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## Global business practices for mainstreaming biodiversity

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### ABSTRACT

The progressive loss of biodiversity, caused by human actions, will have devastating consequences unless measures are urgently taken. The conservation and sustainable use of biodiversity needs to and is increasingly becoming an essential component of corporate responsibility strategies. Many countries, as well as the UN Convention on Biological Diversity, have initiated opportunity for business and biodiversity partnerships to collaborate on conservation activity. This paper introduces eight stories of such collaboration.

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Biodiversity; business; conservation; partnerships; international collaboration; sustainability

### Introduction

The progressive loss of biodiversity, caused by human actions, will have devastating consequences unless measures are urgently taken. The conservation and sustainable use of biodiversity needs to and is increasingly becoming an essential component of corporate responsibility strategies.

All economies are dependent on the availability and productivity of natural resources. Increasing scrutiny from investors, consumers and other stakeholders, are motivating business to adopt sustainability strategies and to disclose their performance on environmental and social aspects. This often involves non-business partnerships, codes of practice, changing land-use practices and other significant new steps in corporate operations and activities, including supply and distribution chains.

There are now many business success stories of biodiversity conservation and many lessons have been learned about how to do it well. The following are a few brief examples of such stories from contributors in many corners of the world.

### Partnerships

One method of garnering stakeholder interest and support is through the formation of partnerships. Partnerships can be with a single agency or multi-layered and for a specific issue or more complex. For

example, a business may enter into a partnership with an environmental non-governmental organisation to address a specific biodiversity issue on their property or a multi-agency partnership to address a series of issues on or off their properties. These partnerships can provide access to expertise the business may not have, additional funding for the project or they could influence activities on adjacent lands that could prove beneficial not only for biodiversity, but for the business. The synergy created through partnerships may make it possible to achieve greater and longer lasting conservation advances as well as to promote and improve brand image and business profile.

### *The global partnership for business and biodiversity (CBD Secretariat)*

Supported by the Secretariat of the Convention on Biological Diversity (CBD), the Global Partnership for Business and Biodiversity (Global Partnership) is a unique platform for 21 regional and national business and biodiversity initiatives to share knowledge, good practice and information. It is essentially a network of networks with the common aim to engage business on biodiversity related issues and to contribute towards the mainstreaming of biodiversity into businesses.

Since the CBD came into force in 1993, there has been increasing awareness of the critical role that businesses must play in curbing biodiversity loss and

disruption of ecosystem services. The business community was first identified as an important stakeholder at the third meeting of the Conference of the Parties (COP 3) in 1996 and the first decisions directly aimed at business appeared at COP 8 in 2006. This continued through all subsequent COP meetings.

The idea for a global business and biodiversity partnership was first presented in 2009 at the Jakarta 'Business and the 2010 Challenge' meeting. This led to the decision at COP 10 in 2010 to establish national and regional business and biodiversity initiatives.

The notion behind the Global Partnership was that it would support efforts to achieve the aims of the convention by involving business. An initial meeting was held in Japan in 2011 where the initiatives were introduced.

The overall mandate of the national and regional initiatives is to encourage dialogue amongst stakeholders and to help raise awareness of biodiversity and sustainability issues throughout the business community. They also work to assist companies in understanding and mainstreaming the goals of the Convention and the Strategic Plan for Biodiversity (including the 20 Aichi Targets). The objective of these efforts is to have a significant number of companies that will be on a sustainable ecological footing with a vastly reduced negative impact upon biodiversity (or even a net-positive impact) and that they will also act as a positive influence upon other entities throughout the economy.

The Global Partnership, as the umbrella platform, is an opportunity for the regional and national initiatives to come together, share information and collaborate on research, events and tools. It is a facilitator of dialogue and cooperation amongst all groups ensuring collective efforts are as complementary and efficient as possible. The Global Partnership has continued to grow throughout the years and now has a total of 21 members spanning Africa, the Americas, Asia, Australasia and Europe.

Meetings of the Global Partnership take place on an annual basis providing a forum for the increasing number of initiatives to meet and share knowledge and experiences. The Global Partnership also plays a crucial role in contributing to the agenda and discussions at the biennial Business Forums, events set up to allow business, government, non-governmental organisations (NGOs) and academia the opportunity to discuss issues and concerns regarding the sustainable use and conservation of biodiversity and share best practices. These Forums are held in conjunction with the Global Partnership meetings and as a side event to COP.

The Global Partnership is also involved in several COP-mandated projects, including reporting on and making the business case for the Aichi Biodiversity

Targets. It is an effective way to share knowledge resources and to be part of a greater collaboration to ensure businesses are involved and adopting biodiversity conservation-related actions.

### *Biodiversity conservation with business participation (Mesoamerica)*

Public-private partnerships including local community involvement provide a setting which facilitates access to funding, motivates participants to deliver tangible results, leverages a range of resources and skills, has significant multiplication effects in terms of participation, attitudes and communication, and probably delivers sustained results more effectively than single-actor efforts.

In late 2008, the multinational company Chiquita Brands partnered with German retailer REWE in an effort to restore biodiversity on degraded pasture land located within a protected wetland area in Panama. In 2009, GIZ, the German government development corporation, and CORBANA, the Costa Rican federation of banana growers, agreed to join the partnership. As a result, the project became a cross-border initiative involving activities in Costa Rica and Panama, with committed funding of US\$1.5 million.

During 2009–2015, 130 ha of degraded pasture land were purchased and donated for biodiversity restoration purposes to AAMVECONA, an environmental and ecotourism community organisation located in the San San-Pond Sak Wetland, a Panamanian RAMSAR reserve in the Province of Bocas del Toro. AAMVECONA committed to restore the land to a forested state within 8 years and transfer the land back to the Panamanian government. A neighbour and AAMVECONA member contributed a further 30 ha.

With the approval of the authorities, early in the project, cattle were removed from the land and the accessible part of the land reforested with mixed native species. The balance of the property was left to regenerate naturally. Independent studies have demonstrated a sharp increase in biodiversity in both the reforested and naturally regenerated areas.

Endangered species, manatees and leatherback turtles, were a major focus in the project. Around 50,000 leatherback hatchlings from local hatcheries were released. Environmental education in cooperation with the education ministry and local NGOs was also a key component. Activities included training for employees in local companies, school programs, radio broadcasts in both Spanish and the indigenous language, as well as volunteer work by employees of local companies and international students. Leadership of the project was

provided by professionals following best business practice.

Reports and updates were provided to all interested parties at quarterly intervals and included financial details, information on progress, obstacles and problems. Senior managers of participating businesses took a personal interest in ensuring an effective effort. REWE raised funds by in-store promotions and provided information on the project to their 300,000 employees.

As agreed in the project charter, the NGO Biodiversity Partnership Mesoamerica was founded in 2012 to encourage the development of similar biodiversity partnerships in Central America and the Dominican Republic. The Biodiversity Partnership Mesoamerica now has 22 members. GIZ established a resident team to support this initiative and has since developed numerous public-private biodiversity partnerships.

In 2018, the reforested land was transferred to the government, the first such transaction in Panama. Partners are now discussing how to continue and deepen the effort, integrating the lessons learned from this experience.

Key lessons learned from the project:

- The participation of government authorities can have a very significant enabling and motivating effect.
- In time-bound projects participants need to dedicate time and effort to ensuring the survival and continuity of project work.
- Involving the local community and changing attitudes is key, far more important than the physical transformations.

## Reporting

As recognition of the risk and opportunity presented by biodiversity to business grows so too does the expectation from company shareholders and other stakeholders that corporate annual reports include information on biodiversity plans and achievements. It is also important to share knowledge of decisions, plans and results among the business employees, including those not directly involved in the conservation-related activity. This will help enable the full management team to contribute to conservation decisions with a motivated and knowledgeable sense of ownership.

Environmental and conservation organisations should also be communicating some of the positive outcomes of such business programs publically, whether or not they have an involvement with the business. To help accelerate the evolution of knowledge and facilitate sector-wide implementation in a collegial manner, businesses need to share toolkits,

methodologies and best practices within their sector as well as make the information available to other sectors.

## Biodiversity Disclosure Project (South Africa)

Businesses depend on biodiversity and the ecosystem services it provides in order to respond to the needs of their clients. However, business activities are also the primary drivers of biodiversity loss worldwide. This presents a material risk to companies, which, if not addressed, could ultimately threaten their viability. Currently, there is a lack of awareness, capacity and tools to support business with the integration of biodiversity into their strategies and activities. Standardised, comparable and useable information on corporate biodiversity impacts and risks is also lacking, undermining the ability of decision makers to drive meaningful change. By measuring their biodiversity impacts and valuing the associated risks to their business, companies would be positioning themselves to manage these risks more effectively. By displaying transparency on their biodiversity performance, companies would provide stakeholders with the evidence needed to make informed decisions.

In 2013 a South African conservation NGO, the Endangered Wildlife Trust (EWT), launched the National Biodiversity and Business Network (NBBN) in partnership with the South African government and six corporations. The network aims to facilitate the mainstreaming of biodiversity into business in South Africa. Managed by the EWT, the activities of the network to date have focussed predominantly on information sharing, awareness raising and working with individual companies to further the integration of biodiversity into their activities as strategies to achieve its goal.

The NBBN is now working towards the development of a biodiversity mainstreaming tool referred to as the Biodiversity Disclosure Project (BDP). The BDP is a voluntary mechanism that will provide companies with a practical avenue through which to disclose their biodiversity impacts, risks and performance on an annual basis. Initially targeting South African companies, the BDP will enable businesses to disclose their biodiversity performance in a standardised and comparable manner. The methodology will be comprised of the following:

- A BDP platform, which will provide companies with a practical avenue through which to voluntarily disclose their biodiversity impacts, risks and performance on an annual basis.
- A biodiversity measurement protocol (BMP), which will provide guidance on how to measure

and monitor losses/gains in biodiversity values over time.

- An online mainstreaming biodiversity into business toolkit, which will build the capacity of businesses to better recognise, measure, value, and responsively manage their direct and indirect dependencies and impacts on biodiversity. The toolkit will include biodiversity mainstreaming guidelines, South African biodiversity mainstreaming case studies and a biodiversity mainstreaming readiness self-assessment tool.

The BDP will act as a catalyst for change, compelling companies to disclose their biodiversity performance to drive meaningful action by and for themselves. This will enable benchmarking with peers across and within industries, pushing for continuous improvement to minimise risks, reduce costs and seize new opportunities. Information produced by the BDP would provide stakeholders with the evidence needed to make informed decisions. These stakeholders may include shareholders, investors, non-governmental organisations and policy makers, amongst others.

Having commenced with development of the BDP in 2018 the NBBN will be rolling out the project over the next three years.

### **Agriculture/agri-food**

Agricultural biodiversity includes the diversity of species, natural and human created, that are essential for food, and the production of raw materials for goods such as cotton and medicines. Just as important as food, agricultural biodiversity also provides ecosystem services and is dependent on services such as soil and water conservation, soil fertility and pollination. Agriculture activities can contribute significantly to conservation and sustainable use of biodiversity, but they are also a major driver of biodiversity loss. With increasing demands on food production, coupled with issues such as climate change, we need to meet a balance between food production and the sustained delivery of other ecosystem services.

### **Pollinator strategy: bed & breakfast for bees (Netherlands)**

Pollination is necessary for more than 75% of our food crops and for more than 85% of wild plants in the natural environment. Without pollinators, crop yields fall, and the quality of the food product is unsatisfactory. For example, pollinating insects are jointly responsible for between 18% and 68% of apple, pear,

strawberry and blueberry yields. Bees account for the lion's share of all insect pollination.

In the Netherlands, more than 40 public and private partners (with agricultural, conservation, academic and policy backgrounds) have agreed to work together to ensure the long-term conservation of bees and other pollinators. Their aim is to increase the number of bee species showing a stable or positive population trend with 2023 and 2030 being benchmark points in time which will be used to determine whether the objectives have been achieved. An additional aim is to bring about an increase in the distribution of bees throughout the Netherlands.

Bees require two things for survival: nesting sites and an adequate food supply; in other words, a *bed & breakfast for bees*. Three key themes have been established by the partnership to ensure the objectives of the strategy are achieved:

- promoting biodiversity,
- improving agriculture-nature interaction, and
- helping beekeepers to improve the health of the honeybee.

It is important for biodiversity that the habitat of wild and other bees is enhanced in the countryside as well as in towns and cities. Managers of sites, infrastructure and public green spaces will be provided with the tools necessary to achieve the goals of the initiative. It is important that public spaces are designed and managed in such a way as to give herbs and flowers full potential to grow and flourish, and that nesting sites are provided.

Through the integration of nature and agriculture, habitat for bees in all parts of the agricultural environment, such as fields, farmyards, contiguous nature areas and public space will be enhanced. For this reason, the pollinator strategy is focussed among other things on agriculture that is more nature-based, as well as on providing guidelines to farmers and horticulturists on establishing a pollinator-friendly operational management.

To achieve these ambitions, the partners in the 'bed & breakfast' strategy agreed to:

- Expand and disseminate scientific and applicable knowledge. Consumers will be provided with information about the importance of a healthy bee population and how they can contribute to that situation.
- Develop and apply pollinator-friendly greening measures and agricultural nature conservation in the context of the new European Common Agricultural Policy (CAP) post-2020.
- Create a network of like-minded countries, the Coalition of the Willing on Pollinators, with the

objective to sharing ideas and knowledge, and learning from each other. Twenty-one countries, including some which are far beyond Europe's borders, have already joined the coalition.

In the years running up to 2023, meetings on the 'Current Situation of the NL Pollinator Strategy' will be held at least once a year to discuss progress and exchange experiences. With this active approach, we will keep one another informed of activities and together monitor the strategy's progress as well as its implementation to ensure that we remain on course for 2023 and 2030.

### **Opportunities in ecosystem service management (India)**

The India Business & Biodiversity Initiative (IBBI) was created upon invitation from the Ministry of Environment, Forest and Climate Change (MOEFCC) and hosted by the Confederation of Indian Industry (CII). IBBI is a business-led initiative that aims to serve as a national platform for business, to promote sharing and learning, and to facilitate mainstreaming sustainable management of biodiversity by business.

Biodiversity and agriculture are strongly interlinked with biodiversity being the basis of agriculture. It provides a wide range of plants and animals and the immense variety within each crop and livestock species. Countless other species contribute to the essential ecological functions upon which agriculture depends, including nutrient cycling, soil formation, pollination, pest control, and water cycling. Agriculture can also adversely impact biodiversity through actions such as land use change, use of chemical fertilisers and pesticides and overloading of nutrients to rivers and ponds. In India agriculture has emerged as the fastest growing economic sector since independence, contributing up to 17% of India's GDP in 2016–2017 and approximately 58% of the national workforce.

India is the world's second largest producer of sugar. The production of sugar cane requires huge amounts of water. To manage this impact, DSCL Sugar, a subsidiary of DCM SHRIRAM, partnered with Solidaridad, an international development organisation, and International Finance Corporation to launch the 'Mitha Sona' project in Uttar Pradesh. The project focusses on enhancing productivity in sugarcane cultivation by improving soil health and creating a sustainable ecosystem. Farmers will be trained on good agricultural practices and the project is expected to benefit 125,000 farmers, including women farmers.

In 2017 DSCL Sugar undertook a biodiversity risk assessment study to better understand biodiversity relevance to agriculture production. They initiated a

biodiversity and ecosystem services mapping for their factory as well as their supply chain, sugar cane producers. The ecosystem service matrix (ESM) tool was used to map the risk areas related to various ecosystems and ecosystem services on which agriculture production is dependent or impacting. The ESM is based on ISO 31,000:2009, Risk management-principles and guidelines were developed in-house under the CII-India Business and Biodiversity Initiative (IBBI).

ESM tool methodology:

- Identification of ecosystem and ecosystem services available surrounding the company.
- Identification of dependencies and impacts of the company on Ecosystem and Ecosystem services.
- Mapping existing companies' management measures to reduce impacts and dependencies.

Risk areas identified through ESM tool:

- Ponds in the surrounding villages are identified as a critical ecosystem, providing habitat to Sarus Crane (*Antigone antigone*), which is categorised as Vulnerable by the IUCN Red List, and other migratory birds.
- Dependency – flood control and ground water recharge are the important ecological services for agriculture production.
- Impacts – nutrient overload caused by mixing of chemical fertiliser and pesticides in the ponds leads to degradation of ponds and growth of invasive species.

Present management measures:

- Through the Mitha Sona project, the company is working with farmers for water conservation, use of bio fertiliser and pesticides, mulching of soil with sugar cane leaf, etc.

Action plan for risk mitigation:

- Restoration of village ponds with support of locals.
- Plantation of native trees around the ponds to provide nesting habitat for birds.
- Inclusion of biodiversity aspects in Mitha Sona project.

Opportunities:

- Reduced flood risk and increase water availability.
- Conservation of bird habitat and ecosystem.

- Reduced cost of irrigation for farmers with increasing agriculture production.

Focussing on biodiversity and ecosystem services in the supply chain will minimise the negative impacts on agriculture practices on native biodiversity.

### **Tourism/hospitality**

Tourism is one of the world's fastest growing industries. It is a source of employment for many developing countries, and it is increasingly focussing on natural environments. Tourism has the potential to contribute in a positive manner to socio-economic achievements but, at the same time, its fast and sometimes uncontrolled growth can be the major cause of degradation of the environment and loss of local identity and traditional cultures. Biological and physical resources are in fact the assets that attract tourists. However, the stress imposed by tourism activities on fragile ecosystems accelerates and aggravates their depletion. The very success of tourism may lead to the degradation of the natural environment: by depleting natural resources tourism reduces the site attractiveness to tourists, the very commodity that tourism has to offer.

### **Sustainable tourism development in a UNESCO site (Peru)**

Since its establishment in 1975, Inkaterra, a Peruvian ecotourism company, has pioneered ecotourism and sustainable development in Peru. Aiming to underscore the value of biodiversity, it uses a holistic approach, performing scientific research as a basis for biodiversity conservation, education and the wellbeing of local communities in the Amazon rainforest of Madre de Dios, the Machu Picchu cloud forest, the Sacred Valley of the Incas, the city of Cusco, and the Cabo Blanco ocean, desert and tropical dry forest (in development).

In 1976, Inkaterra started negotiations to acquire a 10 ha area in Machu Picchu Pueblo facing Vilcanota River, between the Alccamayo and Aguas Calientes Rivers. The land was originally used as a site for a sawmill, pasture to raise cattle and a tea plantation (for organic tea production using millenary techniques). By observing what birds fed on, programs to restore native flora and natural pollination were carried out. The area would become Inkaterra Machu Picchu Pueblo Hotel. Opened in 1991, the hotel is home to conservation projects focussed on bird diversity, native orchid species, and a rescue centre for Andean bears, the only bear species native to South America. The

property is nowadays considered one of the most biodiversity-rich environments within city limits.

Biodiversity inventories have been performed by Inkaterra since 1978. These inventories were used to establish a benchmark to compare its own impact over natural areas, while being the first step to determine goals for restoration and conservation of a natural environment. To this date, 214 bird species, 111 butterfly species, 372 native orchid species and 98 fern species have been registered within Inkaterra Machu Picchu Pueblo Hotel. Twenty orchids, two bromeliads and one butterfly have been described as new to science.

Inkaterra focusses on education to raise awareness among local communities on the value of biodiversity and the sustainable use of natural resources. Additionally, career opportunities on ecotourism and hospitality are a means to preserve local culture, as 85% of the hotel's staff are native to local areas.

Through a public-private alliance with the Machu Picchu Town Hall and Peruvian beverage multinational AJE Group, Inkaterra is now turning Peru's iconic site into a global sustainability model. After UNESCO sought to include Machu Picchu in their list of Patrimonies at Risk due to a waste management crisis, the partnership donated a compacting machine to process 14 tons of plastic waste on a daily basis that is shipped to be recycled into other products.

The alliance has recently opened Machu Picchu Pueblo's first biodiesel production plant, located in hotel grounds. The initiative ensures a healthier environment, as each month Inkaterra – with the Town Hall's support – collects 600 gallons of waste oil from local restaurants, hotels and houses, avoiding 2000 litres of waste cooking oil being spilled to the Vilcanota River on a monthly basis. According to studies, one litre of oil pollutes around 1000 litres of water. Biodiesel reduces carbon emissions up to 44% in comparison to other fuels, whilst also producing petrochemical-free glycerine destined to clean the streets of Machu Picchu Pueblo.

The next step, in partnership with Vasco Masías (Alimenta Group), is to establish a pyrolysis plant that decomposes organic waste to produce Bio-char. Bio-char will be used as a nutrient-rich soil amendment that reduces fertiliser requirements.

### **More taste, less waste: combating food waste in the hospitality industry (Sri Lanka)**

With over 2 million foreign tourist arrivals each year, and a good proportion of the local population being keen travellers, the Tourism industry in Sri Lanka is booming. New and expanded services such as

restaurants, cafes and transport are being developed by government and the private sector.

Food is a basic necessity for travellers. Its sustainable and efficient production, preparation, consumption and disposal, has a large bearing on the industry's overall sustainability and long-term gains. However, it has been identified that across the world, about 40% of food that is produced, is wasted. This is compounding the already serious threat of food insecurity that is a growing concern for many developing countries of the world.

Wastage of food and dumping of excessive amounts of underutilised food produce in landfills is not only a cause of food insecurity. It creates negative impacts on biodiversity in terms of land use challenges and potential human-wildlife conflicts. More efficient and effective handling can also provide greater returns for businesses, in terms of revenue and positive recognition.

To begin to address this issue, Biodiversity Sri Lanka (BSL), in partnership with its members representing the sector, organised an awareness programme on minimising food waste in the hospitality industry. This initiative, envisioned by BSL's Tourism and Hospitality Sectoral Standing Committee, was conducted with generous inputs and expert contributions from the private sector and civil society organisations such as the Robinhood Army, a global volunteer-based organisation that works to get surplus food from restaurants to the less fortunate sections of society.

The programme provided global as well as local perspectives of the problem and presented best practices and solutions to overcome challenges faced within the industry, at macro and micro levels. It stressed the urgency and importance of collaboration to bring forth long lasting sustainable solutions to the problem of food waste. The promotion of linkages between the agriculture and hospitality sectors for innovative solutions on food waste minimisation was highlighted. Noting that most of the food wastage occurs in high income areas, the main reasons were identified as the lack of technology, skill, efficiency and storage facilities. The formation of a task force from within the hospitality industry was proposed to address issues in an organised manner.

Practical steps which can be taken to reduce food waste in hotels discussed during the programme included ensuring that purchase specifications are closely linked to the end product, proper forecasting, practising the first in first out (FIFO) policy, being aware of budgets and yields, promoting live stations at buffets, having skilled 'Buffet Ambassadors' and opting for interactive kitchens and food courts.

The following outcomes were highlighted as actions to be addressed by key stakeholders of the industry:

- A prioritised study on the economics of various waste management options needs to be undertaken.
- More dialogue on sustainable packaging options is to be promoted.
- The Robinhood Army's services, supporting food waste minimisation, need to be popularised more.
- Organisations that currently employ less eco-friendly methods of food waste management need to be lobbied for policy revisions.
- The establishment of small-scale biogas units in urban and other hotels is to be explored further.
- A guidebook detailing micro and macro-level strategies to minimise waste in hotel kitchens and restaurants in alignment with global standards and local applicability, needs to be developed.
- A dialogue on potential solutions to overproduction and post-harvest food waste management needs to be promoted among relevant stakeholders.
- Best practices already being implemented by hotels, need to be further encouraged and promoted for replication.

Positive feedback has been received on the value of the programme at a time when Sri Lanka is at crossroads in balancing efficient waste management and increased consumer demands.

## Assessment

The status and trends of biodiversity and the ecological services that may influence or be influenced by a business operation needs to be assessed. The business needs to have knowledge of the species that they are dealing with and if they are in abundance, in decline or endangered. The potential influence business operations may have on the production and supply of ecological services also needs to be identified. As part of this analysis, a business needs to look at its dependence on biodiversity and the ecological services it provides. The unsustainable uses of a resource or activities that degrade ecological services can also have a negative impact on the wellbeing of human communities.

## A business and biodiversity scorecard (Canada)

An ecological scorecard and condition report are an easy yet powerful way for business managers to access and share evidence-based ecological information on specific species (flora and fauna) as well as ecosystem

services on their properties or areas they may have an impact on. It can look at habitats and the interaction of habitats with species or the business activities. It can focus on key species, species at risk or alien species. The scorecard can provide a standard method for businesses to report on the status and trends of biodiversity on their holdings or in areas that may be impacted by their operation.

The scorecard's indicators can be combined and summarised to meet a particular need. Within a business operation, it can provide valuable information and guidance on where and how a company needs to improve on its performance or where to focus its time to be more effective, including financially, in its biodiversity conservation actions.

Scorecards do not replace monitoring programs but can be very useful in establishing baselines for monitoring programs and assessing the effectiveness of monitoring programs. They can serve as a tool to identify gaps in knowledge, to bridge gaps between technical/scientific communities and the public-at-large, and to allow comparisons across a broad region. Scorecards can provide an overall index of natural health and a snapshot in time that provides a baseline to chart trends.

A scorecard lays the groundwork for a comprehensive, science-based assessment and its findings dependent on:

- state-of-the-science techniques,
- indicators that are selective enough to provide precision, but broad enough to identify ecosystem relationships,
- having input and involvement from the scientific community, government, academia, citizen science, local community and business, and
- knowledge of natural features and systems, the effects of human actions and the dependencies of humans on the natural resources in question.

The Canadian Business and Biodiversity Council (CBBBC) Biodiversity Scorecard was modelled off the 'Guide to Ecological Scorecards for Marine Protected Areas in North America' developed by the Commission for Environmental Cooperation. The technique is a consensus-building approach that compiles a variety of information provided by experts and stakeholders into one report that can help identify knowledge gaps and serve as an effective communication tool. The

process highlights the need to involve local communities in all phases of the process.

The CBBBC Biodiversity Scorecard process incorporates elements of biodiversity, ecological processes, ecosystem services and human factors as well as climate change. It can be modified to include issues of local importance including gender. The scorecard process assigns a numerical value to indicators in these categories and these values can be selected and analysed in different ways or combined for a big picture assessment. Aggregating these scores can allow comparisons with other ecosystems or over time to provide an important measure of changing conditions.

Business and biodiversity scorecarding is still a relatively new concept but will help to better understand and monitor business impacts. It takes evidence-based information and refines it into concise and easily understood assessments.

## Conclusion

Biodiversity and the ecosystems services it provides are globally in decline. This has not happened overnight. Threats range from habitat destruction and unsustainable use to climate change. There is no single cause for its decline and this decline cannot be stopped and reversed by any single organisation, whether it be government or other. However, some businesses practices have had and are having negative impacts on biodiversity and ecosystem services. As a growing number of businesses now recognise, business needs to take the initial steps towards ecological sustainability and assess its relationship with biodiversity and act to address related risks and opportunities. This can best be accomplished through comprehensive partnerships with all stakeholders. By identifying and minimising biological risks, a business will be able to capitalise on biodiversity opportunities which will benefit both biodiversity and the economic future of the business.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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