



BIODIVERSITY OFFSETS

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Biodiversity offsets...What are they?

“Measurable conservation outcomes resulting from actions designed to **compensate** for significant residual adverse biodiversity impacts arising from project development after appropriate *prevention* and *mitigation* measures have been taken” (BBOP)

Used to allow some continued development within an overall objective of No Net Loss, or net gain, of biodiversity and are based on the premise that impacts from development can be offsets if sufficient habitat can be **protected, enhanced or established elsewhere** (Gibbons and Lindemayer, 2007)





Policy instruments for biodiversity conservation and sustainable use

Regulatory approaches	Economic instruments	Information and voluntary approaches
Restrictions or prohibitions on use	Price-based instruments - taxes, charges/fees, subsidies	Ecolabelling & certification
Access restrictions or prohibitions (e.g. protected areas)	Reform of environmentally harmful subsidies	Green public procurement
Permits & quotas (e.g. logging/fishing)	Payments for Ecosystem Services	Voluntary approaches (negotiated agreements)
Quality, quantity, and design standards	Biodiversity offsets/biobanking	Corporate environmental accounting
Spatial planning	Tradable permits	
	Liability instruments	





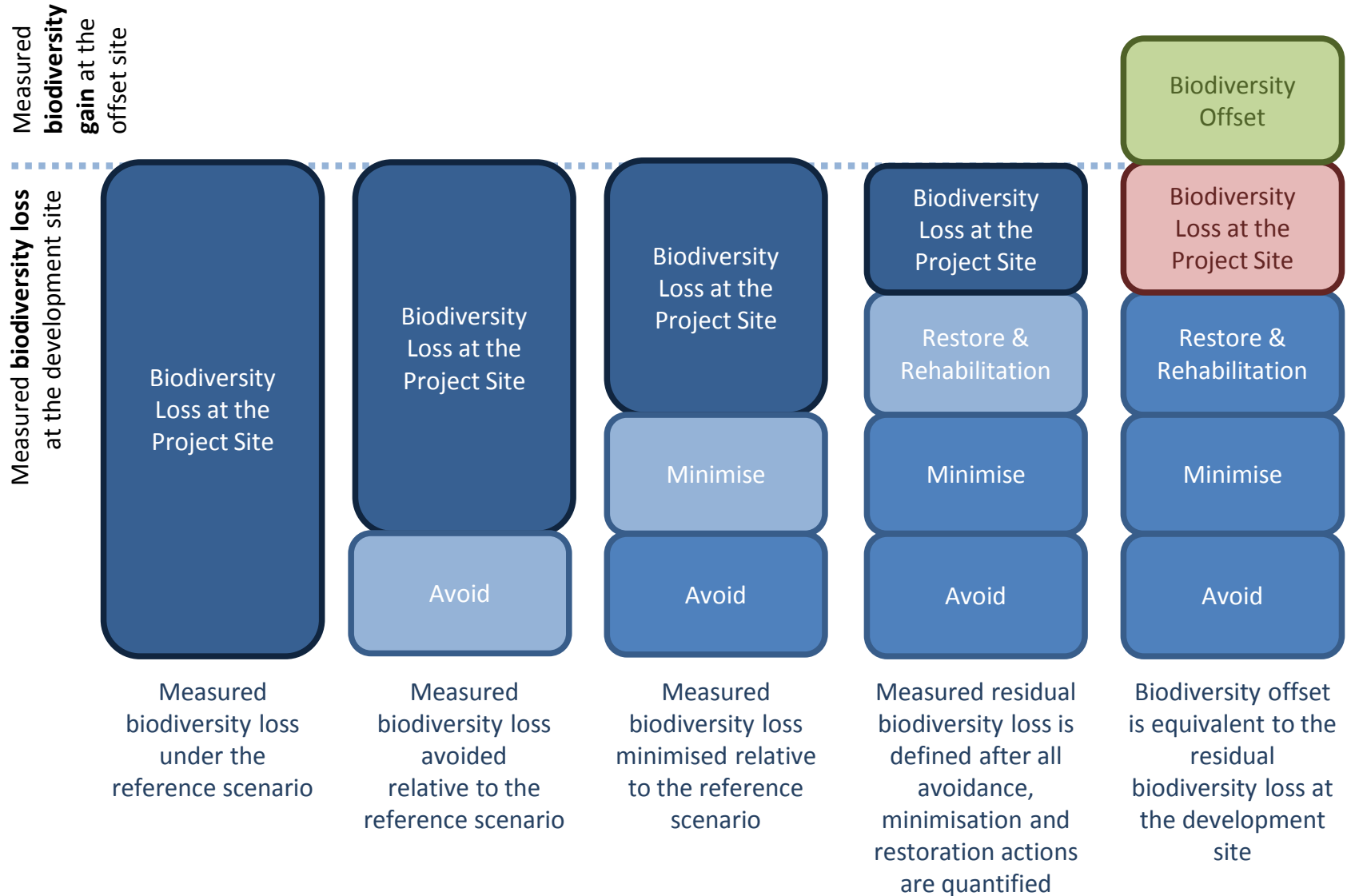
Biodiversity offsets: *How are they evolving?*

- First formalised in the US, in the 1970s, for Wetland Mitigation
- Have more recently proliferated in a number of countries: Today more than 40 countries or states have laws or policies in place that require offsets or some form of compensatory conservation for particular sets of impacts.
 - Australia, Brazil, Canada, China, Colombia, Germany, India, Mexico, New Zealand, South Africa, Switzerland, EU and US
- An additional 27 compensation programmes are under various stages of development. At European level, for example, biodiversity offsets are being examined as a mechanism to achieve the “no net loss of biodiversity and ecosystem services” target of the EU 2020 Biodiversity Strategy





Biodiversity offsets – Last step in the Mitigation Hierarchy





Biodiversity offsets generally take one of 3 forms

- **One-off approach** – once predicted adverse impacts have been evaluated, offset is carried out by developer or by subcontractor (e.g. conservation NGO)
- **In-lieu arrangement** – a government agency stipulates a fee that a developer has to pay to a third party, to compensate for residual biodiversity impacts
- **Biobanking** - once predicted adverse impacts are evaluated, developer can purchase offsets directly from a public or private biobank





Sectors and ecosystems where biodiversity offsets have been applied

- **Sectors:** Mining, windpower, pulp and paper, hydropower, oil & gas, property development, infrastructure, agriculture
- **Ecosystems:** wetlands (e.g. US & Canada), streams, fish habitat (Canada & Queensland, Australia), native vegetation (Victoria, Australia), forests (India, Mexico, & Brazil), and others...





Scale and impact of biodiversity offsets

- Biodiversity offsets and other compensation schemes mobilised an estimated USD 2.4-4 billion each year
- Biodiversity offsets have resulted in the protection or restoration of more than 187,000 hectares (Madsen et al, 2011).





Design and implementation features

- Equivalence and offset replacement ratios
- Location of the offset
- Additionality and leakage
- Timing and permanence
- Transaction costs
- Monitoring, reporting and verification
- Compliance and enforcement
- Stakeholder participation and distributional issues





Equivalence and offset replacement ratios

- As no two areas are ecologically identical, designing offsets requires an assessment of how to achieve biodiversity benefits at offset sites that are **equivalent** to losses at the impact site
- Ideally, the **metric** should cover type, quantity and quality of the biodiversity. Once the metric has been established, an **offset replacement ratio** can be assigned
- Ratios may vary depending on *e.g.*, proposed offset action (preservation vs. restoration); distance from offset site; temporal losses; risk and uncertainty





Monitoring, reporting and verification

- Essential to evaluate compliance and assess progress towards intended objectives of biodiversity offsets
- In *US Wetland Mitigation Banking*, *US Conservation Banking* and *New South Wales Biobanking*, offset providers are required to monitor their performance against standards established in the offset or banking agreement, and submit monitoring reports to regulators periodically.
- Performance is then verified by on-site inspections
- Compliance information may also be collected through public notification





Factors to consider prior to introducing biodiversity offsets:

- Good metrics and indicators for biodiversity are relatively easy to identify and construct
- Biodiversity and ecosystems service benefits are not exceptionally high, irreplaceable or vulnerable
 - Clearly define the **limits** to what can be offset
- There are available offset sites and known conservation approaches to achieve the desirable offset outcomes
- Start with pilot programmes; test, review, adapt; then scale-up





Thank you

For further information on OECD work on the economics and policy of biodiversity and ecosystems, visit:

www.oecd.org/env/biodiversity

Key areas of OECD work on biodiversity:

- ❖ Biodiversity Indicators, Valuation and Assessment
 - ❖ Economic Instruments, Incentives and Policies for Biodiversity
 - ❖ Biodiversity Finance, Development and Distributional Issues
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- Recent work: *Scaling Up Finance Mechanisms for Biodiversity* (2013); “Biodiversity” chapter in *OECD Environmental Outlook to 2050* (2012)
 - Forthcoming work: *Biodiversity Offsets; Biodiversity Policy Response Indicators*

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