BIODIVERSITY OFFSETS FOR COMPENSATING RESIDUAL IMPACTS: Concept to Practice

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What are biodiversity offsets?

"Biodiversity offsets are 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 Website http://bbop.forest-trends.org/

"A form of mitigation used to address net biodiversity loss after all other mitigation measures have been taken" ***(EBI, 2003).***

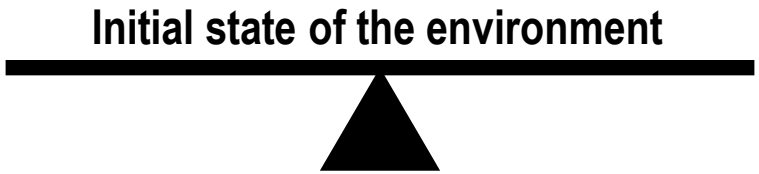
"One or more appropriate actions that are put in place to counterbalance (offset) the impacts of development on biodiversity" ***(NSW, 2005).***

"Conservation activities designed to deliver biodiversity benefits in compensation for losses in a measurable way" ***(Hannis & Sullivan, 2012).***

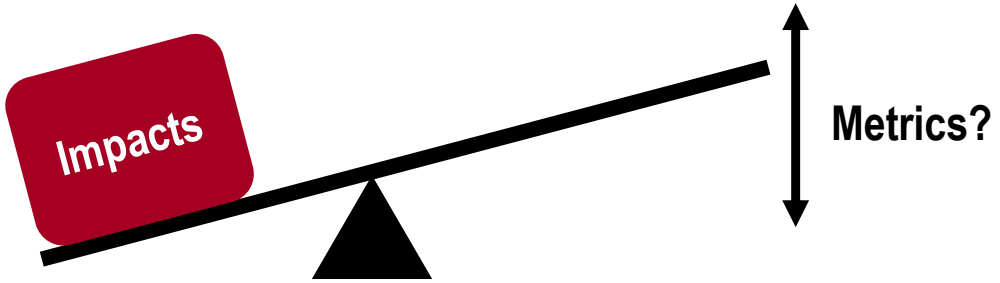
The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure and ecosystem functions and services and people's use and cultural values associated with biodiversity.

Biodiversity accounting and offset designs method

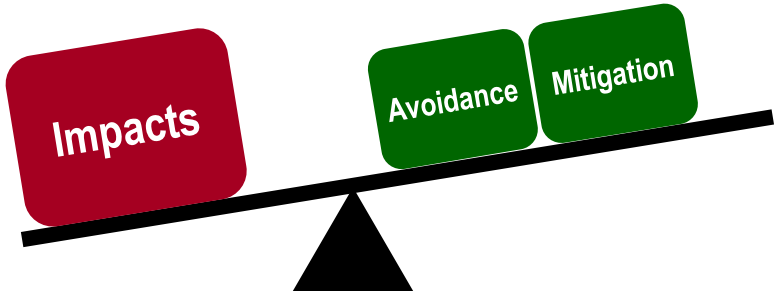
Original state of environment



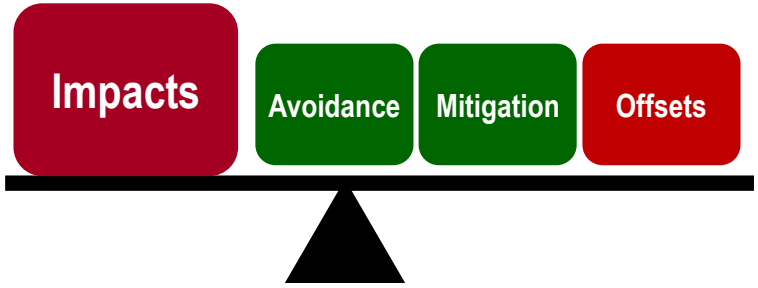
Unmitigated Impacts

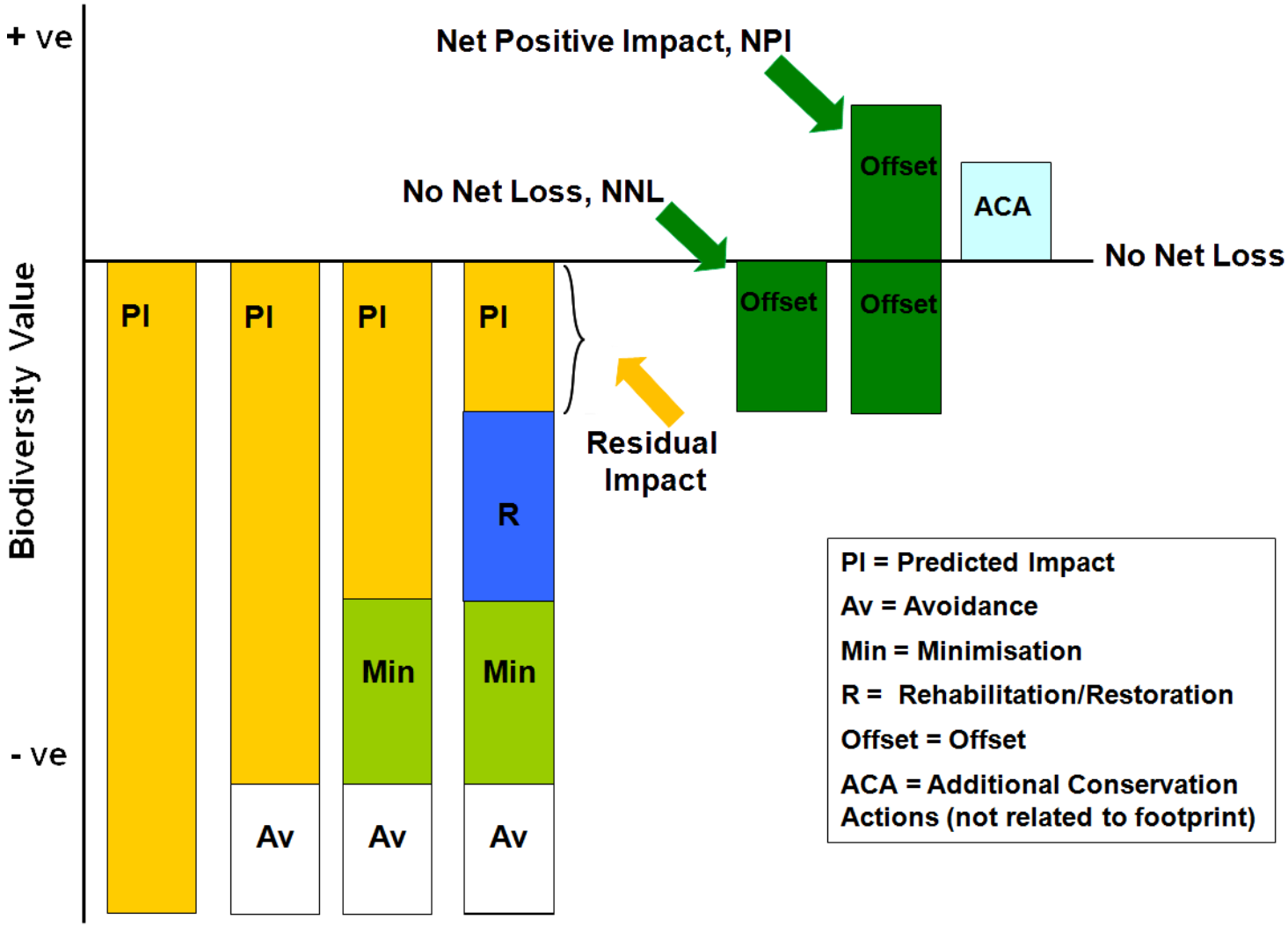


Traditional mitigation hierarchy



No net loss through biodiversity offsets





Source: BBOP, adapted from Rio Tinto & Govt of Australia

Why develop biodiversity offsets?

- Conservation of biodiversity is an environmental objective, sustainable use of biological resources is an economic objective, and equitable sharing of biodiversity benefits is a social objective.
- Development of biodiversity offset is an approach to incorporate sustainability assurances in business, finance and development

Benefits of biodiversity offsets

For governments

- Better balancing of costs and benefits of conservation and economic developments
- Opportunities for national governments to fulfil commitments under Millennium development goals and Convention on Biodiversity

For developers

- License to operate, new market opportunities and competitive advantages

For conservation communities

- A mechanism to reconcile conservation into development planning and biodiversity into the investment plans
- More incentives to promote in situ conservation initiatives and better conservation outcomes
- Focussing on high biodiversity value habitat and conservation priorities instead of highly compromised sites

For resource economists

- New approach for financing conservation and achieving greater economic value for biodiversity

For environmental groups

- Ethical environmental stewardship

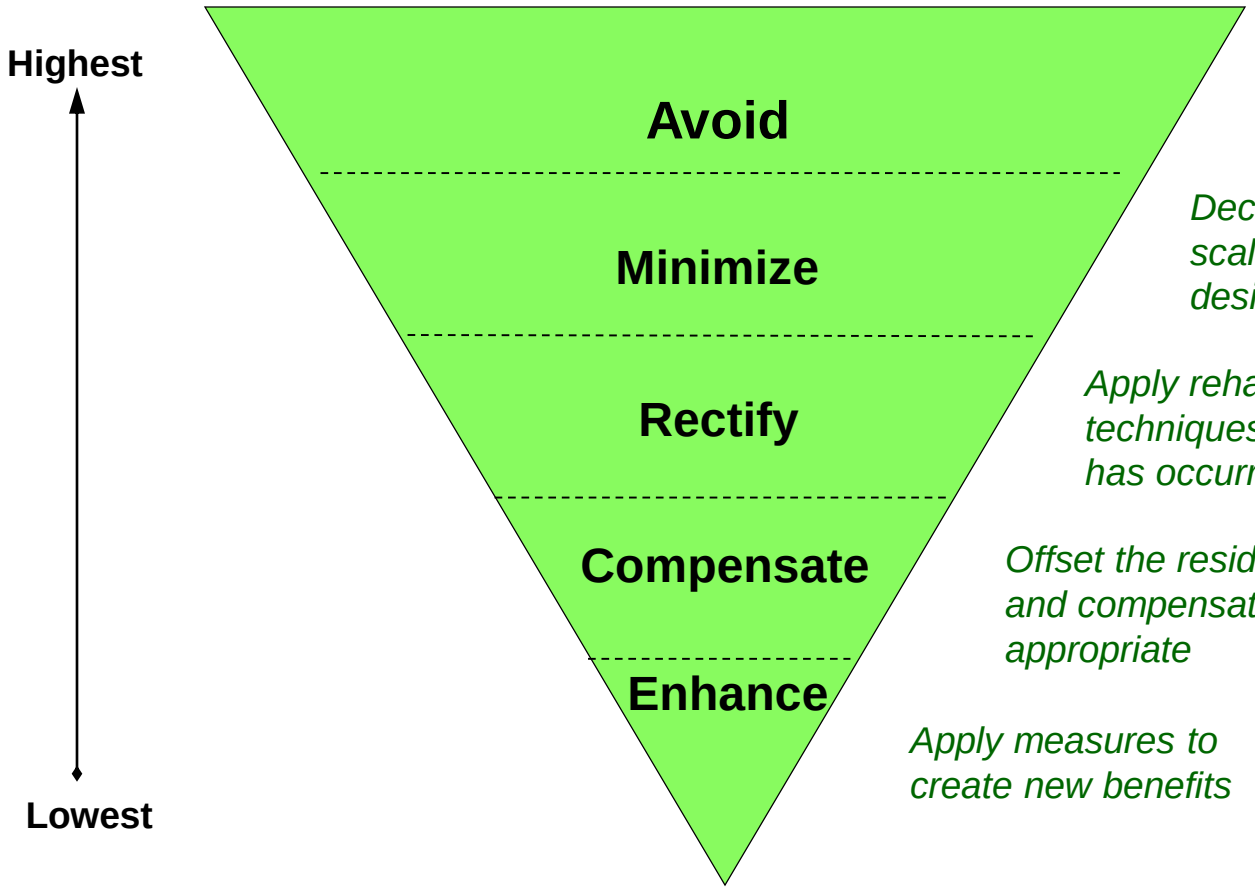
For communities

- Ensuring the benefits of functioning and productive ecosystems and support to livelihood and better amenities

Ground rules for developing biodiversity offsets

- Offsets are no substitute for “no go” areas
- Offsets are not a project negotiation tool
- Offsets follow the principle of ‘like for like or better’
- Biodiversity offsets should follow the mitigation hierarchy

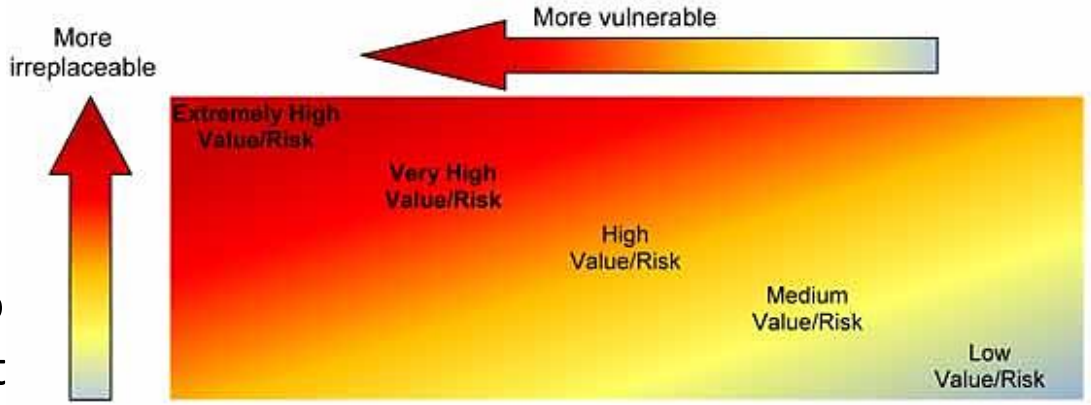
Mitigation hierarchy



(Modified from UNEP 2002 and Rio Tinto, 2004)

Guiding principles

- **Limits to offsetting**: Not everything can be offset (e.g. Extinction of species) not appropriate for 'critical' or 'no replaceable' biodiversity asset



https://www.doc.govt.nz/about-us/our-policies-and-plans/guidance-on-biodiversity-offsetting/

Additionality: Biodiversity offset gains result from biodiversity action.

Equivalency: requires that biodiversity losses and gains represent a fair exchange

Permanence: gains lasts as long as the losses or beyond

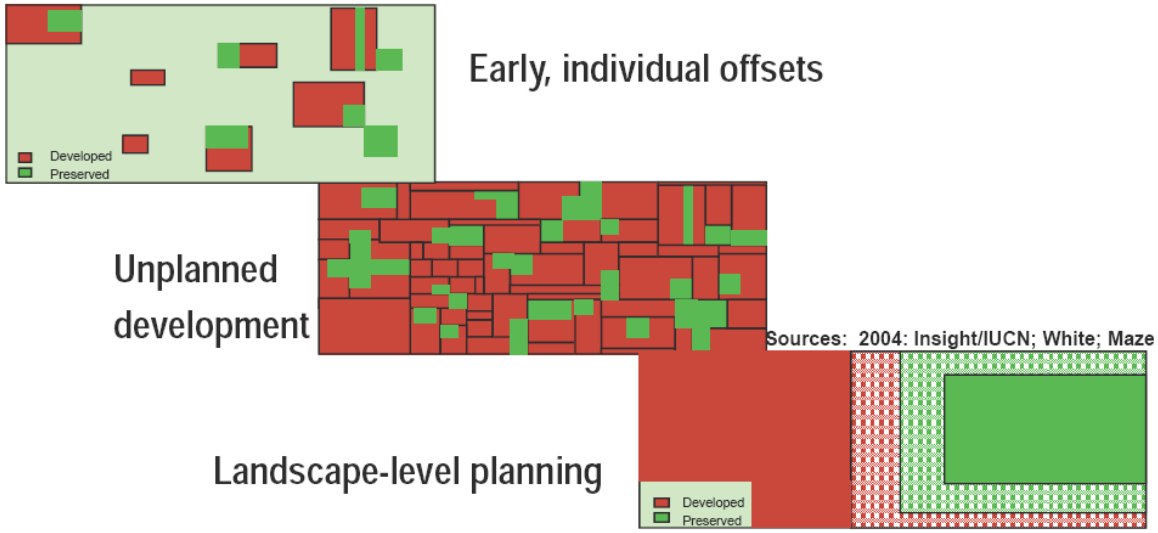
Offsets not a means to reward poor environmental performance

Criteria for defining offsets

- Conservation offsets should be consistent with national and local conservation and development priorities.
- Offsets must have local context and must be sensitive to indigenous people's rights

Offsets: best to implement at the landscape level

A biodiversity offset should be designed and implemented in a landscape context.



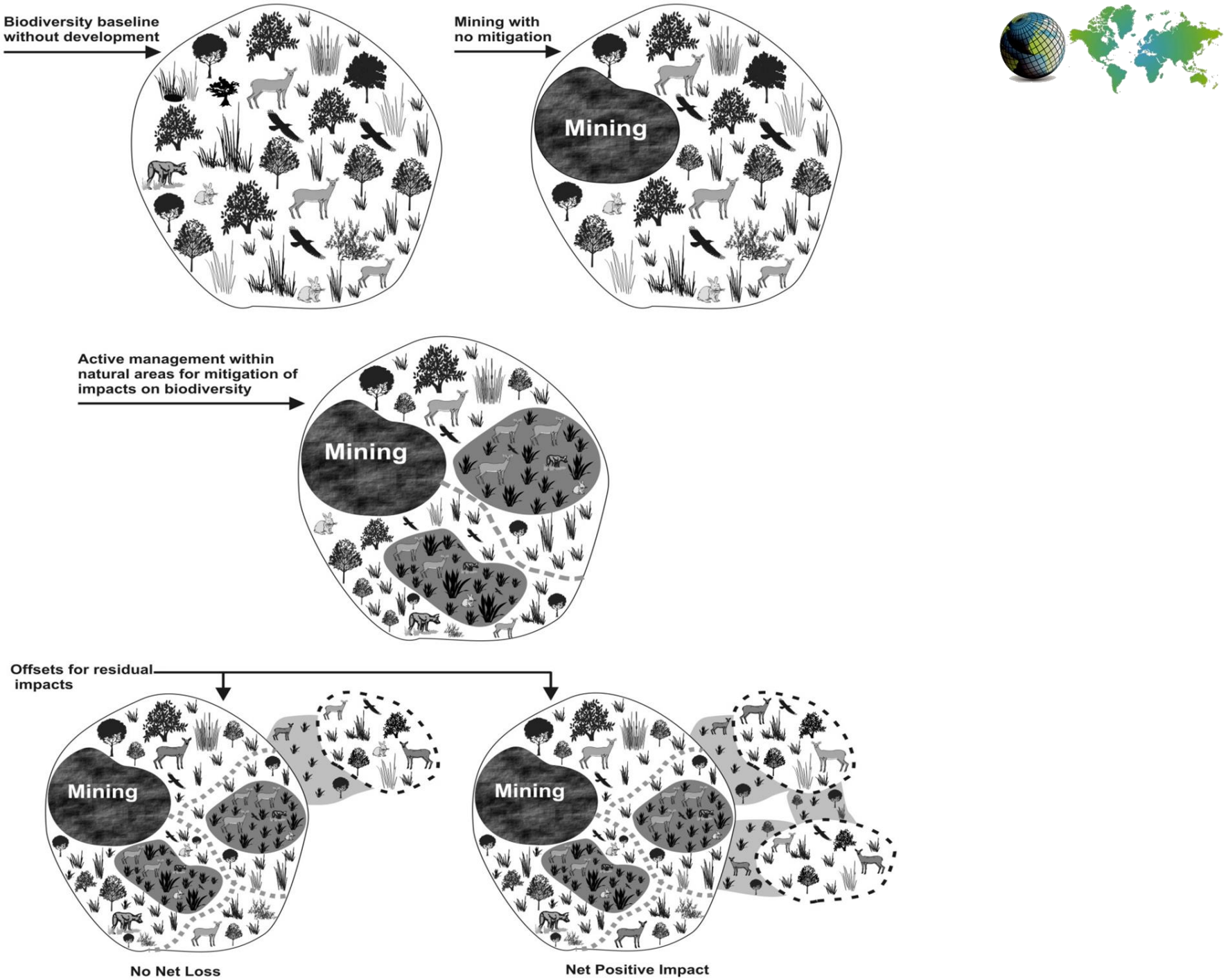
Pooling compensation activity to create more effective and beneficial areas of habitat could be one of the benefits of biodiversity offsetting.

Types of Offset activities

- Strengthening ineffective PAs: Improving the conservation status of certain neglected zone in a forest reserve by replanting degraded areas.
- Safeguarding unprotected areas: Entering into agreements with local communities.
- Addressing underlying causes of biodiversity loss: Working with communities to address livelihood needs to support alternative livelihood to stop unsustainable activities.

more…..

- Establishing corridors: Identifying and securing the conservation management of land that provides biological corridors between PAs.
- Establishing buffer zones around PAs lacking a buffer.
- Securing migration paths.
- Enhancing habitat on private land to improve its biodiversity value.
- Acquiring land that contains very high conservation values through open land markets.


Biodiversity baseline without development
Mining with no mitigation
Mining
Active management within natural areas for mitigation of impacts on biodiversity
Mining
Offsets for residual impacts
Mining
Mining
No Net Loss
Net Positive Impact

Market mechanisms for biodiversity conservation

- **Purchase of high value habitat** (land acquisition by buyers and government agencies for explicitly for biodiversity conservation)
- **Direct payments for access to species or habitat** (bioprospecting, permits for visit, collection of specimen and research data, recreation)
- **Payments for conservation and management of biodiversity** (on private, public lands, grazing lands, forests and wildlife areas)
- **Trading rights and credits** (operating through contributions represented by biodiversity credits and conservation banking)

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- Supporting biodiversity conserving business *(Business shares in enterprises and promoting biofriendly products)*
- Insurance and financing for mitigating impact risk (funds and enviro bonds)
- Mobilizing and organizing buyers and sellers for biodiversities values and ecosystem services
- Creating market for biodiversity conservation
- Ecological value added tax

How to offset?

Areas of uncertainty

How to devise appropriate offsets that are acceptable and link to business impacts on biodiversity ?

Technical issues

When?
Where?
How much?
For whom and by whom?

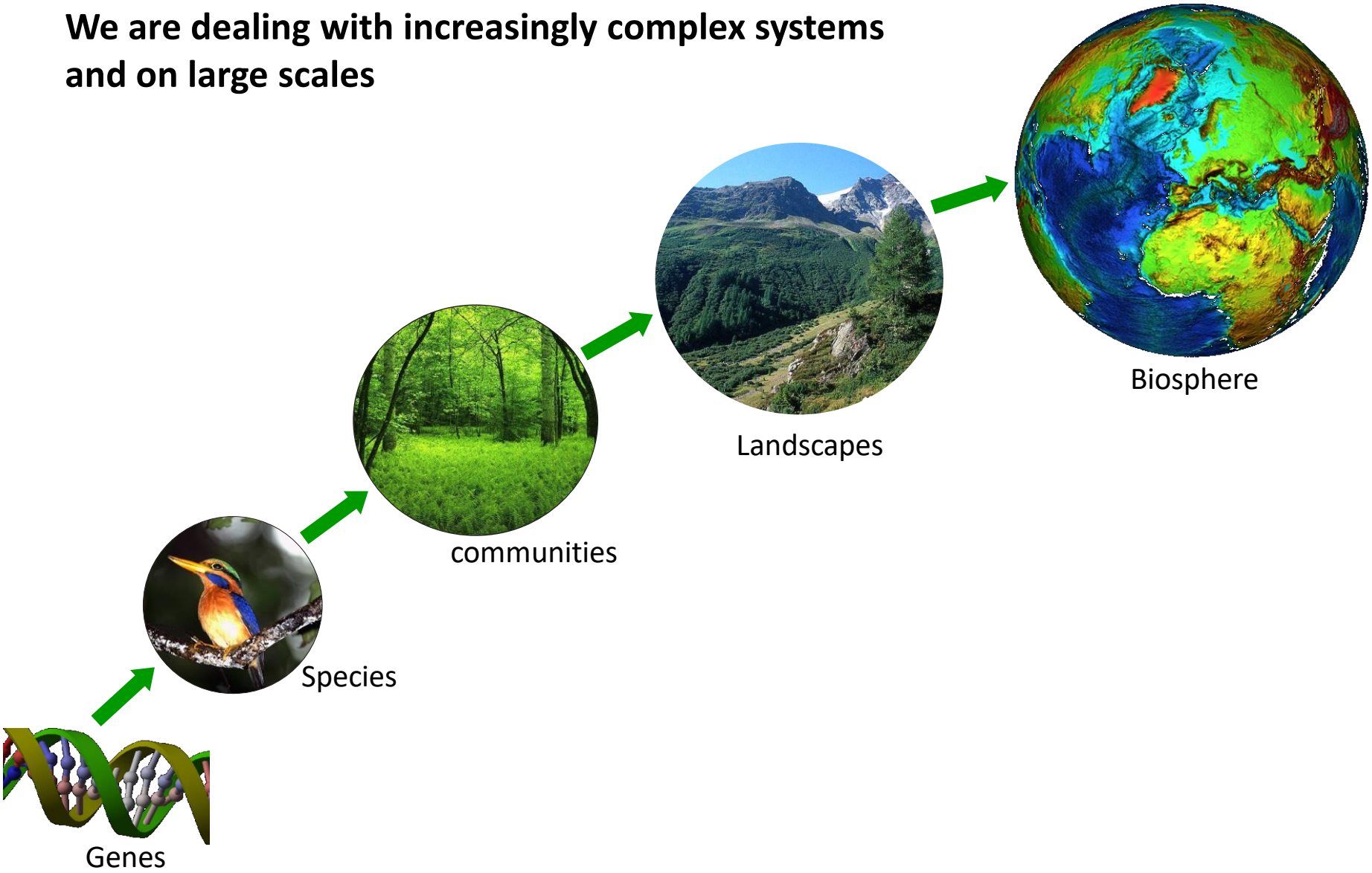
Time	Site	Scale	Equity
▪ Should be created at the beginning ▪ Match timelines of the project	▪ Onsite or offsite contributions	▪ Should be set larger in size than the area of impact	▪ Benefits to flow to conservation and those who incur costs

Steps in offset designs

1. Assess biodiversity values at risk assessment
2. Calculate amount of biodiversity loss (the residual impact)
3. Select best offset sites using ecological criteria
4. Determine the best size of the offset
5. Design conservation interventions for biodiversity gains
6. Reach agreements and obtain approvals
7. Enter offset implementation process

Problem of scale in implementing offsets

We are dealing with increasingly complex systems and on large scales



Key challenges

Accurate measures of impacts on biodiversity is almost impossible

http://naturenotforsale.org

Establishing equivalence for offsets is difficult

It is not possible to quantify benefits of ecosystem services and conservation values in absolute terms

We tend to adopt crude currencies for trading biodiversity

Problems of trading X for Y (forests for wetlands, parcel of land for habitat functions, lengths of streams for catchment benefits)

Need for better economic evaluation tools to improve public confidence in their findings

Risks associated with biodiversity offset

- *Biodiversity offsetting becoming a 'license to destroy' or damage existing habitat of recognised value*
- *Offsets becoming a means of justifying projects that could be avoided*
- *Places of already existing high wildlife value becoming 'Target areas' for applying offsets*

Global experience of using biodiversity offsets

	**Threatened species legislation amendment act 2004. Native vegetation Act 2003** Developer must first avoid and then ensure restoration of prior wetlands, enhancement of low quality wetlands and creation of new wetlands (hectare for hectare). ***California was the first state to authorize the use of conservation banking and has established 50 conservation bank since 1995***
	**Threatened Species Legislation Amendment Act 2004. Native vegetation Act 2003** Bio-Banking scheme to support biodiversity certification process demands that system of developing biodiversity credits needed to achieve a maintain or improve outcome for biodiversity. ***Green offsets pilot programme being implemented***
	**Forestry Code Law** 4771/1965) Percentage limits to natural habitat conversion are set for private properties, and for the area required to remain intact as forest. In the Amazon, 80% of the rural properties; in the Cerrado of the Amazon Region, 35% of rural properties; in the rest of Brazil, 20% must remain intact.
	**No net loss of fisheries habitat in Canada under the Fisheries Act under R.S. 1985, c. F-14, Policy for the Management of Fish Habitat (1986), Habitat conservation and Protection Guidance 1998**. Creation of similar habitat or increasing the productive capacity of the existing habitat near the development area or within the same site or in a different ecological unit that supports the same species

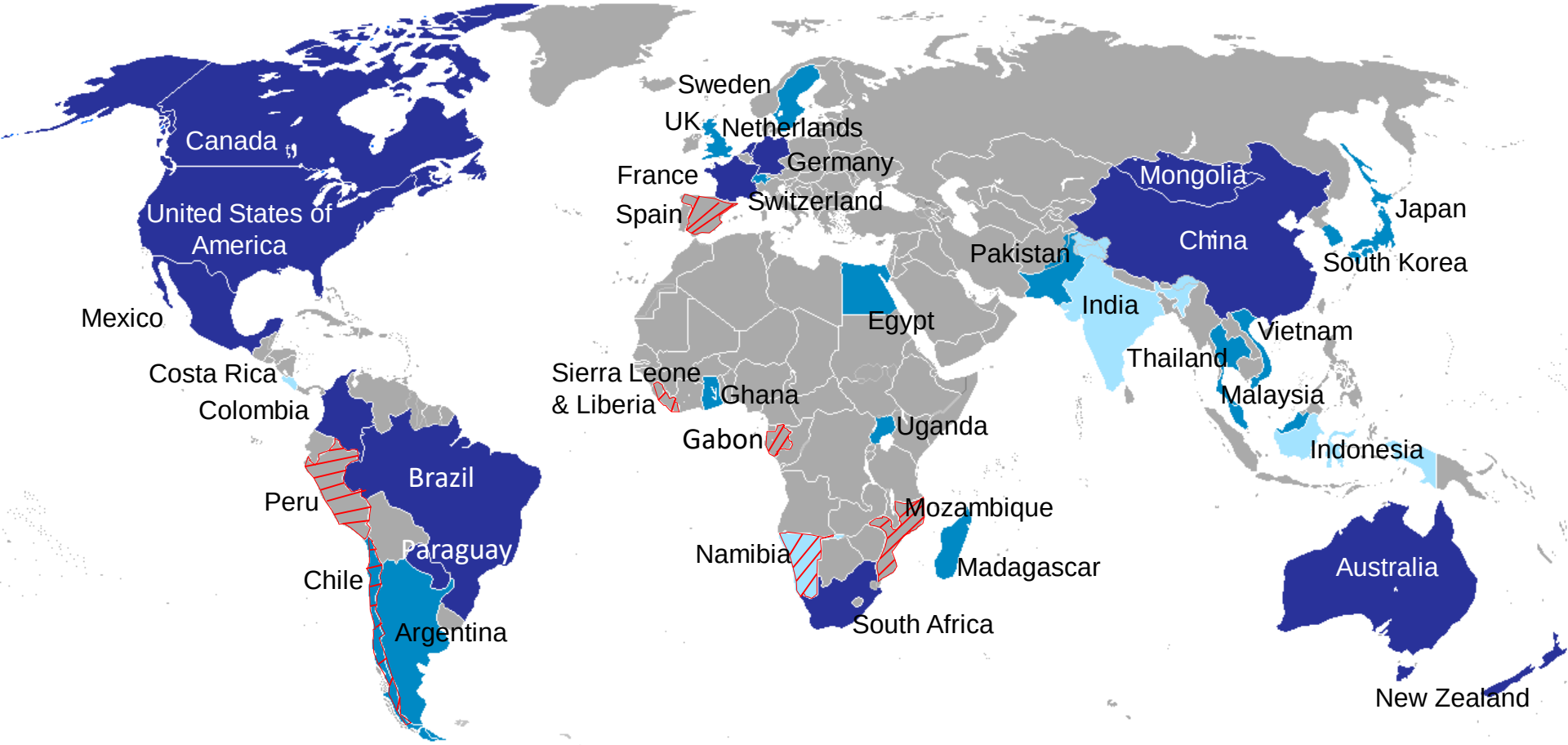
	**The Instituto Nacional Ecológia (INE) is developing a system of banking and trading biodiversity offset credits** The proportionate size of offsets increases farther the offset is away from the impacted area
	**National Environmental Management Protected Areas Act 57 of 2003; Western Cape draft provincial guidelines** The Western Cape Provincial Spatial Development Framework approved by Provincial Cabinet in 2005) created the policy framework for biodiversity offsets to curb the erosion of biodiversity.
	**Federal Law for Protection of Nature & Landscape** Federal law for protected of Nature and Landscape mandates reconstitution and replacement of protected biotopes where impacts are unavoidable (www.admin.ch/ch/f/rs/451/918.html
	**Habitats and Birds Directives and implementing regulations in the EU under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora and Council Directive 79/409/EE** The Environmental Liability operates on the 'polluter pays principle' requiring companies to undertake compensation for environmental damage. Offsets must ensure that the overall coherence of the Natura 2000 network is protected.

- **Global:** Safeguard policies - Operational Policy on Natural Habitats 1998

- **IFC**

  IFC does not support projects involving significant conversion of natural habitat unless there are no feasible alternatives for the project and its siting and comprehensive analysis demonstrate that the overall project benefits outweigh the environmental costs

- **Voluntary:** BBOP, ICCM, Anglo American, Newmont, Shell, BP, Chevron Texaco, Statoil, Walmart, DuPont, Rio Tinto



Countries with policies or regulations guiding or requiring offsets

Countries with policies or regulations enabling offsets

Countries implementing offsets voluntarily

Countries with no offset activities or offset-related policies

Countries developing offset-related policies and regulations

Recent initiatives of partnership for promoting Biodiversity offsets

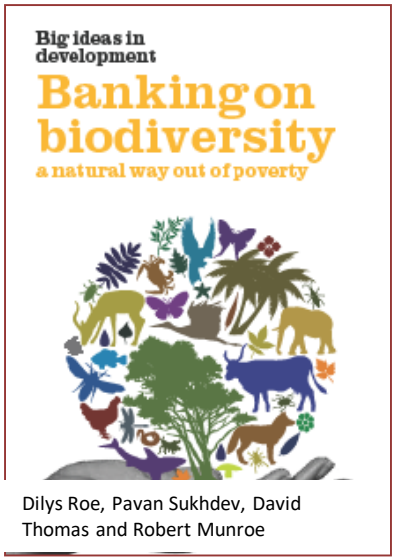
Business and Biodiversity offset Program (BOP) :
http://www.forest-trends.org/biodiversityoffsetprogram/index.php

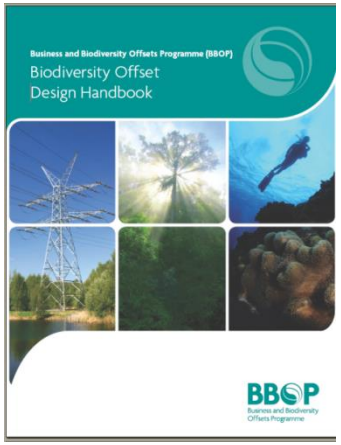
Learning network of more than 50 institutions including **companies, governments and conservation experts to explore biodiversity offsets.**

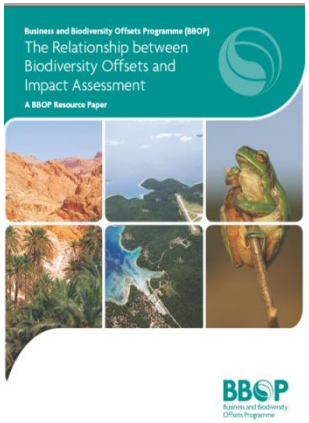
Objectives:

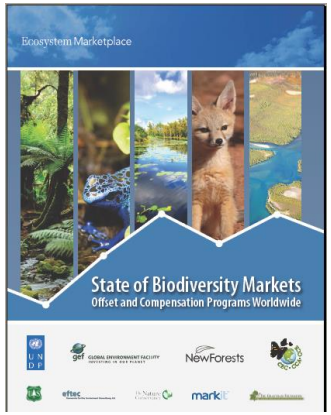
- Demonstrate conservation and livelihood outcomes from biodiversity offset pilot projects.
- Develop, test and disseminate best practice on biodiversity offsets.
- Share experience through case studies

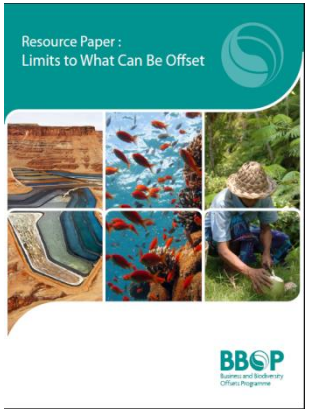
Resources

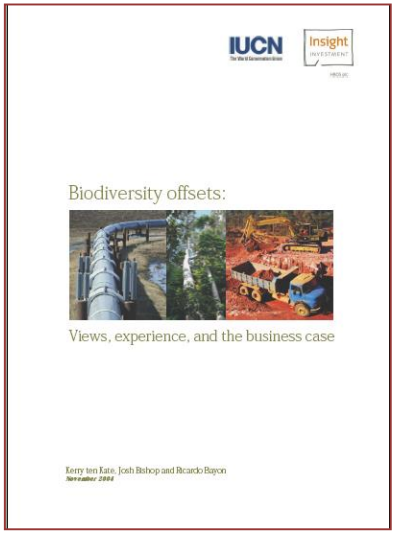


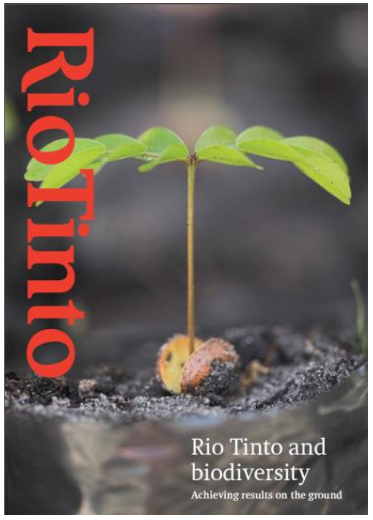










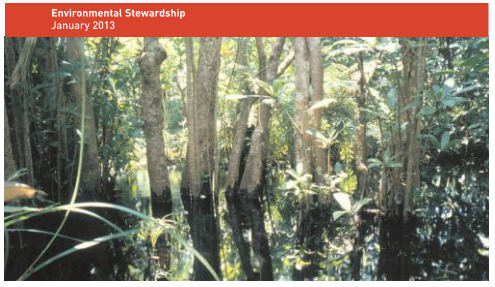


IUCN

ICMM
International Council on Mining & Metals

Report

Independent report on biodiversity offsets



Case studies from around the world