The Myths and Opportunities of Offsetting

In July 1960, Jane Goodall set up a camp in Gombe to start her research on chimpanzees – a site that was surrounded by forest on three sides and Lake Tanganyika on the fourth side. Five months later 20 young men invaded that camp to try to drive her away and claim the land for cultivation. In a 1963 letter in her autobiography, Jane Goodall (2000) raised the issue of how to make the Gombe Reserve pay to ward off pressure for other economic uses because "this particular little Reserve is NOT safe" (her capitals). In 1968 the Gombe Reserve was made a Game Reserve and then became a National Park in the 1970s. It is only about 50 km^2 in area – one of the smallest National Parks in Tanzania. Then in the early 1990s, Jane Goodall (2010) flew over the area and "was horrified to see the degradation of land outside of the tiny national park." That influenced her to shift her efforts from research to addressing the social, political and economic institutions that drive biodiversity loss.

I have worked as a bureaucrat in the Australian Federal Government, administering the impact assessment process for over twenty years. In that role, I have had oversight of hundreds of environmental impact assessments (EIA) in every Australian State and Territory. However I find that much of the debate around offsetting biodiversity loss under EIA and strategic environmental assessment (SEA) to be misguided at best and counter-productive at worst.

This paper focuses on offsetting impacts to Australian biodiversity under EIA and SEA.

The economist Herbert Simon (1957) stated we make decisions within the space of 'bounded rationality' and see the world through different lenses:

> "To predict how economic man will behave, we need to know that he is not only rational, but also how he perceives the world – what alternatives he sees, and what consequence he attaches to them."

Proponents (businesses and governments) speak the jargon of market economics, while environmentalists speak the jargon of environmental stewardship (Juniper 2013). So the potential for dialogue is constrained, because the language of each side shapes how they interpret the world. In other words, they have asymmetric interests.

In 2004, the Australian Government started to systematically require offsets for impacts to biodiversity under *Environment Protection and Biodiversity Conservation Act (1999)*. Prior to that, mitigation was the primary means of reducing impacts. So the impacts of projects were being reduced by square metres, or even tens of square metres, while the actual footprints of the projects resulted in impacts of 10s of hectares or 100s of hectares. That disconnect between the focus on mitigation and the actual impacts of footprints occurred because the impacts of footprints were generally regarded as economic externalities; that is, the biodiversity had no value. Therefore before 2004 impact assessment processes had minimal influence on the magnitude of impacts on biodiversity.

When systematic offsets were required, bureaucrats experienced significant blowback from almost every proponent. As proponents were subject to costs they were not previously exposed to. The

'boundary' conditions for projects had changed. There is a belief that offsetting for impacts to biodiversity has always occurred in Australia, but offsetting was previously rare. It was more common in industry sectors that used market based instruments to achieve their objectives to control emissions of pollutants and manage resource use (Environment Australia 1997).

The International Convention on Biological Diversity (1992) refers to the obligation to "avoid or minimize adverse impacts on biological diversity". That obligation has evolved into the so-called 'mitigation hierarchy', which requires the avoidance of impacts on biodiversity rather than mitigation, and the mitigation of impacts rather than offsetting (IUCN 2016). However that hierarchy expresses ideological aspirations rather than a sound process for practical implementation.

If the avoidance step in the hierarchy was always implemented, developments would only occur on sites devoid of biodiversity, and no further steps would be required. And the notion of stepping from avoidance to mitigation lacks logic, when avoidance is always possible – projects don't have to proceed. Discussion on the implementation of the 'mitigation hierarchy' displays a level of subjectivity worthy of the obscurantism of postmodern philosophy. The 'mitigation hierarchy' is predicated on the assumption that impact assessment is a simple linear system, whereas impact assessment occurs within a complex non-linear system, which is influenced by a range of social, political and economic institutions.

There is a myth that the 'mitigation hierarchy' – to avoid, mitigate and then offset impacts – is implemented in SEA and EIA. But that belief has no basis in logic or reason. It is a case of the tail wagging the dog. Proponents (businesses and governments) respond to costs not motherhood statements. So there is a direct relationship between the cost of offsetting and the avoidance of impacts. In addition, the belief that implementing the 'mitigation hierarchy' delivers better biodiversity outcomes has no basis in reality. Offsets are plastic and can easily be increased or reduced. It isn't hard to picture scenarios of offsets delivering much better outcomes for biodiversity than avoidance. Therefore, the 'mitigation hierarchy' is an expression of dogma rather than a scientifically valid proposition based on empirical evidence and robust theory.

Proponents generally avoid impacts to biodiversity in particular circumstances:

- the cost of the impact assessment process is greater than the cost of avoidance
- a project is likely to be refused because of the magnitude of impacts
- there is little or no additional cost to avoid impacts
- there is significant political pressure on a proponent to avoid impacts

However, environmentalists would like proponents to avoid impacts to biodiversity all of the time. They exhibit the psychological phenomenon of 'loss aversion' (Kahneman 2011), which means that biodiversity losses loom larger than gains for them.

Offsetting was originally introduced at the Australian Government level to address the failure of the EIA and SEA processes to achieve meaningful steps to minimise impacts – not to allow developments to occur. Impacts on biodiversity were no longer treated as economic externalities after offsetting was required. That encouraged proponents to avoid and mitigate impacts to reduce transaction costs, and made some land-uses uneconomic.

Proponents may start the planning process for projects years or even decades before submitting them for impact assessment. Therefore proponents can make significant 'sunk costs' on projects, which means that impact assessment processes rarely result in significant changes to projects. That makes it important to influence project planning well before a project is submitted for assessment. Different types of constraints influence EIA and SEA outcomes. The philosopher Alicia Juarrero (1999) describes constraints as 'governing constraints' and 'enabling constraints'. EIA and SEA processes are enabling constraints, as they just provide the legal scaffolding for decision making, and a range of outcomes are possible. And they generally don't define boundaries for the conservation of biodiversity that would influence project design. However, the 'mitigation hierarchy' is a governing constraint. It seeks a particular outcome and constrains innovation.

EIA and SEA processes impose various transaction costs (Coase 1960) on those who wish to undertake projects with significant impacts. Those transaction costs include: the cost to undertake the assessment process, the cost of mitigation, and the costs of offsetting impacts. And the relative contribution of each transaction cost influences project design. The efforts taken to mitigate impacts vary significantly for projects and are determined by a project's cost-benefit analysis.

For those undergoing assessment of their projects, money is measureable (Dan Ariely and Jeff Kreisler 2017), and in the absence of legally prescribed thresholds for impacts on biodiversity in SEA and EIA processes, it becomes a significant default factor that influences project design. The cost involved in offsetting is therefore a key factor in project planning.

Transaction costs therefore influence environmental outcomes (Gleeson-White 2014). However, transaction costs are not a key consideration in designing EIA and SEA processes. Millions of dollars may be spent on undertaking EIA and SEA processes while only tens of thousands of dollars are spent on actions to protect and manage biodiversity. If the one of the primary objectives of impact assessment was to facilitate the protection and management of biodiversity, then questions should be raised about the efficacy of that approach. Creating an industry to produce bigger EIA and SEA documents, that the public rarely reads, does little to achieve broader strategic goals for the conservation of biodiversity (Sunstein 2013).

Both proponents and environmentalists dislike offsets but for different reasons. Proponents dislike the economic costs imposed, while environmentalists dislike the loss of biodiversity. However environmentalists take a reductionist approach to impacts on biodiversity. They focus on the implementation of the 'mitigation hierarchy' to address potential impacts of individual projects rather than achieving holistic long-term conservation goals. That focus on the dogma of the 'mitigation hierarchy' detracts from the effort spent on making holistic gains for biodiversity within a complex non-linear system. In addition, biodiversity is on a trajectory of decline, so the do nothing option of avoidance maintains that trajectory. Both protection of biodiversity and adequate management are required, and decline will continue unless funding is provided for both the long-term protection of biodiversity and management of threats.

It is important to understand the social, political and economic institutions that drive EIA and SEA processes, so that logic and reason can be applied to influence the complex system, and address the decline in biodiversity. The concept of offsetting is plastic and can be shaped to reverse the decline of biodiversity. However proponents will always seek to minimise costs. For example, while covenants on private land are a cheap offsetting proposition, compared to the acquisition of land for

public conservation, the jury is out on whether covenants provide an effective long-term solution to protect and manage biodiversity. Covenants generally lack measurable thresholds of management which reduces enforceability. Land owners may change every 5-10 years so future owners may not have the same investment in covenants as the original owners. In addition, the general public has little 'buy-in' on private land conservation. So some approaches to offsetting may have little long-term value.

Offsetting can be used as governing constraints or enabling constraints. Defined land-based metrics for offsetting are governing constraints, as they stifle innovation in developing alternative measures and addressing landscape scale threats. In contrast, offsetting can be used as enabling constraints which allow for new adaptive institutions to emerge that conserve biodiversity.

The future of offsetting is in using it as an enabling constraint, and integrating it with the conservation objectives for bioregions. That entails analysing impact assessment as a complex non-linear system rather than focusing on individual projects. Some of the factors that should be considered in offsetting within a bioregion are as follows:

- The adequacy of public land protected for conservation
- The adequacy of corridors between areas of public land protected for conservation
- The adequacy of long-term funding for the bioregional management of threats, such as weeds and feral species
- Long-term research on the adequacy of protection and management of biodiversity

Anybody who has worked in Government knows that environmental priorities change regularly. Therefore an offsetting framework should facilitate the development of institutions that both protect and manage biodiversity in order to reverse its decline. And the offsetting framework should also reduce reliance on direct Government funding.

We can develop and modify institutions, such as offsetting, to get better outcomes for biodiversity. Or we can wait for governments to implement revolutionary regulatory mechanisms. Meanwhile in Gombe National Park, the population of chimpanzees has fallen from 150-160 in the 1970s, to about 95 today (Langat 2019).

Bibliography

- Ariely, Dan and Kreisler, Jeff 2017, *Dollars and Sense: How we Misthink Money and how to Spend* New York, HarperCollins
- Coase, Ronald (1960) The Problem of Social Cost. *Journal of Law and Economics 3 (1): 1–44*
- Environment Australia 1997, *Environmental Incentives: Australian Experience with Economic Instruments for Environmental Management*, Environmental Economics Research Paper No.5 *Consultancy report prepared by: Dr David James, Ecoservices Pty Ltd*
- Gleeson-White, Jane 2014, *Six Capitals, The Revolution Capitalism Has To Have – Or Can Accountants Save The Planet?* Sydney, Allen & Unwin
- Goodall, Jane 2000, *Africa in My Blood: An Autobiography in Letters: The Early Years* New York, Houghton Mifflin Company

- Goodall, Jane 2010, *Jane Goodall 50 Years at Gombe: A Tribute to Five Decades of Wildlife Research, Education and Conservation* New York, Stewart, Tabori & Chang
- IUCN 2016, *Policy on Biodiversity Offsets* https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2016_RES_059_EN.pdf [accessed on 18 April 2019]
- Juarrero, Alicia 1999, *Dynamics in Action: Intentional Behaviour as a Complex System Cambridge*, Massachusetts, The MIT Press
- Juniper, Tony 2013, *What has Nature Ever Done for Us?* London, Profile Books
- Kahneman, Daniel 2011, *Thinking Fast and Slow* New York, Farrar, Strauss and Giroux
- Langat, Anthony 2019, *For the famed chimps of Gombe, human encroachment takes a toll* https://news.mongabay.com/2019/02/for-the-famed-chimps-of-gombe-human-encroachment-takes-a-toll/ [accessed on 18 April 2019]
- Simon, Herbert 1957, *Models of Man: Social and Rational* New York, John Wiley & Sons
- Sunstein, Cass R. 2013, *Simpler: The Future of Government* New York, Simon & Schuster
- United Nations 1992, *Convention on Biological Diversity* https://www.cbd.int/doc/legal/cbd-en.pdf