

## EDITORIAL

**Funding nature conservation: who pays?**

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At the Convention on Biological Diversity (CBD) meeting in Nagoya in October 2010, the world's governments signed up to an encouragingly ambitious set of conservation targets. These included protecting 17% of the world's land surface and 10% of the oceans by 2020. The meeting also achieved its three inter-linked goals: the adoption of a new 10-year Strategic Plan (CBD, 2011); a Resource Mobilization Strategy to increase development assistance in support of biodiversity; and a new international protocol on access to and sharing of the benefits from the use of the planet's genetic resources. To achieve these goals, governments must substantially increase their contributions towards biodiversity conservation. With the current global financial crisis, this will be a huge challenge. Many poorer countries have already indicated a lack of resources to implement the CBD targets (see below). In addition, many governments are already committed to raising \$100 billion (USD) per year for climate change by 2020, and may not be able to afford additional investment that supports biodiversity conservation. In response to the existing financial challenges, budgetary decisions on how to pay via the Resource Mobilization Strategy were deferred until 2012. Efforts are currently under way by the CBD Secretariat to document current expenditures on biodiversity conservation worldwide, and to cost out what it would take to implement the Strategic Plan.

This raises the fundamentally important issue of the source of the funds required to pay for conservation more generally in the 21st century. We identify six non-exclusive key ways in which spending on nature conservation can be increased. In so doing, our intention is to stimulate debate within the conservation community while at the same time identifying knowledge gaps.

Even in the face of declining public sector budgets, there are mechanisms for governments to dramatically increase

spending on nature conservation. First, subsidies, especially in agriculture, forestry and fisheries, could be removed or reoriented. For example, the European Union (EU) spends nearly half of its annual budget (approximately €43 billion) on agricultural subsidies (EU, 2012) that historically have caused significant biodiversity declines (Donald, Green & Heath, 2001; Donald *et al.*, 2006). Although the EU's Common Agricultural Policy now pays farmers to enhance biodiversity through agri-environment schemes, it is not clear whether such schemes actually benefit biodiversity (Kleijn *et al.*, 2006). Although more research is needed, removing or reorienting some of the subsidies (i.e. to support biodiversity outcomes more effectively) could benefit biodiversity directly and would reduce subsidized biodiversity destruction. South Africa is a leader in this approach and is moving towards investing significant funds into 'ecological infrastructure' (similar to the more loosely defined term 'natural capital') as a means of supporting rural development and increasing resilience in the face of climate change (Cadman *et al.*, 2010).

Second, governments can change regulatory frameworks to improve incentives for private sector support of conservation. Much like carbon trading, it is possible to include biodiversity into marginal abatement cost curves (MACC; MACC 2012), which identify options available to reduce environmental impacts.

Third, governments can alter controls on overseas aid budgets to make it easier for them to support conservation. There is increased recognition that biodiversity conservation is important in poverty alleviation and national development and that the poor rely upon biodiversity in a number of ways (Millennium Ecosystem Assessment, 2005; Secretariat of the Convention on Biological Diversity,

2009). Thus, promoting conservation is entirely compatible with the generally conceived intents and objectives of international development.

Fourth, tax incentives can be used to increase the funding for conservation. Across a number of countries, tax benefits are available to land owners who covenant their land by donating it to conservation or subject it to a conservation easement (Bowles *et al.*, 1998). There are also tax benefits to individuals or the estate of deceased for contributions made to charities that benefit conservation objectives. Increasing these opportunities across the globe would lead to substantial areas and funds being made available for conservation.

Fifth, overseas aid can be used as ‘Payments for Ecosystem Services’ (PES). The Economics of Ecosystems and Biodiversity study made important advances in drawing attention to the global economic benefits of biodiversity (TEEB, 2010). Within this framework, PES schemes provide financial compensation to land owners who avoid, for example, converting standing forests to other land uses. PES typically involves monetization of key environmental services that society value and that forests might provide. For example, the Reducing Emissions from Deforestation and forest Degradation plus the conservation, sustainable management and enhancement of forest carbon stocks (REDD+) scheme exemplifies a simple method of putting a price tag on the carbon storage and sequestration services provided by forests. The basic premise of REDD+ is that without it, a certain amount of carbon dioxide would be emitted due to the loss or degradation of forests. These expected emissions serve as a reference level by which to determine the amount of carbon credits awarded to a REDD+ project. What has excited so many about REDD+ is the perceived scale of the financing (Ebeling & Yasue, 2008). Global carbon markets traded a staggering \$142 billion in 2010. An early projection estimated that REDD+ could generate \$10–60 billion per year in payments to developing countries if deforestation were to be halved (Ebeling & Yasue, 2008).

Sixth, scientists and conservationists in a global economic recession are increasingly turning to private funders and wealthy individuals-turned-philanthropists to pay for their work (Ledford, 2012), and this, despite the potential pitfalls, presents a unique opportunity for conservation. Philanthropy need not be exclusive to the super rich. Innovative ideas such as ‘crowd-funding’ – raising money for conservation directly from the public – are one way for organizations to fund conservation projects while engaging large numbers of people.

Clearly, there are considerable knowledge gaps in how changing or increasing funding will affect biodiversity. For example, it is unclear what impacts the removal or reorienting of subsidies will have on biodiversity. Attempts to incorporate biodiversity in MACC have been slow. More research is needed to better understand the links between biodiversity conservation and poverty alleviation. There is also an urgent need to quantify the ecosystem services provided by biodiversity and to find ways of harnessing natural capacity. All these areas of uncertainty inhibit the development of novel mechanisms to fund biodiversity conservation. To fill these knowledge gaps requires that conservation

scientists build interdisciplinary programmes with non-biologists – economists, social scientists and policy makers. Regardless of the financial costs of this immense undertaking, the social and ecological costs of failing to adequately protect dwindling global biodiversity are unimaginable.

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