



Making the Business Case for Biodiversity

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The Centre for Social Impact (CSI) is a partnership between the business schools of the University of New South Wales, the University of Melbourne, Swinburne University of Technology and The University of Western Australia. It brings together the committed hearts and business heads of the philanthropic, not-for-profit, private and government sectors in pursuit of social innovation. It provides socially responsible business management education and research in the common cause of building a stronger civil society for Australia.

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Good evening. Thank you very much for inviting me to speak – it's an honour to be speaking at the Qantas Foundation Social Impact Lecture. As you are aware, this event is a joint initiative between the Qantas Foundation and the Centre for Social Impact. The CSI plays a vitally important role in pushing forward the social enterprise agenda. Thank you also to the Qantas Foundation for organising this event and indeed hosting us.

You'll be relieved to hear that I'm not going to spend the next 45 minutes outlining the benefits of supporting Fauna & Flora International. If anything, I want this to be a sales pitch on behalf of wildlife conservation, rather than a plug for FFI.

Having said that, the concept that I want to promote today is central to FFI's conservation strategy.

We firmly believe that our efforts to highlight the *broader* value of biodiversity are vital not only to the future of conservation, but also to the future of the entire planet.

Biodiversity affects every aspect of our lives, political, social and economic.

Before I go on to justify that sweeping statement, I think it's worth taking a moment to explain what we all mean by biodiversity, because it's a dry scientific term that doesn't begin to do justice to the spectacular and virtually infinite life forms that it encapsulates.

In a nutshell; it's the sheer variety of plant and animal life with which we humans share this planet.

It's a rainforest tree dripping with endless varieties of orchid.

It's a floral kingdom at the southernmost tip of South Africa that harbours 6,000 kinds of plant found nowhere else on Earth.

It's the 400 different species of ant found in a single tropical tree.

It's the breathtaking range of marine life found on the Great Barrier Reef.

It's a giant woolly rat bigger than a cat recently discovered in an extinct volcanic crater in Papua New Guinea.

It's the weird and wonderful creatures that have evolved in isolation here in Australia, from the thorny devil to the tree kangaroo.

It's the countless, as yet undiscovered, medicinal plants that are being lost to rampant deforestation before their pharmaceutical value can be verified.

It's the entire alphabet of plants and animals from the aardvark to the zorilla.

It's the quokka, the quetzal and the Queensland quinquere. I made that last one up just to keep you on your toes. I could go on, but you get the picture.

What does all this have to do with us, I hear you mutter. I love a cuddly koala as much as the next man, but what does biodiversity have to do with my bottom line, or, for that matter, with social enterprise and the development agenda?

That's what I hope to demonstrate.

Biodiversity is relevant to all our lives, whoever we are, whatever we do, and wherever we live.

We are currently faced with the alarming prospect that human impact on the planet's biodiversity and ecosystems is beginning to threaten the very future of life on Earth.

In this context, it is a grave mistake to see biodiversity as just another worthy cause peddled by a bunch of well-meaning nature lovers.

I'm here to persuade you that is an essential ingredient of life as we know it on this planet.

It affects the bottom line, commercially speaking, it shapes the political landscape, and it governs the lives of local communities throughout the world.

However, it's fair to say that we have consistently failed to make a strong enough case for the value of biodiversity among key decision makers at policy level.

But how *do* you put a value on biodiversity?

According to a 1998 report by the World Resources Program, one of the first efforts to calculate the global value of Earth's life-support services estimated that they were worth an average of US\$33 trillion per year.

Until recently, the Earth's bounty has appeared limitless, with the result that we have tended to take it for granted and lose sight of its true value. You tend not to appreciate what you have until you are faced with the prospect of having to do without it.

A report presented at the latest UN Convention on Biological Diversity held in Bonn in May 2008 estimated that 11% of the world's terrestrial biodiversity could be lost by 2050, showing us that 60% of our ecosystems are now being degraded or used unsustainably. We are also taking three times more water out of our rivers than we did 50 years ago. The cost implications, in economic terms alone, are enormous.

The writing has been on the wall for some time: spiralling oil prices; global food shortages; collapsing fisheries; stranded polar bears; disappearing amphibians; raging bushfires, flash floods and other so-called natural disasters.

Climate change is forcing us to acknowledge that we have been guilty of abusing the planet's hospitality. There are only so many times that you can dine at someone else's expense. Seriously, how many more free lunches were we expecting? It's payback time. Somebody, somewhere, has to pick up the tab.

We need to make the case for '*Valuing ecosystem goods and services*'.

By 'ecosystem services' we mean the benefits that we derive from the natural world in terms of soil formation, nutrient recycling, water supply, climate regulation, flood and storm protection, food and raw materials, pollination, genetic resources and even recreation.

In other words, everything that supports and drives life on Earth as we know it. Nobody can deny that clean water, breathable air, open spaces, predictable weather patterns, scientific progress and pharmacological advances are 'worth' a great deal.

In a perfect world; of course, everyone would value the natural world for what it is: a stunning array of the beautiful, the bizarre and the breathtaking.

We appreciate spectacular species like the blue whale, birds of paradise, or towering swamp gums, and ecosystems like the Amazon rainforest, Kakadu and the Great Barrier Reef for the sheer thrill, reverence or awe that they inspire.

We also appreciate, and want to conserve, other, less charismatic life forms, recognising that they play an equally important role in the bigger picture.

However, it's easy to see why others might not share this view. Faced with communities, businesses and governments whose respective priorities are basic survival, shareholder value and retention of power, success hinges on our ability to demonstrate, and somehow quantify, the economic, social and political value of conserving ecosystems.

As a starting point, we have to acknowledge a painful, but crucial truth. Biodiversity will not survive unless we can demonstrate that it is worth more alive than dead.

It's not that we are oblivious to biodiversity's economic value, of course, but we have tended to use emotive terms like priceless, invaluable, or irreplaceable to highlight the plight of rainforests, wetlands and iconic species like tigers and gorillas.

It's not that there isn't a price on biodiversity, but often it's the wrong product that is being traded. Timber instead of carbon, for example.

For want of a better word, we need to 'monetarise' these goods and services - in other words, assign an economic value to things like pollination, standing forests and water supplies. If we can't they become, to all intents and purposes, worthless.

The process may be difficult, controversial even, but it is vital if we are to make informed decisions and weigh the perceived benefits of proposed activities against the potential costs of lost ecosystem services.

The economic value of goods or services that are already widely traded on the open market is relatively easy to measure, but that is only half the story. Let's look at the true price of prawns, for example.

Prawn or shrimp farming is a multi-billion dollar industry, but there is a hidden price to pay for cheaper prawns on our supermarket shelves.

Many of the companies involved take into account only traditional business costs, but largely ignore the associated environmental, ecological, cultural, social and biodiversity costs.

Prawn farming has been associated with illegal land seizures, large-scale destruction of mangrove forests, pollution of water and agricultural land, not to mention violence, intimidation and child labour.

The mangrove forests that are sacrificed in the name of shrimp farm construction are important habitats for many species of fish and shellfish, and their loss leaves coastal communities with reduced food security and less potential for income generation.

The 2004 tsunami highlighted the importance of mangroves in reducing the impact of such disasters, as areas with mangroves in Sri Lanka and Sumatra – where FFI works, incidentally – suffered less damage than those without.

The true cost of prawns is paid by the poor and vulnerable in the developing countries where 99% of these prawns are farmed.

And to add insult to injury, this entire process doesn't even increase the overall food supply. We're hovering up the anchovy stocks in one part of the seas, wrecking that particular marine ecosystem in the process, and shipping them to the other side of the world, in order to feed prawns that will end up on our tables pumped full of antibiotics.

It's economic madness and ecological suicide.

Here's another example. Taken in isolation, timber extraction is a highly profitable business, but what impact does it have on the rest of us?

Once we start to factor in the costs to the planet in terms of soil erosion, nutrient loss, flooding, lower water quality, reduced carbon storage, temperature changes, rainfall patterns, wildlife habitat destruction and lost recreational opportunities, it doesn't take an economics professor to work out that the logging companies are profiting at everyone else's expense.

Even the most primitive cost-benefit analysis that takes account of these broader impacts will demonstrate that forests are worth more standing than lying horizontal on the back of a logging truck.

The Green India States Trust estimates the value of ecosystems and services to the Indian economy to be 7% of GDP. However, when they looked at the relative contribution that these ecosystems made to the poor, they found that it was nearer to 60%.

A key challenge for society in the new millennium will be to quantify the true value of ecosystem services in a way that enables the financial market to reward good practice and penalise bad.

FFI's own project portfolio reveals example after example of how 'avoided destruction' in its broadest sense - keeping ecosystems intact - can add economic value.

The afro-montane forest in Central Africa that supports the 700 mountain gorillas left in the world is more than just the last refuge of one of our most charismatic and endangered great apes.

This ecosystem also provides crucial environmental services to surrounding human communities, including climate regulation, water supply and prevention of soil erosion.

Tourism can help to change local perceptions by providing an economic rationale for mountain gorilla conservation, but the forest habitat has a much wider social and economic value beyond its importance as a gorilla refuge.

In 2007 tourism earned over US\$42 million for Rwanda, \$7 million of which was for gorilla permits alone. Gorilla tourism is the country's third largest revenue earner after tea and coffee production.

But the steep topography of the area also dictates that these two revenue streams, not to mention the subsistence farming carried out in the shadow of the Virunga Mountains, ultimately depend on the ecosystem services provided by the gorillas' habitat.

Deforestation of these steep slopes would not only condemn the mountain gorilla to extinction, but also have disastrous human consequences.

Soil erosion, flooding, erratic rainfall and local climate change would precipitate wholesale crop failure and complete collapse of the local economy.

Here's an illustration of how this all fits together.

Here we have the gorillas sitting in their ecosystem in the afro-montane forests of Rwanda:

The afro-montane forest helps stabilise climate and regulate rainfall. It also provides vital habitat for mountain gorillas.

Conserving the forest protects the remaining gorillas, which in turn generate money from tourism.

The forest also protects soil and regulates rainfall run-off, increasing the sustainability of crops grown on the lower slopes, such as tea and coffee - the primary exports of the country.

Further down still and we see the many different communities, including refugees and internally displaced people that depend on this ecosystem and the services it supplies.

Without the gorillas, the forest would not survive. Without the forest, neither the gorillas nor the communities would survive. The three are utterly interdependent.

Here's another example.

The Cape Floral Kingdom at the southernmost tip of Africa contains more kinds of plants than even the richest tropical rainforest. Of the 8,500 species growing here, almost 6,000 are found nowhere else in the world.

Some are breathtakingly beautiful flowers - gladioli, freesias, proteas and lobelias - familiar to gardeners and flower arrangers. Others are valuable medicinal plants.

This entire community of plants, known collectively as *fynbos*, is threatened by urban development, agricultural encroachment, over-exploitation and the spread of non-native tree species.

By helping to save over 20,000 hectares (200 square kilometers) of *fynbos* from destruction, FFI not only rescued an irreplaceable botanical paradise but also maintained an economic lifeline for the desperately poor rural communities whose livelihood depends largely on wild flower harvesting.

One of the keys to the success of this project is that it gives local communities the chance to benefit from their natural resources, and thus appreciate the need to conserve them.

Flower Valley is one of the few places in the region that offers work. It employs up to 60 people, and the farms from which flowers are bought employ many others. Using profits from the flower business, it has already set up the region's first Early Learning Centre for pre-school children.

Although the flower harvesting is seasonal, the business has diversified into hand-made *fynbos* paper products. By guaranteeing year-round employment for the workers, Flower Valley is helping to reduce poverty in the Cape.

The *fynbos* range is now Marks & Spencer's best selling flower bouquet and Flower Valley has also entered into a deal to supply Waitrose, another of the UK's biggest supermarket chains.

Landowners, private businesses and local communities have now woken up to the fact that biodiversity, if managed and harvested sustainably, will provide much better long-term economic benefits than other agricultural land uses.

Flower Valley is a shining example of how conservation and development activities can be combined successfully to improve livelihoods, save biodiversity and make a profit.

The more complex services associated with the regulation of natural processes are difficult to value, of course, but new markets are beginning to emerge as the business sector wakes up to the potential impact of biodiversity loss on its bottom line.

Bloom or Bust, a recently issued briefing document on biodiversity and ecosystem services, commissioned by the UNEP Finance Initiative and co-authored by FFI, included an unequivocal message to the business community:

'It is no longer a case of conserving charismatic endangered species – although these in themselves can confer significant economic and reputational value. Rather, it is becoming an issue of global policy that the benefits provided by biodiversity are valued and accounted for within traditional business risk frameworks.'

At the G8 environment meeting in Potsdam last year, where the delegates agreed on an initiative to estimate the economic costs of global biodiversity loss, there was also a clear signal to the financial sector:

'We will explore the need and the options of additional innovative mechanisms to finance the protection and sustainable use of biological diversity, together with the fight against poverty. In this context we will examine the concept and the viability of payments for ecosystem services.'

It is one thing setting a market price for a bunch of *fynbos* flowers or a gorilla permit. It is quite another matter to decide how much to pay people, and which people to pay, for not cutting down a rainforest. Concepts such as carbon credits and avoided destruction have huge potential as conservation tools, but I can tell you from personal experience that setting up, managing and regulating such schemes is not for the faint-hearted.

But we mustn't let a little thing like insurmountable practical difficulties put us off. And Macquarie Group, a name no doubt familiar to all of you here, is helping FFI to rise to that challenge.

Studies by the World Bank have shown that deforested land in the tropics is worth US\$200-500 per hectare as pasture but, if left as forest, could generate revenue of US\$1,500-10,000 from the carbon markets.

Although there is still uncertainty surrounding the kind of incentives that will be developed for forest conservation, it seems likely that market mechanisms will play a role.

Financial institutions are beginning to wake up to this opportunity. A number of innovative collaborations have begun developing and testing new financial products based on the potential value of standing forests – not only for their carbon storage capacity, but also for the other benefits they provide (such as active ingredients for drugs and water cycle maintenance).

An FFI-Macquarie Taskforce is exploring an avenue of Payments for Ecosystem Services known as REDD – Reduced Emissions from Deforestation and Degradation.

FFI and Macquarie are working to develop six pilot projects around the world to exemplify just how REDD can be made to work, for investors, for forest dependent communities and for the global environment. The forest sites selected to date – in Indonesia, Mozambique, Cambodia and Liberia – are characterised by their huge value in conserving biodiversity and their ability to act as a store for greenhouse gases.

If we can make REDD work it will be one of the most successful examples of the merging world of business and biodiversity to date.

The early signs are positive.

At the United Nations climate talks in Copenhagen in December this year, REDD is likely to be incorporated in some shape or form into a post-Kyoto framework.

Putting a value on a living forest is only the first step. Ultimately, that forest's fate lies in the hands of the people living closest to it.

Long-term success hinges on convincing these communities that they themselves stand to profit materially from preserving, rather than plundering, their natural heritage.

Carbon sequestration isn't the only invisible value that we're talking about here.

Take the case of the rosy periwinkle.

Native to the tropical forests of Madagascar and used by traditional healers to treat diabetes, this plant has provided western scientists with two very important cancer-fighting medicines.

These medicines have proved very profitable for global drug companies. Worldwide sales are worth over £75 million (US\$150m) a year, but virtually none of this money finds its way back to Madagascar, one of the poorest countries in the world.

The pharmaceutical sector is hugely indebted, literally, to biodiversity. It is estimated that over two thirds of the drugs discovered over the past 25 years have come from nature.

Aspirin may be the best-known pharmaceutical in the world, but its basic ingredient, which comes from the bark and leaves of the willow tree, has been known as a natural remedy for centuries in Europe and North America.

Prunus africanus is used in the treatment of prostate cancer.

Quinine, which is derived from the bark of the cinchona tree, was widely used to treat malaria before the development of synthetic anti-malarial drugs.

More recently, as multi-drug resistant strains of malaria have emerged, the medical profession has come to rely on artemisinin. This drug is derived from artemisia, a plant that has been used by Chinese herbalists for over a thousand years to treat fever and other ailments.

Where will the next anti-malarial come from?

The current rate of species loss suggests we could be unwittingly wiping out our future medicines. More drugs that could help us fight cancer, AIDS and malaria could well be out there, locked up in plants in the middle of the rainforest.

But if we let those plants disappear by destroying their habitat or animal pollinators, we'll never know. That has huge implications for not only the pharmaceutical business but future global health.

While we're on the subject of sustainable resource use; let's remind ourselves how badly we are performing at this point in time. Sustainable development, as we all know, requires us to meet the needs of the present without compromising the ability of future generations to meet their own needs.

It's not going well.

According to the UN, more than 60% of the planet's ecosystem services such as clean water, fertile soils and pollination are being used up faster than they can be replenished. This downward spiral is likely to intensify as demand for raw materials continues to grow.

This clearly has serious implications for the long-term viability of any business that depends on natural systems for value generation.

It is creating new risks to security of supply, brand value, licence to operate and investment return.

For example; it isn't just honey lovers who should worry about the global bee decline - attributed to parasitic mites and colony collapse disorder.

Animal pollinators affect 35% of global food production, increasing the output of 87 leading food crops worldwide. Global value of pollination in 2005 was estimated to be \$217 billion, equal to 10% of the total value of world food production. That means pollinators are responsible for three out of every five bites we take.

Global demand for pollination services is now outstripping the supply of pollinators - in part due to bee declines - but also due to growth in food crops requiring pollination.

This is no surprise when you consider that the global population has ballooned from just 2.9 billion to more than 6.5 billion in the space of the past 50 years – that's a lot more mouths to feed!

Let's look at the state of the world's fisheries.

FAO estimates that 70% of the world's fish stocks are either overexploited or fully exploited, yet one billion people depend on fish as their primary source of protein.

In addition, an estimated 200 million or so people around the world depend directly on fishing for their livelihoods.

In Australia alone, the industry is worth \$2.2 billion to the economy every year.

The financial consequences of a global collapse in the commercial fishing industry don't bear thinking about.

But that's exactly where we are heading. Scientists predict that if we continue fishing as we are now, we will see the end of most seafood by 2048.

Thomas Friedman argues that to save ecosystems of plants, animals and forests we need the right ecosystems of policies, investment and people.

People suffering from poverty are disproportionately vulnerable to the loss of biodiversity and ecosystem services. Threats to species and habitats pose real threats to their health and livelihoods.

On a broader scale – there is also a political case to be made for biodiversity.

The cost per mega-litre of irrigation water in the Murray-Darling basin in 2007-8 rose from \$40 to \$1,200, stabilizing at \$300, which was a 750% increase on original baseline.

The TEEB Climate Change Update, launched last month, highlights that biodiversity and ecosystem services contribute significantly and cost effectively to efforts to adapt to unavoidable climate change. For example, using mangroves as flood protection.

It is estimated that inaction on climate change will reduce global GDP by a staggering 20%. That should be a deafening wake-up call for policymakers.

A critical factor in combating climate change and other 21st century problems of our own making will be our willingness to acknowledge the true value of the natural world, thereby providing an economic rationale for taking better care of the planet.

The amount of research going into evaluating the economic worth of ecosystem services is growing.

For example, the European Commission estimates the value of the watershed protection provided by intact coastal ecosystems, such as mangroves and other wetlands, at US\$ 845 per hectare per year in Malaysia and US\$1,022 per hectare per year in Hawaii.¹ Those figures represent the cost of NOT having these coastal ecosystems in place, in terms of damage to infrastructure, impacts on human health and loss of livelihoods such as fisheries.

¹ http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf

Though there is no exact science to putting a value on the benefits of biodiversity, it is nevertheless worth estimating a ballpark figure. Methods to do so are constantly being improved. As you can imagine, there is quite a lively academic debate around the topic.

Once a value has been estimated, it can be included in cost-benefit analyses undertaken by both the private and the public sector.

Evaluating biodiversity and ecosystem services in this way presents us conservationists with an invaluable tool. It helps us to communicate the importance of biodiversity to businesses and policymakers. And it helps them to integrate biodiversity in their planning and operations.

In the current climate, so to speak, the incentive for business to work with the conservation community has never been stronger or better articulated.

We stand to see more synergies between the business agenda and the conservation agenda, which presents new hope for securing the future of our natural world.

We have come along way since the days when tree-huggers and corporate fat cats were portrayed as sworn enemies.

And we like to think that FFI was at the forefront of many of the initiatives that began to consign the 'us and them' mentality to the history books.

At a time when most green groups were pointing fingers at corporations rather than shaking hands with them, FFI took the radical step of inviting them in for a chat.

The corporate sector affects biodiversity in many ways, the most obvious being activities such as mining, timber extraction, oil exploration, commercial fishing or large-scale food production. Some large corporations have a carbon footprint many times that of entire countries in the developing world.

As far as we were concerned, the companies having the biggest environmental impact were the ones that offered the greatest scope for change.

Why deny ourselves the opportunity to engage in a constructive dialogue with these people?

It seems like only yesterday that FFI helped to stage a landmark international conference in London entitled 'Biodiversity and Business—Putting Principles into Action'.

In fact, it was 10 years ago. That event provided a forum to discuss business opportunities, trailblazing initiatives and corporate strategy in the context of biodiversity conservation and sustainable use.

Around the same time FFI launched its Global Business Partnership to advance understanding of the relationship between biodiversity and business.

That partnership comprised a range of commercial and industrial companies, all of which recognized the business value of having a strategic policy on the issue of biodiversity.

Globalization, mega-mergers and industrial privatization on a grand scale have all led to a situation in which the corporate sector exerts an all-pervading influence on the planet.

From the conservationist's perspective, the benefits of developing constructive working relationships with big business are undeniable. We can promote sustainable use, helping them to establish environmental controls that minimize the ecological impact of their activities and take into account the needs of local communities.

But why should the business sector take account of biodiversity?

Businesses that take account of biodiversity in their operations stand to benefit in countless ways.

- Reduced reputational risk
- Reduced financial risk
- Reduced operational risk
- Improved global competitiveness
- Reduced compensation and conflict-related costs
- Reduced industrial action
- Increased co-operation from local communities
- Improved relationships with governments, regulators and investors
- Company of choice for eco-savvy consumers

The list goes on and on.

In the face of exponential population growth, accelerating habitat loss and seemingly irreversible climate change, we need a more holistic approach to conservation that exploits the potential synergy between business, community and conservation interests.

One example of this is what we're doing in the Great Sandy Biosphere in Queensland, the site of FFI's first ever conservation project in Australia. As well as tapping into the traditional knowledge of the native Australian communities, we are exploring ways to introduce financial incentives to conserve this vital ecosystem.

In Sumatra the Acehnese post-tsunami government is implementing a green economic development and investment strategy for this province, including business, natural resource conservation and agriculture.

An exciting project we are developing with the finance sector and alongside the United Nations Environment Programme, is the Natural Value Initiative.

This project focuses on companies in the food, beverage and tobacco industry which have a particularly strong dependence on ecosystem services.

As ecosystem services continue to decline around the world, there is a risk to these businesses that the services they rely on may one day become unavailable.

For example, evidence suggests that in some regions freshwater supply will soon be outstripped by demand. This will ultimately lead to more competition for water and increasing operating costs for water dependent companies.

If I was an investor, I would want to know where these regions were and which companies may be affected by this before I parted with my cash.

We are developing a special toolkit that will help investors and business analysts in the finance sector to assess exactly what these risks are. It will also help them identify the best investment opportunities in light of this trend.

Ultimately the toolkit will encourage best practice and stimulate improved performance and responsible behaviour.

I think I've said enough but before ending, a few words about the way forward. We have already started of course – governments and business have realized that we have to change our business model. The problem is that biodiversity is a complex and confusing issue and often only made

tractable if broken down into 'sub-issues' such as water and land conservation. It also lacks the 'numbers' and appropriate legislation.

With the publication of Nick Stern's report on climate change, for the first time it gave us the financial arguments. I am hoping that 'The Economics of Ecosystems and Biodiversity' (TEEB) will rectify this situation and allow for further mainstreaming.

Moreover, if we can get the inclusion of avoided deforestation into the Copenhagen treaty, this could save vast tracts of natural habitat and prevent 20% of the world's greenhouse gases being released. More than the global transport system!

Furthermore, if we place a moratorium on threatened fish stock and increase marine protected areas from 0.6 to 20 per cent this would save the world's fishing industry and parts of the marine ecosystem. This would cost 14 billion Euros which is \$2 billion less than the current fishing subsidies.

So there are things that we can do and things that are already happening. We just have to remember that a healthy planet isn't just a human right. It is an essential to our continued survival.