

Biodiversity offsets between regulation and voluntary commitment:

Development of a typology of voluntary biodiversity offsets using an expert and internet based research approach

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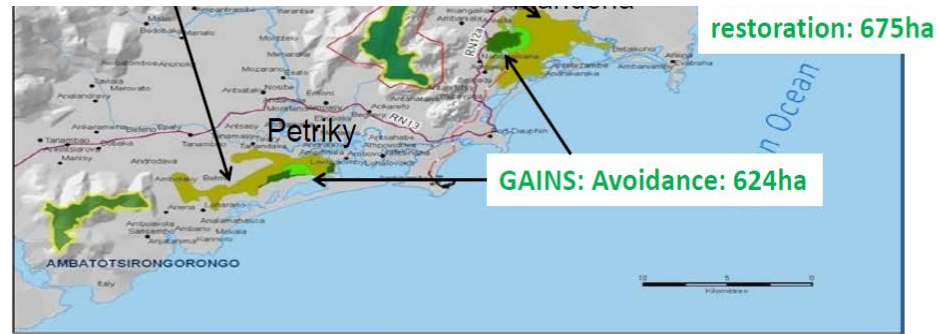
Subject: biodiversity offsets – a tool to address unavoidable residual negative impacts from development



Rio Tinto QMM Ilminite Mine, Madagascar (Source: QMM 2007)



Increasing number and diversity of biodiversity offsets



Problem statement: Growing controversy about mandatory vs. voluntary biodiversity offsets



**Legal
compliance**

Fines & sanctions

**Driven by
government**

**What is the way
forward?**



**Corporate
responsibility**

Business case

**Driven by
business**



**Practical evidence no longer
fits under the dichotomy of**

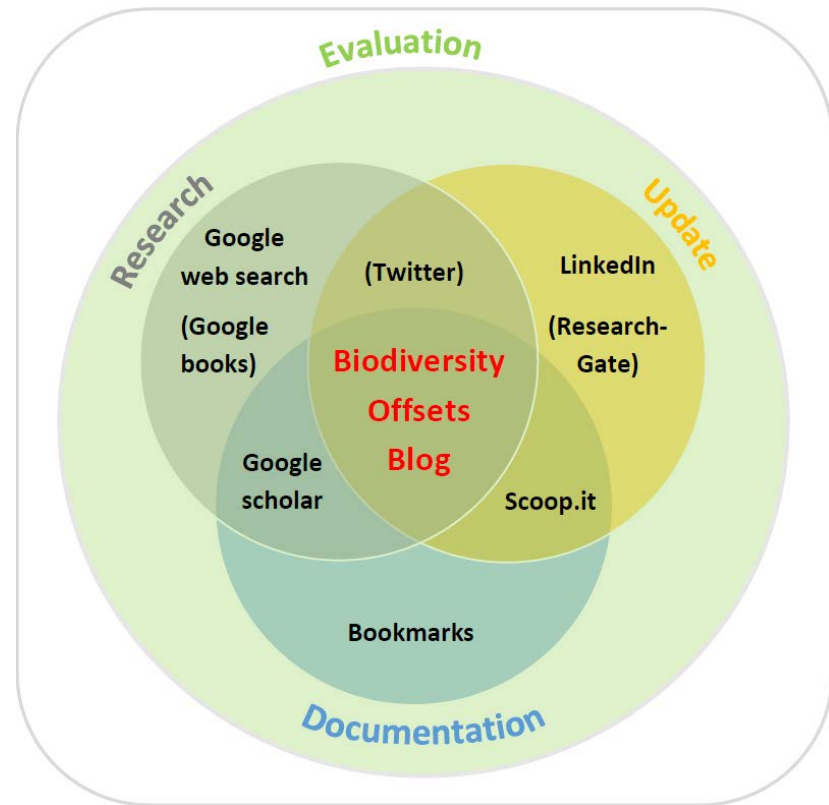
mandatory

mandatory vs. voluntary offsets

voluntary

Theoretical and methodological baseline

- **Exploration of theoretical concepts for voluntariness** (Voluntary Environmental Approaches, Corporate Responsibility etc.) → derivation of criteria and definition of key terms
- **An expert and internet based research approach:** qualitative, explorative, participant observational, (Cyber)Science 2.0 and research in Web 2.0
- Integration of theory AND empirics:
approach of Empirically Grounded Typification (Kluge 1999)



Steps and tools of internet based research used in this study (Source: author's own)

Conceptual framework of seven biodiversity offset types

1. **Regulatory offsets:** required by law and enforced.
2. **Conditional offsets:** required by financial institutions (e.g. International Finance Corporation).
3. **Enabled offsets:** fostered by governments and NGOs through pilot schemes, guidance etc.
4. **Sectoral offsets:** taking part in a voluntary self-commitment of a sector (e.g. mining).
5. **Corporate offsets:** driven by a voluntary self-commitment of a corporation.
6. **Local offsets:** single offsets, that are most likely developed at local level in a consensual process.
7. **Altruistic offsets:** truly voluntary offsets that are driven by the altruistic motivation to make a positive impact.

Motivation and ultimate goal Influence and initiators	Pressure (compliance)	Incentive (cost-benefit)	<i>Altruism / responsibility</i>
Government	Type 1 regulatory offsets	Type 3a enabled offsets (by government)	
Financial institute	Type 2 conditional offsets		
Sector	Type 4 sectoral offsets		
Corporation	Type 5 corporate offsets		
Local community	Type 6a local offsets	Type 6b local offsets (license to operate)	
NGOs	(reputational risk)	Type 3b enabled offsets (new global norms)	
Without major influence			Type 7 altruistic offsets

(Source: author's own)

Example #1: Type 5 corporate offsets – QMM IIminite mine (Madagascar)



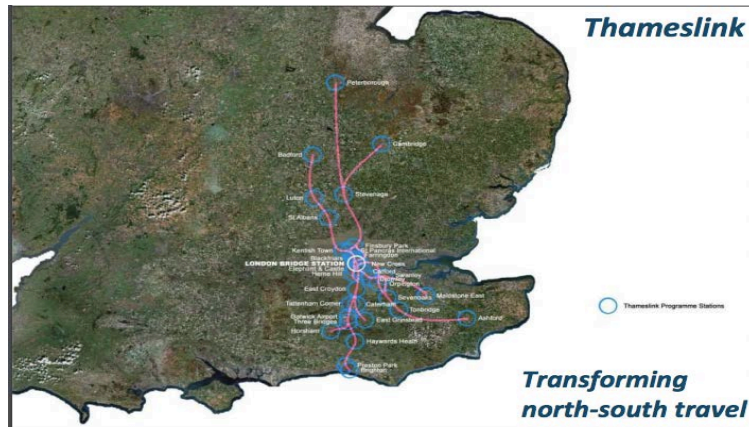
Rio Tinto QMM floating dredge and plant (Source: EJ Atlas 2016)



Restoration of littoral forest (Source: QMM 2007)

Motivation and ultimate goal Influence and initiators	Pressure (compliance)	Incentive (cost-benefit)	Altruism / responsibility
Government	Type 1 regulatory offsets	Type 3a enabled offsets (by government)	
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Local community	Type 6a local offsets (reputational risk)	Type 6b local offsets (license to operate)	
NGOs		Type 3b enabled offsets (new global norms)	
Without major influence			Type 7 altruistic offsets

Example #2: Type 6 local offsets – Thameslink railway (UK)



Thameslink rail enhancement (Source: Woodley and Baker 2014)



Ground-breaking ceremony for restoration at Streat-ham Common (Source: Woodley and Baker 2014)

Motivation and ultimate goal Influence and initiators	Pressure (compliance)	Incentive (cost-benefit)	Altruism / responsibility
Government	Type 1 regulatory offsets	Type 3a enabled offsets (by government)	
Financial institute	Type 2 conditional offsets		
Sector	Type 4 sectoral offsets		
Corporation	Type 5 corporate offsets		
Local community	Type 6a local offsets (reputational risk)	<div style="border: 2px solid red; padding: 5px; text-align: center;"> Type 6 local offsets </div>	
NGOs			
Without major influence			Type 7 altruistic offsets

Discussion of the typology

Differences between the types:

- Magnitude, location and particularities of the types
- Scale of development impacts
- Sectors/developments addressed
- Governance of the implementation

Limitations of the typology:

- Temporal aspects of biodiversity offsets
- Demand and supply side for biodiversity offsets
- Other drivers, e.g. consumers

Trends: Which of the offset types are promising?

- Depending on context
- Not one type alone preferred → all types have certain strengths and restrictions

→ The developed typology is dynamic, i.e. a starting point, not a final product!

Discussion of the types: First indications of advantages and disadvantages

Example #1: Type 5 corporate offsets

- Good global coverage
- Strong, top-down enforcement
- Comparability accross locations
- Perfect fit into business operations



- Restriction to a few global players
- No common standards
- No external verification



Example #2: Type 6 local offsets

- High context sensitivity
- Suitable also for small scale projects
- Balancing of stakeholders and their interests

- Time consuming
- No common standards
- Case specific, not transferable
- More difficult to integrate into business operations

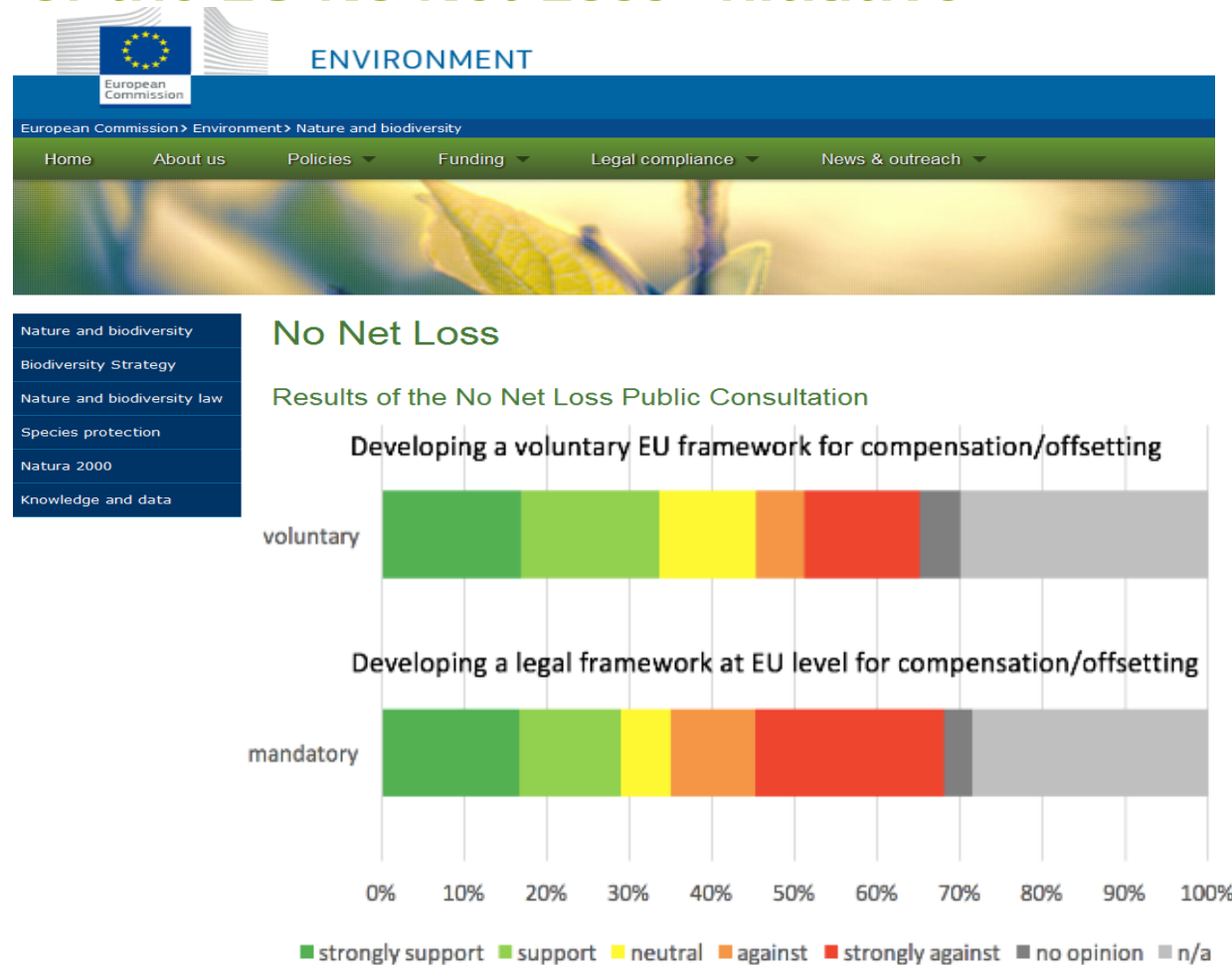
Application – What can the typology be used for?

The example of the EU No Net Loss Initiative

“an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting) by 2015” (*European Biodiversity Strategy until 2020*)

2015 public consultation

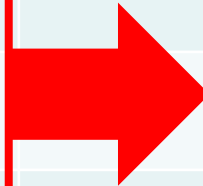
→ Initiative postponed



(Source: author's own, after European Commission 2015)

Application – Clarify roles and responsibilities of actors

Actors types	Governments	NGOs	Actors types	governments
1. regulatory offsets			1. regulatory offsets	Regulator, enforcing authority
2. conditional offsets			2. conditional offsets	Cooperation and mediation at national/local level, Foster and reinforce context sensitive implementation
3. enabled offsets			3. enabled offsets	Enabling pilot schemes or incentives, guidance
4. sectoral offsets			4. sectoral offsets	Cooperation and mediation at national/local level, Foster and reinforce context sensitive implementation
5. corporate offsets			5. corporate offsets	Cooperation and mediation at national/local level, Foster and reinforce context sensitive implementation
6. local offsets			6. local offsets	Structuring governance processes (bottom up)
7. Altruistic offsets			7. Altruistic offsets	-
Cross-cutting issues			Cross-cutting issues	Provide baseline data, set strategic nature conservation goals, landscape planning



Key messages and lessons learnt

Challenges

→ **Biodiversity offsets require:**

Growing variety

→ **Differentiation**

- describe the variety of biodiversity offsets
- explain motivations

Growing controversy

→ **Transparency**

- foster an informed debate on biodiversity offsets
- based on practical evidence

Complexity and
context dependency

→ **Context sensitivity**

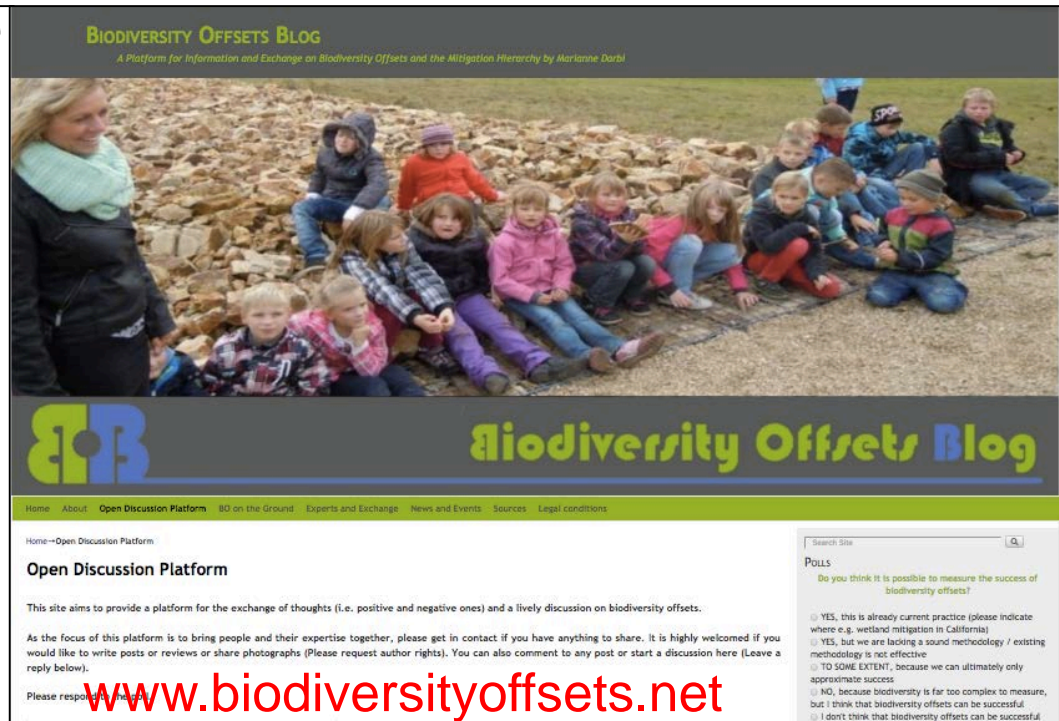
- Inform context sensitive decision-making in policy & practice
- Clarify the roles and responsibilities of actors under different contexts
- Enable context specific evaluation of the outcomes and efficiency of biodiversity offsets

Thank you for your attention!

Discussion: Questions? Comments?



today



ongoing

Spare material

Background: Ongoing drastic loss of biodiversity negatively affects human wellbeing

Mid-term review of the EU biodiversity strategy to 2020

EU assessment of progress towards the targets and actions

EU Biodiversity Targets (2020)

Progress at mid-term (2015)

2020 Headline Target

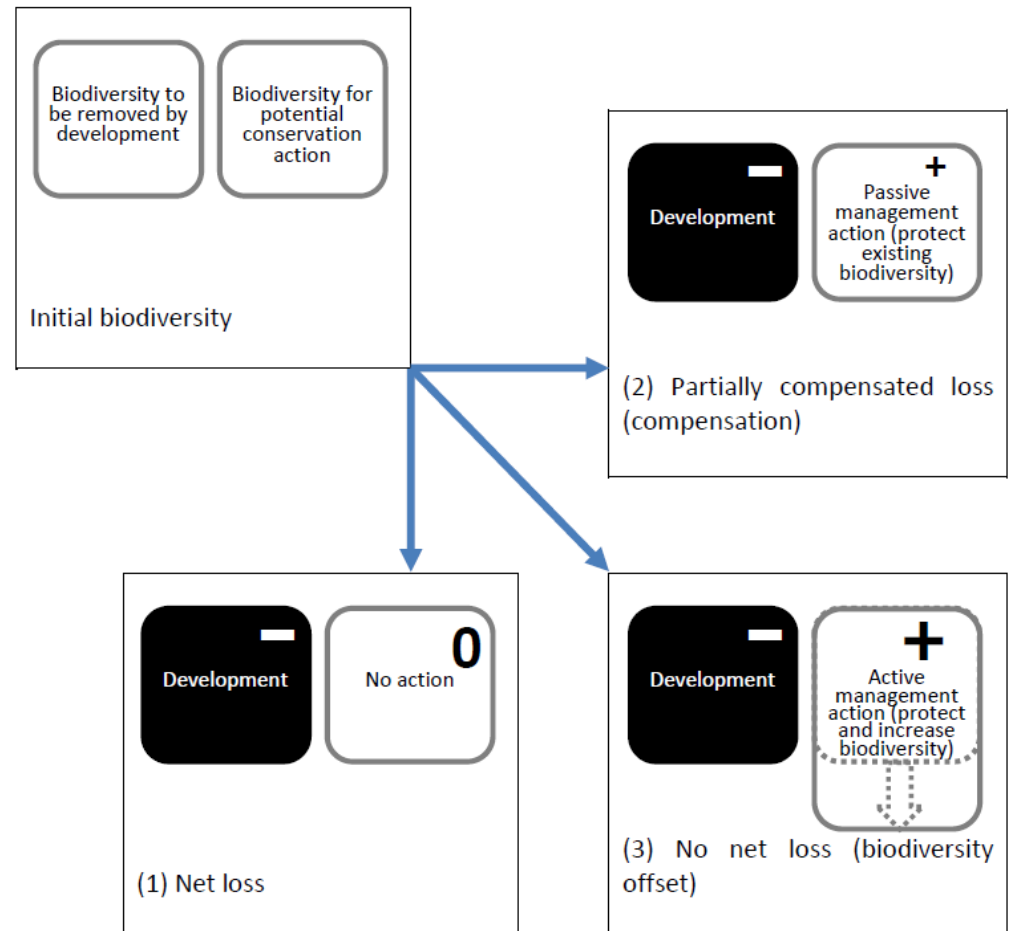
Halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.

**Business as usual
is not an option!
We need new tools!**

Introduction to the context for biodiversity offsets: from biodiversity loss to no net loss of biodiversity

In the light of ongoing biodiversity loss there is an increasing need for restoration based activities to complement conventional nature conservation activities. Building on this premise, the paradigm of “no net loss” has risen to prominence in a worldwide context and has particularly been introduced to EU policy. In this scope, biodiversity offsets are increasingly explored and promoted to reach the no net loss goal.

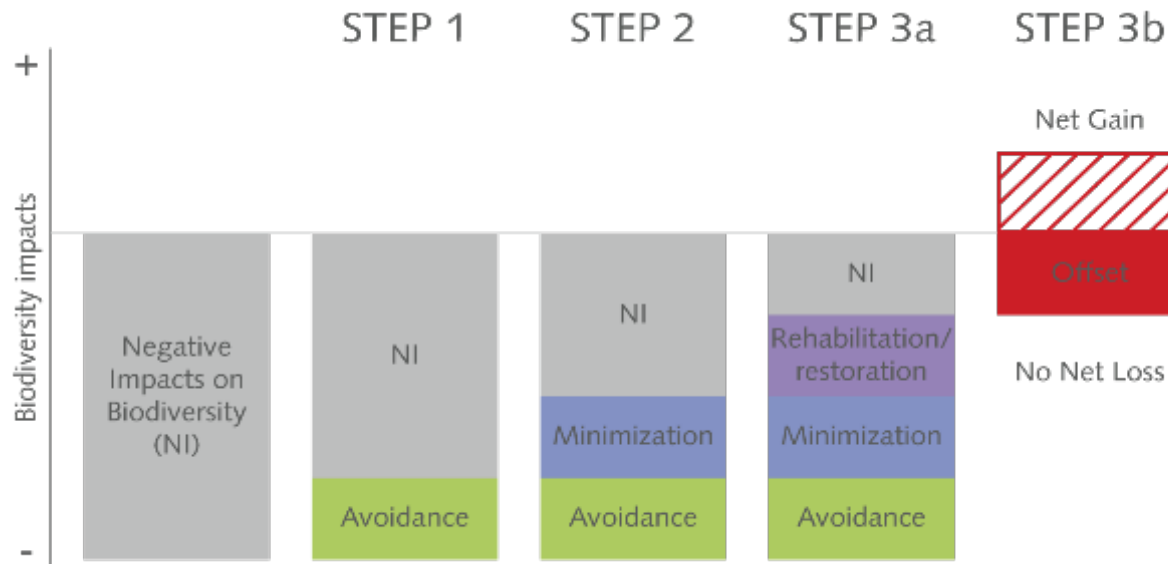
Biodiversity offsets are a tool for compensation for environmental impacts rooted in compensation schemes under the environmental legislation of countries like the US, Germany, Brazil and Australia.



Biodiversity offsets as part of the mitigation hierarchy

Biodiversity Offsets are defined as “measurable conservation outcomes” that are designed to counterbalance the unavoidable “significant residual adverse biodiversity impacts” on the environment from projects or development (BBOP 2012a).

Biodiversity offsets are the last step of a sequence, called the “mitigation hierarchy” (see Figure).



State of the Art

Antecedents of biodiversity offsets:

- Rooted in numerous compensation approaches in a number of countries
- Starting in the early 2000s new trend towards the promotion of voluntary biodiversity offsets
- Fostered by the Business and Biodiversity Offsets Program (BBOP) and pilot projects (e.g. in the UK)

Argentina:	EIA, Environmental Compensation Fund
Australia:	Native Vegetation Offset Programs in Victoria, New South Wales and Western Australia, Biodiversity Banking and Offsets Scheme in NSW, BushTender Program and BushBroker System in Victoria
Brazil:	Forest offsets, Project offsets and Conservation Units,
China:	Eco-compensation (in discussion), pilot projects (road planning, land consolidation, hydropower)
Egypt:	EIA/ESIA, sectoral guidelines for major projects
France:	doctrine ERC, habitat banking pilots
Germany:	Impact Mitigation Regulation
India:	Biological Diversity Rule, Mitigation Schemes and Wetland Mitigation Schemes (under development)
Madagascar:	sectoral EIA guidelines for major projects, MEC for existing companies
Mexico:	EIA, Program for Environmental Justice
South Africa:	EIA, Guidelines for Biodiversity
South Korea:	Substitute Habitats for Dams, Wetland Mitigation Banking (in discussion), Pilot Projects on Impact Mitigation Regulation
United States:	Wetland Mitigation , Species Banking

Selected compensation approaches worldwide

Source: modified after Darbi et al. 2010

State of the Art: Biodiversity Offsets in research

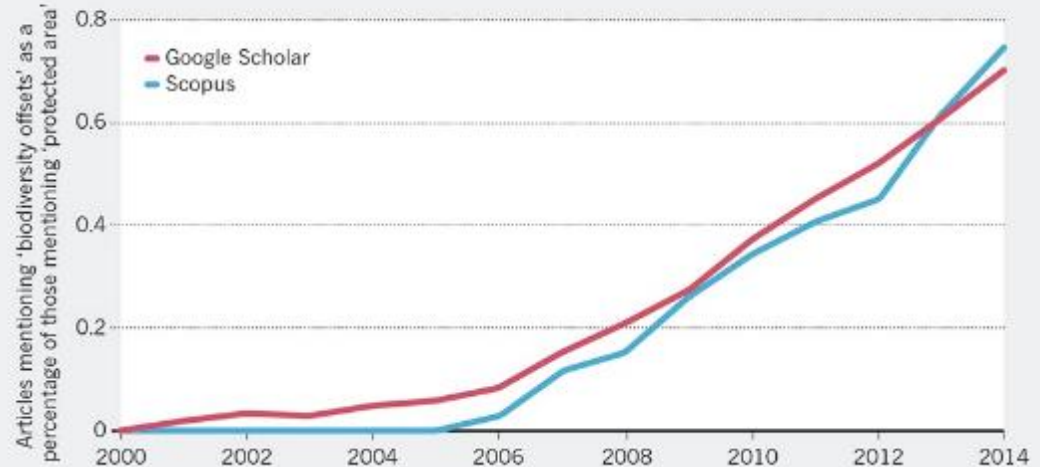
Grey literature → scholarly literature

Theoretical challenges :

- No Net Loss vs. Net Gain
- Counterfactuals / frames of reference
- Currency
- Equivalence
- Longevity
- Time lag
- Uncertainty
- ...

ALL THE RAGE

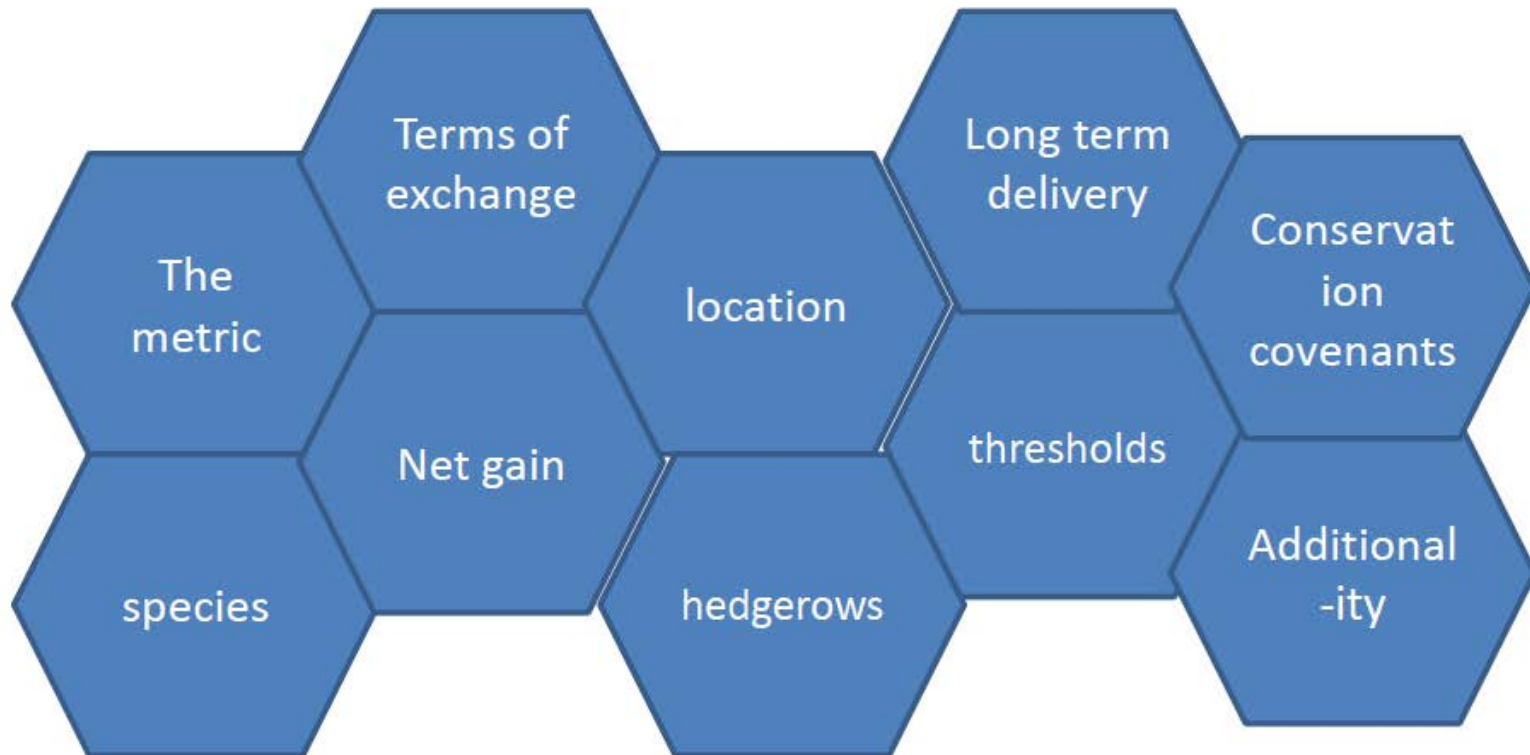
In the past decade, the concept of biodiversity offsetting has gained popularity with businesses and governments, indicated by growing use of the term in the scholarly literature.



Growing use of the term “biodiversity offsets” in the scholarly literature

Source: Maron et al. 2015a (Data Source: Google Scholar/Scopus)

State of the Art: Biodiversity Offsets in research



Research hypotheses

1. Differences exist regarding the voluntariness of biodiversity offsets.
2. Biodiversity offsets cannot be adequately explained as a dichotomy of mandatory vs. voluntary offsets.
3. The voluntariness of biodiversity offsets can be described as a gradual continuum.
4. A typology of biodiversity offsets (and different types) can be build to analyse and illustrate the space between the two poles of this continuum.
5. These types help to analyse and understand the different outcomes of biodiversity offsets.

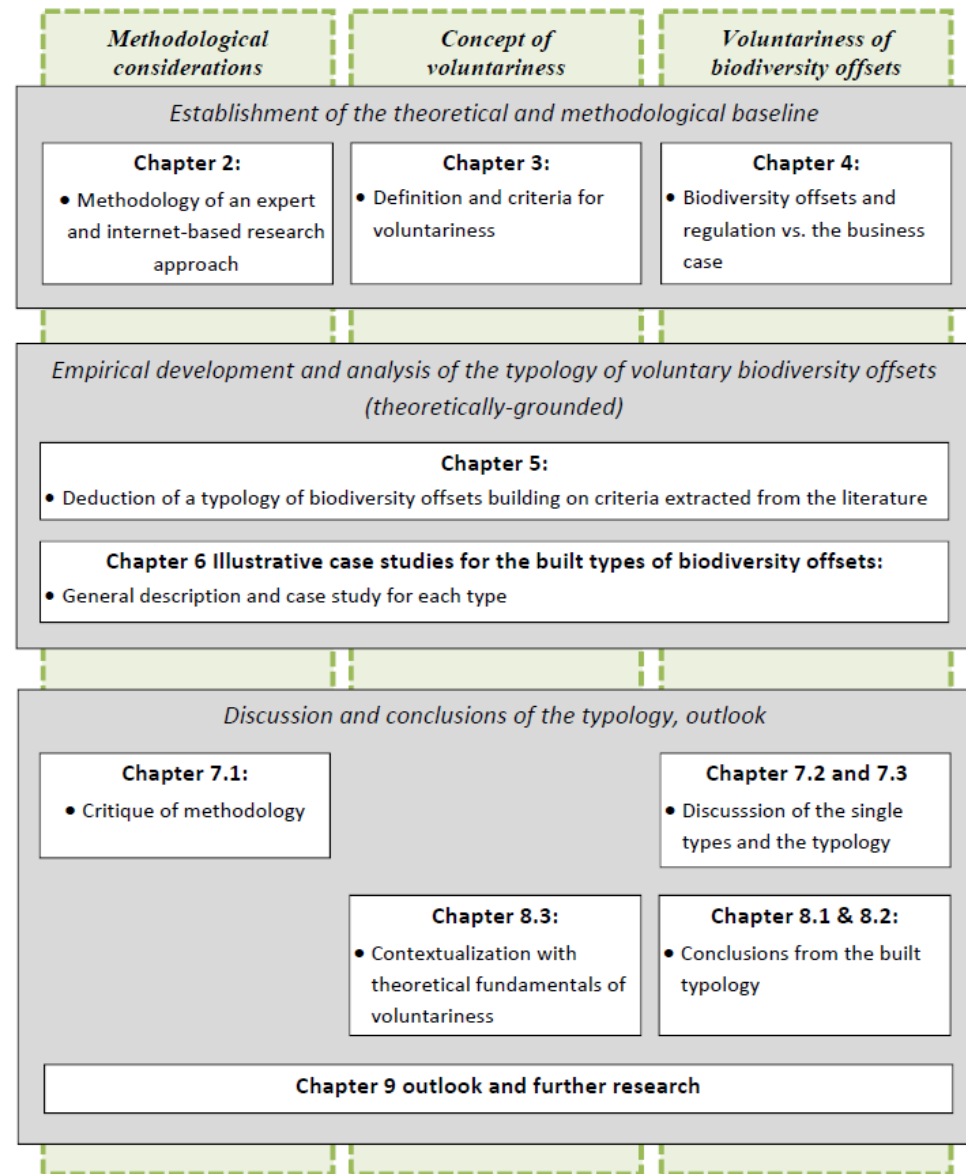
Research design and structure

In the research question three issues are highlighted:

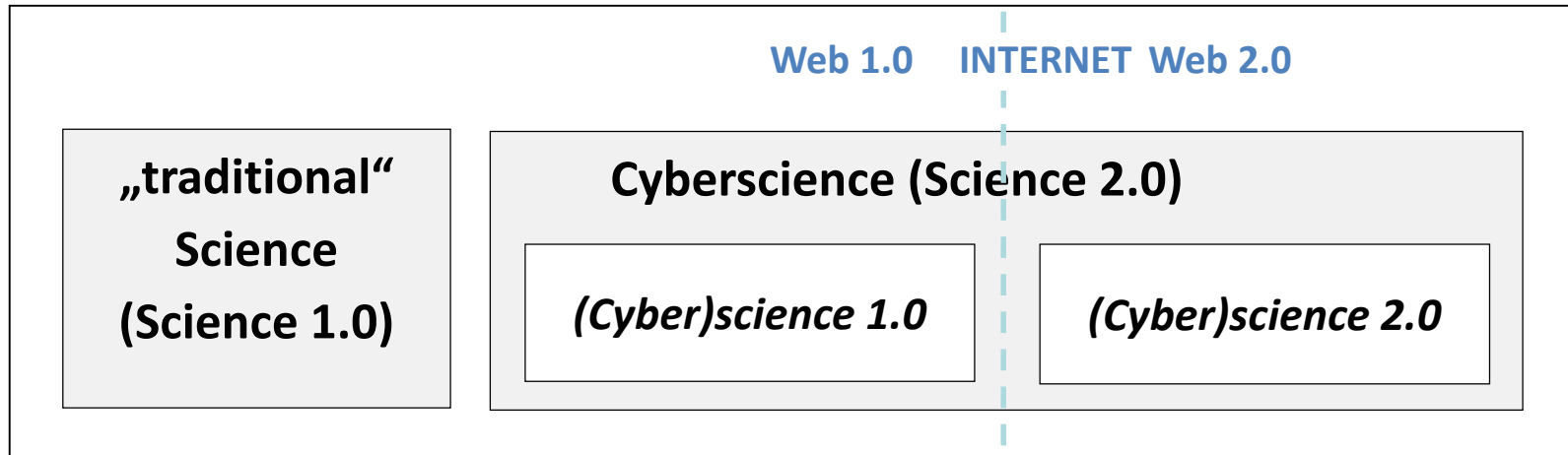
- Biodiversity offsets
- Voluntariness
- Methodological considerations: including
 - 1) an internet and expert based research approach and
 - 2) typification

These research issues pass through three methodological complexes:

- Establishment of the theoretical and methodological baseline
- Empirical development and analysis of the typology of voluntary biodiversity offsets (theoretically-grounded)
- Discussion and conclusions of the typology, outlook



Cyberscience



Cyberscience in the age of the internet
Source: author's own

Science 2.0 and the Web 2.0

--- Current methods ---

Form hypothesis

Gather data privately; test

Write journal article

Submit for review

Peer-review gatekeepers?

Publish

Reject

Information available to public

--- Emerging methods ---

Form hypothesis

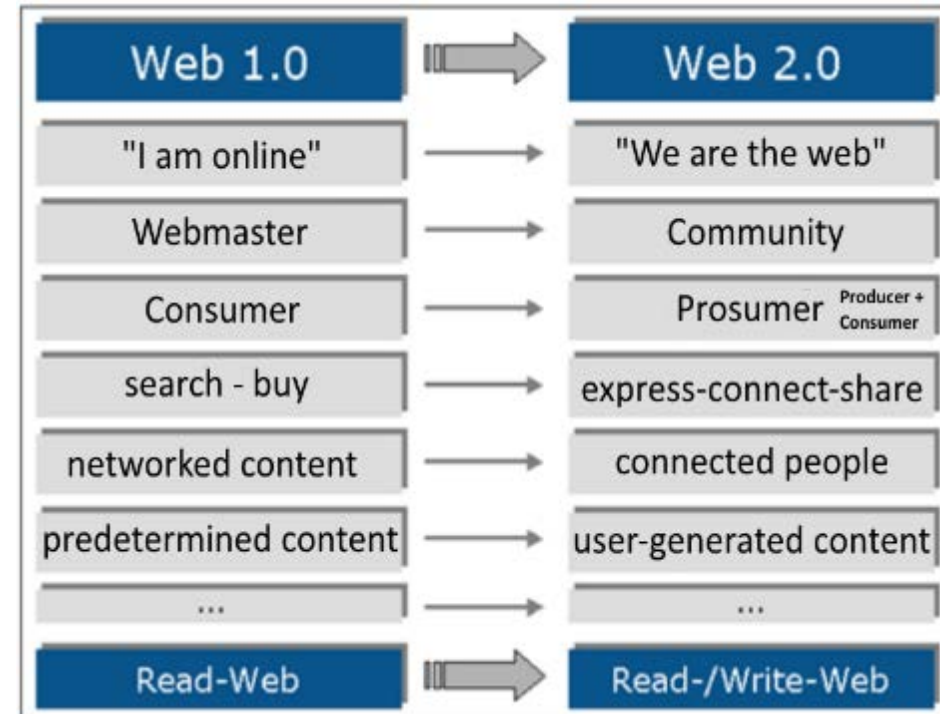
Share ideas, methods, data with other scientists online via blogs, video journals, social networks, and other methods

Test, perform experiments

Share findings online in preliminary form

Publish in blogs, wikis, as well as journals

Information available to the public and to other scientists as it is being developed and tested; data available too



Current and emerging methods in science
Source: Tomwsulcer 2012

Development from Web 1.0 to Web 2.0
source: Müller and Schumann n.d.

Definition of key terms

Voluntariness:

- characterizes the **nature of the motivation for an action**, i.e. the degree an action is externally or internally induced. (*Ammann 2004, Gutmann 2000, Wolf 1740*)
- is a normative concept shaped by **context** (*Priller 2008, Putnam 2000, Flatmann 1992*)

Altruism:

- refers to a motivational state with the **ultimate goal of increasing another's welfare / public welfare**. (*Batson 2014, Liebe, Preisendörfer & Meyerhoff 2011*)

Combination of attributes and substruction of the underlying attribute space

Which of the criteria are suited to construct the underlying attribute space from?

→ Containment/reduction through a process of elimination

- **Rejected criteria:** Causality, Free choice, Scope or distance of voluntary action, Know-how/ professionalism, Taking over Responsibility, Ethics
- **Threshold criteria:** intentionality, additionality
- **Performance criteria:** flexibility, cost efficiency
- **Quality criteria** (relative to the quality of an offset): charitableness, outcome and effectiveness

Remaining core criteria:

- Context → descriptive criterion (cannot be qualified by different values)
- Influence and initiators
- Choice, eligibility and alternatives → secondary criterion to influence and initiators
- Motivation → group together motivation and ultimate goal
- Ultimate goal → group together motivation and ultimate goal
- Recompense or benefit → secondary criterion to motivation and ultimate goal

A combination of two suitable criteria remains:

1. Influence and initiators and 2. Motivation and ultimate goal

Results: conceptual framework – 7 types

1. **Regulatory offsets:** required by law and enforced
2. **Conditional offsets:** required by financial institutions e.g. WB, IFC
3. **Enabled offsets:**
 - a) fostered by governments through pilot schemes, guidance etc.
 - b) initiated by new global norms e.g. by BBOP or IUCN
4. **Sectoral offsets:** taking part in a voluntary self-commitment of a sector (e.g mining)
5. **Corporate offsets:** resulting from a voluntary self-commitment of a corporation
6. **Local offsets:** single offsets, developed at local level in a consensual process
 - a) Reputational risk
 - b) License to operate
7. **Altruistic offsets:** driven by the altruistic motivation towards public welfare (truly voluntary)

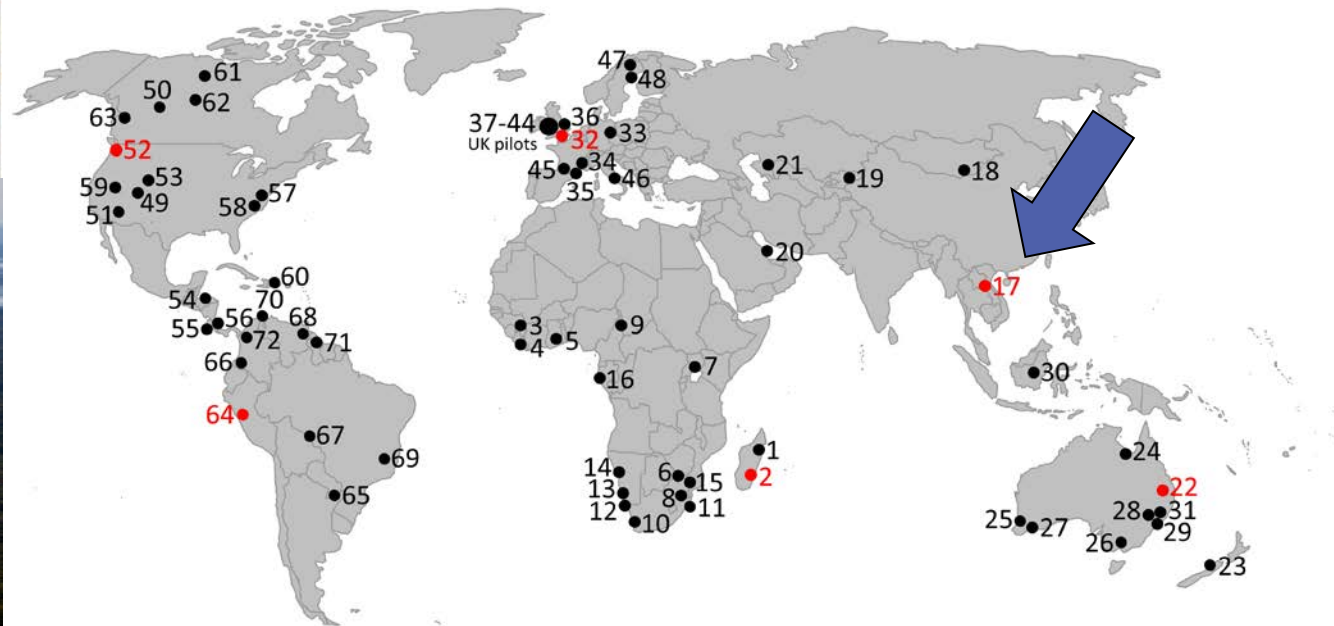
motivation and ultimate goal influence and initiators	Pressure (compliance)	Incentive (cost-benefit)	Altruism / responsibility
Government	Case 1 (regulatory)	Case 3a (enabled: government)	
Financial institute	Case 2 (conditional)		
Sector	Case 4 (sectoral)		
Corporation	Case 5 (corporate)		
Local community	Case 6a (local: reputational risk)	Case 6b (local: license to operate)	
NGOs		Case 3b (enabled: new global norms)	
Without major influence			Case 7 (pure altruism)

Illustrative case studies



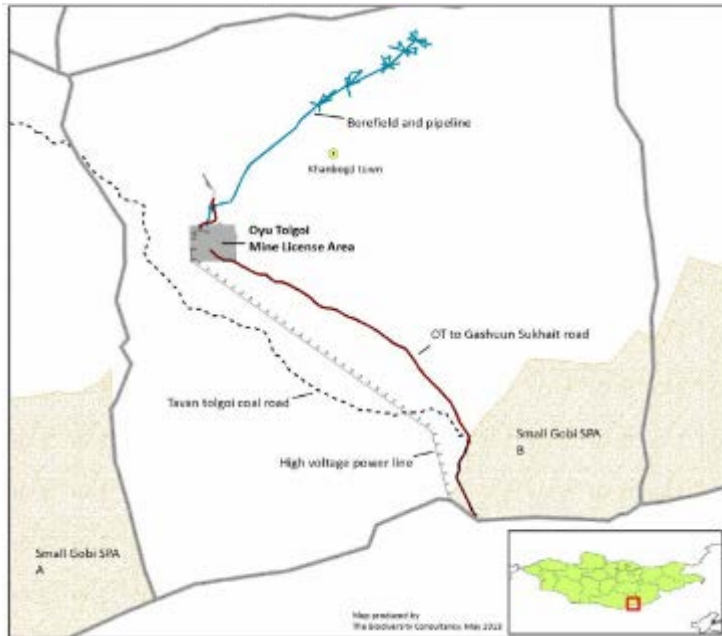
7 illustrative case studies (one for each type):

→ e.g. case study for conditional offsets – Nam Theun 2 Hydropower project in Laos



Illustrative case studies: 2. conditional offsets

- 1. General description:** leading lending financial institutions (WB, IFC, EBRD) increasingly define conditions for financing large development projects (infrastructure, mining etc.) → **IFC PS6**
- 2. Case study: Oyu Tolgoi, Mongolia** (huge copper/gold mine operated by Rio Tinto in southern Gobi)
- 3. SWOT analysis**



Source: Oyu Tolgoi, <http://ot.mn/environmental-social-impact-assessment/> and <http://www.thebiodiversityconsultancy.com/projects/globalbiodiversityconservation/>

Illustrative case studies: 2. conditional offsets

Criteria group	Criteria	Description
Threshold criteria	intentionality	yes , no (overcompliance)
	additionality	yes , no
Core criteria	influence and initiators	IFC PS6, Rio Tinto's corporate biodiversity strategy
	<i>choice</i>	increased, neutral, reduced , highly reduced
	Motivation	pressure, incentive , altruism
	ultimate goal	compliance , additional benefit, gain acceptance
	<i>benefit</i>	potential for becoming a developer of choice, including access to land / resources and a seat at the policy table
Context criteria	legislation	integration of the offset strategy with national/regional government policies for natural resource management and nature conservation
	Competitive environment	Private sector development is impeded by a "harsh climate, small domestic market, human resource constraints, infrastructure bottlenecks, corruption, legal inadequacies, weak contract enforcement, and poor capital markets"
	Cultural and social context	"undermined living standards and hampered growth"
Quality criteria	Charitableness / public good	aiming for Net Positive Impact
	Outcome and effectiveness	At a high-level PS6 and BBOP Principles can be met, but some of the details are more challenging.
Performance criteria	flexibility	<i>to be further evaluated</i>
	Cost efficiency	<i>to be further evaluated</i>

Results: Discussion of the typology

Magnitude, location and particularities of the types

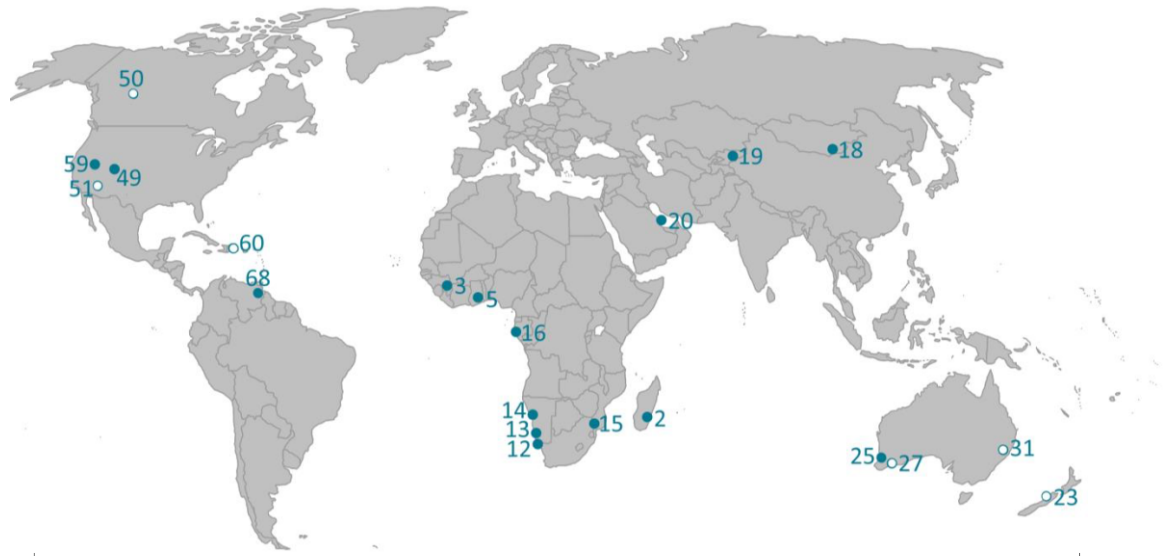
Differences between the types:

- Scale of development impacts
- Sectors/developments addressed
- Governance of the implementation

Similarities and overlap between the types

Limitations of the typology:

- Temporal aspects of biodiversity offsets
- Demand and supply side for biodiversity offsets



Africa

- 2. QIT Mining Madagascar
- 3. Simandou
- 5. BBOP Pilot Akyem Gold Mine
- 12. De Beers Marine Kleinsee and Alexander Bay Sea Areas
- 13. Namdeb Diamond Corporation
- 14. Rossing Uranium Mine
- 15. Palabora
- 16. Shell Foundation offset on Gamba Complex

Asia

- 18. Oyu Tolgoi LLC
- 19. Kumtor Gold Mine
- 20. PEARL GTL QATAR BBOP Pilot

Australia

- 23. Strongman Coal BBOP Pilot
- 25. Newmont Boddington mine
- 27. Ravensthorpe Nickel Project
- 31. Warkworth Coal Mine

Europe

-

North- & Central America

- 49. Kennecott Utah Copper Mine
- 50. Suncor Biodiversity Offset
- 51. Resolution Copper Mining Project
- 59. Newmont Long Canyon Project
- 60. Pueblo Viejo gold mine expansion

South America

- 68. Brisas Gold & Copper Project

Type 5 corporate offsets: map of attributed cases from the worldwide screening

Critique of methodology

Appropriateness of the research methodology:

1. Did the internet- and expert-based research approach prove to be applicable and deliver appropriate results?
2. What are the main strengths and constraints?
3. Do alternative approaches exist to reach the envisaged goal?

Mixed types – the limits of typification to represent real world examples

Difficulties of comparability and clear classification of offsets

1. What counts as an offset?
2. Global differences in offsets

Discussion of the research hypotheses

Hypotheses:

1. Differences exist regarding the voluntariness of biodiversity offsets.
2. Biodiversity offsets cannot be adequately explained as a dichotomy of mandatory vs. voluntary offsets.
3. The voluntariness of biodiversity offsets can be described as a gradual continuum.
4. A typology of biodiversity offsets (and different types) can be build to analyse and illustrate the space between the two poles of this continuum.
5. These types help to analyse and understand the different outcomes of biodiversity offsets.

→ Confirmed

→ Confirmed

→ Refuted: Voluntariness builds on the intersection of several qualitative criteria → a hierarchical sequence from mandatory to voluntary can only be constructed normatively & no universal ranking can be derived

→ Confirmed

→ Partially confirmed (not the focus of this study)

Application– what can the typology be used for?

Summarizing, the typology of (voluntary) biodiversity offsets contributes to:

- Increase transparency
- Structure and differentiate
- Take into consideration different contexts, drivers and motivations
- Enable to build a broader evidence base (through methods and tools)
- Provide a first number of (72) cases (thereof six described in more detail) as part of this evidence base.
- Foster an informed debate on biodiversity offsets building on specifications, context and evidence
- Set the prerequisite for the evaluation of the outcome of biodiversity offsets both regarding procedural aspects (governance, efficiency etc.) and added nature conservation value (effectiveness, additionality, achievement of the goal of no net loss/net gain)
- Clarify the role of different stakeholders, e.g. a more sophisticated understanding of the role of government that goes beyond the conventional understanding in terms of regulator and enforcing authority

Trends: which of the offset types are promising?

Offset regulation:
1. regulatory offsets

Cooperative approaches:
3. enabled offsets

Corporate responsibility:
5. corporate offsets

Lender requirements:
2. conditional offsets

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FAUNA & FLORA INTERNATIONAL, WITH SUPPORT FROM KUMTOR OPERATING COMPANY, STRIVES TO CONSERVE THE BIODIVERSITY OF ONE OF THE LARGEST AND MOST UNIQUE NATURE RESERVES IN KYRGYZSTAN



Fauna & Flora International (FFI), a leading international conservation organization, and Kumtor Operating Company have launched a biodiversity project in Issyk-Kul province of the Kyrgyz Republic. The Memorandum of Understanding providing the framework for cooperation between FFI and Kumtor was signed in Bishkek in November 2012.



Forecasting the path towards a Net Positive Impact on biodiversity for Rio Tinto QMM

H. J. Temple, S. Anstee, J. Ekstrom, J. D. Pilgrim, J. Rabenantoandro, J.-B. Ramanamanjato, F. Randriatafika and M. Vincellette.

IUCN and Rio Tinto Technical Series No. 2



Performance Standard 6
Biodiversity Conservation and Sustainable Management of Living Natural Resources

January 1, 2012

Introduction

- Performance Standard 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The requirements set out in this Performance Standard have been guided by the Convention on Biological Diversity, which defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems."
- Ecosystem services are the benefits that people, including businesses, derive from ecosystems. Ecosystem services are organized into four types: (i) provisioning services, which are the products people obtain from ecosystems; (ii) regulating services, which are the benefits people obtain from the regulation of ecosystem processes; (iii) cultural services, which are the nonmaterial benefits people obtain from ecosystems; and (iv) supporting services, which are the natural processes that maintain the other services.¹
- Ecosystem services valued by humans are often underpinned by biodiversity. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. This Performance Standard addresses how clients can sustainably manage and mitigate impacts on biodiversity and ecosystem services throughout the project's lifecycle.

Objectives

- To protect and conserve biodiversity.
- To maintain the benefits from ecosystem services.
- To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

Scope of Application

- The applicability of this Performance Standard is established during the environmental and social risks and impacts identification process. The implementation of the actions necessary to meet the requirements of this Performance Standard is managed through the client's Environmental and Social Management System (ESMS), the elements of which are outlined in Performance Standard 1.
- Based on the risks and impacts identification process, the requirements of this Performance Standard are applied to projects (i) located in modified, natural, and critical habitats; (ii) that potentially impact on or are dependent on ecosystem services over which the client has direct management control or significant influence; or (iii) that include the production of living natural resources (e.g., agriculture, animal husbandry, fisheries, forestry).

¹ Examples are as follows: (i) provisioning services may include food, freshwater, timber, fibers, medicinal plants; (ii) regulating services may include surface water purification, carbon storage and sequestration, climate regulation, protection from natural hazards; (iii) cultural services may include natural areas that are sacred sites and areas of importance for recreation and aesthetic enjoyment; and (iv) supporting services may include soil formation, nutrient cycling, primary production.

Results III: Discussion of the typology

Magnitude, location and particularities of the types

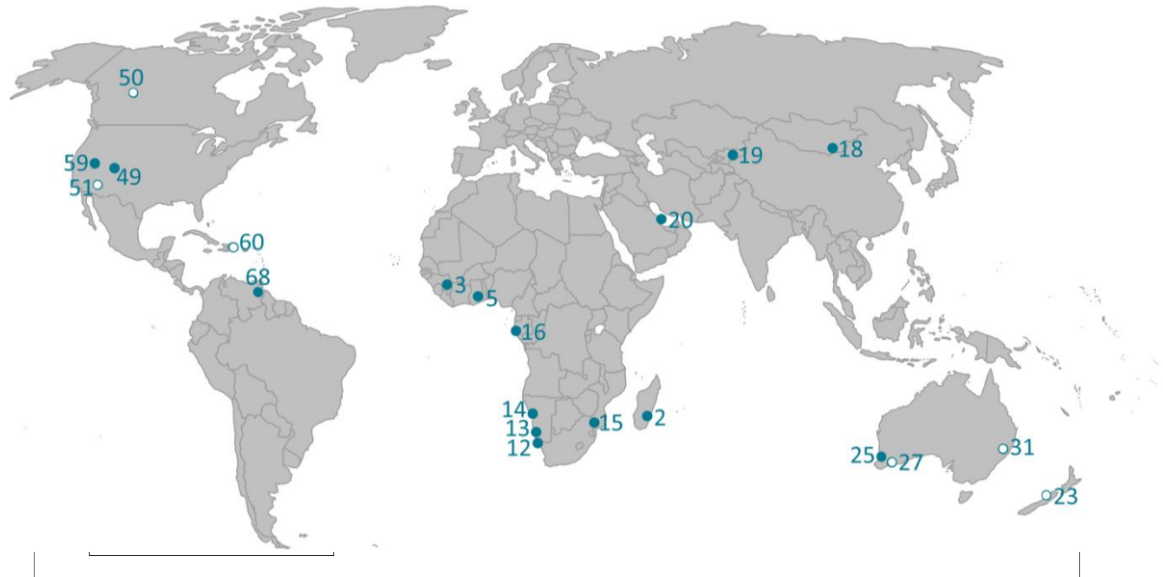
Differences between the types

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Similarities and overlap between the types

Limitations of the typology

1. Temporal aspects of biodiversity offsets
2. Demand and supply side for biodiversity offsets

Type Sectors	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	TOTAL
Mining	7 (8, 24, 27, 31, 36, 49, 72)	5 (4, 18, 60, 68,72)	4 (1, 5, 23, 30)	-	12 (2, 5, 12, 13, 14, 15, 18, 19, 25, 49, 59, 68)	3 (6, 51, 70)	3 (47, 64, 69)	34
oil and gas	4 (61, 62, 63, 67)	1 (9)	3 (20, 21, 53)	-	2 (16, 20)	-	1 (50)	11
Infrastructure	4 (28, 34, 45, 48)	2 (54, 66)	-	-	-	1 (32)	-	7
Housing/real estate	3 (10, 22, 29)	-	9 (37-44, 52)	-	-	2 (52,56)	-	14
Hydropower	-	4 (7, 17, 55, 65)	1 (71)	-	-	-	-	5
Energy	3 (26, 33, 46)	-	-	-	-	-	-	3
Other industry	1 (1)	-	-	-	-	-	-	1
n/a	2 (57, 58)	-	-	-	-	-	-	2

Type 5 corporate offsets: map of attributed cases from the worldwide screening

Results III: Discussion of the typology

Magnitude, location and particularities of the types

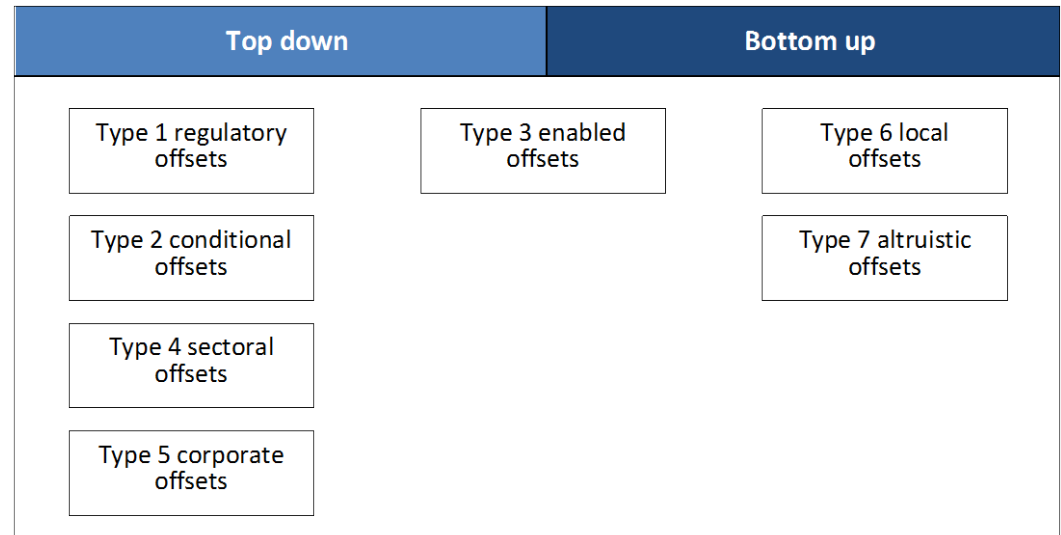
Differences between the types

1. Scale of development impacts
2. Sectors/developments addressed
3. Governance of the implementation

Similarities and overlap between the types

Limitations of the typology

1. Temporal aspects of biodiversity offsets
2. Demand and supply side for biodiversity offsets



Type 5 corporate offsets: map of attributed cases from the worldwide screening

Key messages and lessons learnt

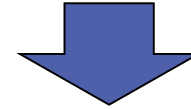
Growing variety



Differentiation

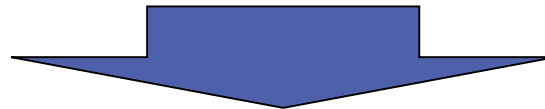
The typology helps to describe the variety of biodiversity offsets and to explain motivations.

Growing controversy



Transparency

The typology fosters an informed debate on biodiversity offsets based on a conceptual framework and practical evidence.



Biodiversity offsets are complex and highly context dependent

- Inform context sensitive decision-making in policy and practice
- Clarify the roles and responsibilities of actors under different contexts
- Enable context specific evaluation of the outcomes and efficiency of biodiversity offsets

Theory

Practice

Outlook and further research

1. Appropriateness



Do you think that Biodiversity Offsets in practice "do something good" for the environment, i.e. help to stop biodiversity loss?

YES (36%, 38 Votes)



Under Certain Conditions (46%, 49 Votes)



NO (19%, 20 Votes)



Total Voters: 107

Do you think that Biodiversity Offsets as a theoretical concept "do something good" for the environment, i.e. help to stop biodiversity loss?

YES (47%, 38 Votes)



Under Certain Conditions (38%, 31 Votes)



NO (15%, 12 Votes)



Total Voters: 81

Survey on the Biodiversity Offsets Blog (Source: author's own)

Outlook and further research

1. Appropriateness
2. Empirical base

International Programs and Banks

Speciesbanking.com initially focused on conservation banking of endangered species in the United States. As initiatives have developed in other countries, we have expanded our coverage to include these programs and provide insights for all involved. SpeciesBanking.com provides international information at two levels: at the [Program](#) level and at the level of individual biodiversity [Banks](#).

- [Program](#) indicates any law, policy or program that drives biodiversity offsetting, compensation or offset banking for impacts to biodiversity.
- [Bank](#) indicates a site, or suite of sites, where biodiversity is restored, established, enhanced and/or preserved for the purpose generating certified credits that may be sold for compensatory mitigation for impacts to biodiversity.

Find a Program

search

Find a Bank

search

Offset and Compensation Programs (📍) and Banks (📍) by Region



Offset and Compensation Programs and Banks by Region

Source: Screenshot from www.speciesbanking.com

Outlook and further research

1. Appropriateness
2. Empirical base
3. Evaluation



SWOT analysis as an evaluation tool (Source: Dahp 2015)