dupont (Pioneer Hi-Bred)**	Planting trees in the Philippines to preserve biodiversity	Philippines		15
Utilities and Power	**Energias de Portugal**	Implementing "zero impact" invoices	Portugal		16
Forest & Paper Products	**Fibria**	Setting private natural heritage reserves	Brazil		17
Water Services & Waste Management	**GDF Suez (Sita France)**	Partnering for biodiversity conservation on landfill sites	France		18
Cement	**Holcim Spain**	Creating an oasis of biodiversity	Spain		20
Cement	**Lafarge**	Building local plant nurseries for the rehabilitation of quarries	Uganda/ Philippines		21
Tire	**Michelin**	Protecting ecosystems and producing rubber in a sustainable way	Brazil		22

CBD OBJECTIVES	RELEVANCE	
	++	+
The sustainable use of the components of biological diversity		
The conservation of biological diversity		
The fair and equitable sharing of the benefits arising out of the utilization of genetic resources		

Industry	Company	Project Name	Country	CBD Objective	Page N.
Forest & Paper Products	**Mondi**	Restoring wetlands to secure water supply	South Africa		23
Cosmetics	**Natura**	Sharing the benefits arising from the use of biodiversity in cosmetics	Brazil		24
Maritime	**Panama Canal Authority**	Using market mechanisms to protect biodiversity at the Panama Canal basin	Panama		26
Consumer Goods	**PepsiCo**	Growing a staple food with less water & fewer GHG emissions in India	India		28
Forest & Paper Products	**Portucel Soporcel Group**	Integrating biodiversity conservation in the forest management model	Worldwide		29
Hotel & Tourism	**Sol Meliá Group (Fundacion Entorno Member)**	Protecting local species for impact mitigation and creation of new business opportunities	Mexico		30
Insurance and Finance	**Sompo Japan**	Utilizing financing mechanisms to protect Japanese *satoyama* biodiversity	Japan		31
Oil & Gas	**Suncor Energy Inc.**	Reclamation progress at oil sands	Canada		32
Utilities and Power	**TEPCO**	Protecting a national park for half a century	Japan		33
Forest & Paper Products	**Vale**	Conserving biodiversity in the Atlantic forest of Brazil	Brazil		34
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Forest & Paper Products	**Veracel (Stora Enso)**	Conserving the Atlantic rainforest in Brazil	Brazil		36
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Notes

About the World Business Council for Sustainable Development (WBCSD)

The WBCSD is a CEO-led, global coalition of some 200 companies advocating for progress on sustainable development. Its mission is to be a catalyst for innovation and sustainable growth in a world where resources are increasingly limited. The Council provides a platform for companies to share experiences and best practices on sustainable development issues and advocate for their implementation, working with governments, non-governmental and intergovernmental organizations. The membership has annual revenues of USD 7 trillion, spans more than 35 countries and represents 20 major industrial sectors. The Council also benefits from a network of 60 national and regional business councils and partner organizations, a majority of which are based in developing countries.

www.wbcsd.org

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