Biodiversity certificates: Risks and opportunities

MUSÉUM NAL HIST NATURELLE

carbone4

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Table of contents

Executive summary

Certificates for biodiversity

As reminded by the IPBES reports, urgent action is needed to reverse the decline in biodiversity. **The global framework that emerged from COP15 in Kunming-Montreal sets global objectives for this action.** To achieve them, we will need to mobilise funding. This is the content of target 19, which calls for "a significant and progressive increase in financial resources [...] including private resources". It explicitly mentions the promotion of "innovative schemes", including "biodiversity credits".

Businesses, financial institutions, and public authorities have an important role to play in achieving these objectives. In line with the emergency underlined by the IPBES and the rising expectations of their stakeholders, the issue of biodiversity is becoming increasingly important for these organisations. They are looking for tools to implement their contribution to global objectives, and **biodiversity certificates/credits may be part of the solution.** They can be used, for example, as part of CSR strategies, for sustainable finance, or for public policies to preserve biodiversity.

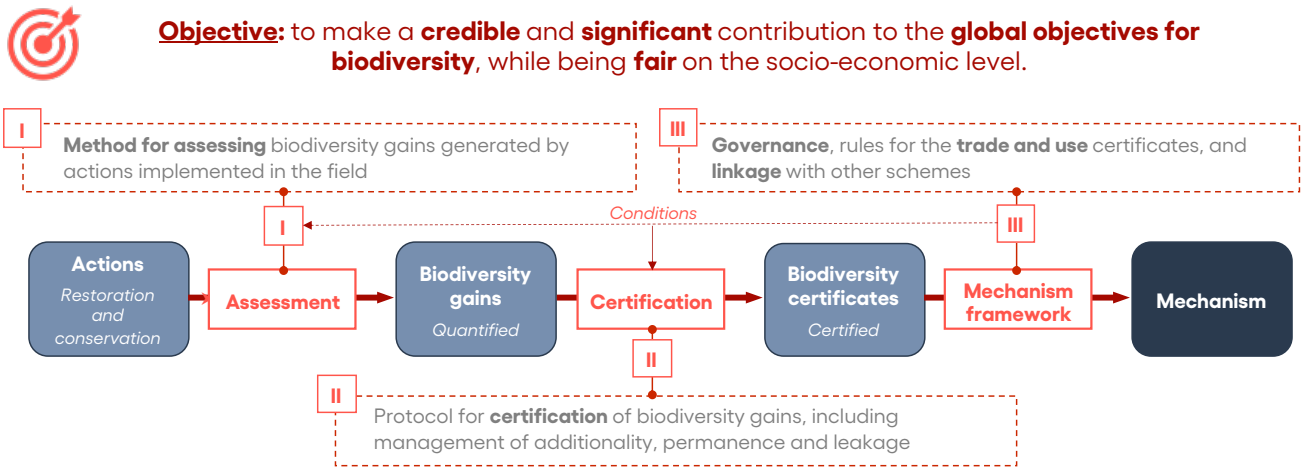
Certificates/credits are therefore associated with **major opportunities**, both for nature and for organisations. However, various observers, particularly from science and NGOs, are warning of **the risks associated with their use.** In particular, they point out that it can generate harmful rebound effects for biodiversity, which could jeopardize the overall value of their contribution to global objectives.

The implementation and informed use of biodiversity certificates/credits requires in-depth knowledge of these two aspects. Risk analysis is essential to **avoid perverse effects and to design a mechanism that is genuinely favourable to biodiversity.** Analysis of the opportunities is essential to identify the potential and design a mechanism that attracts the interest of the various stakeholders. The aim of this document is to carry out this analysis of the risks and opportunities associated with biodiversity certificates/credits, based on the state of the art of the science and the expertise available.

Context

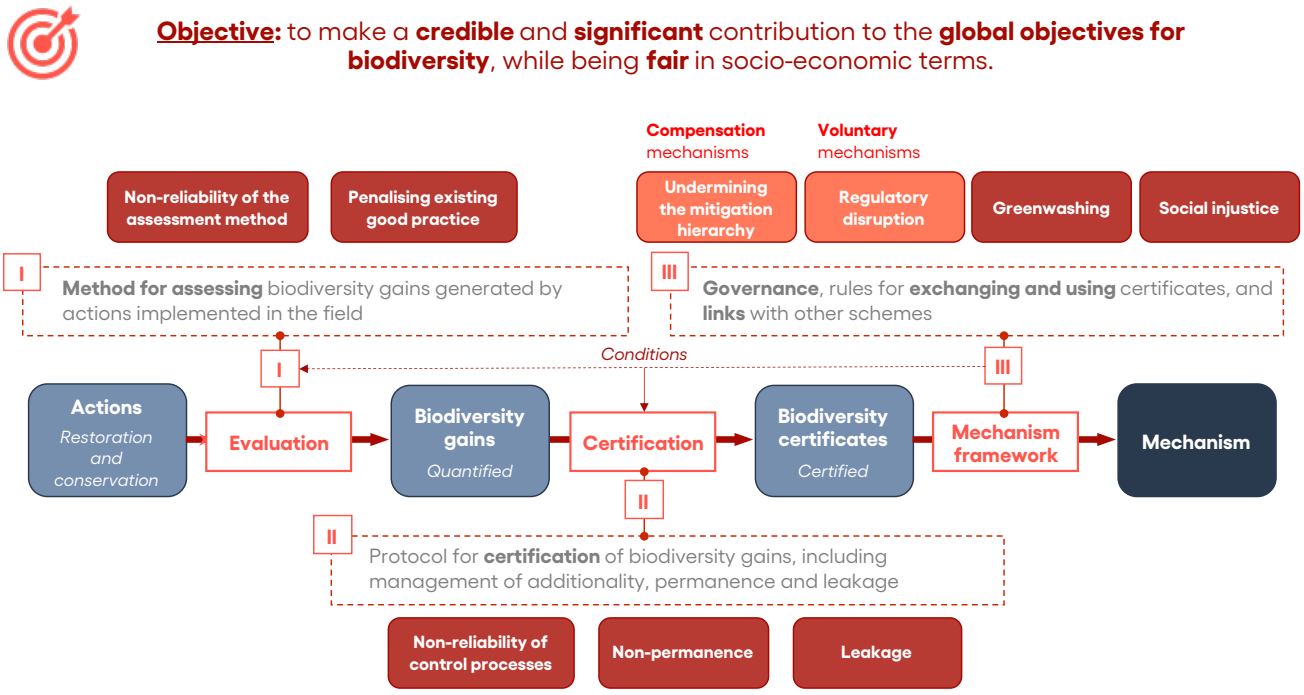
To cover all the issues, risks and opportunities, we consider these mechanisms **in the general sense:** voluntary or regulatory, compensation or contribution, for conservation and/or restoration. In the following, **we prefer the term "certificates" to "credits"** because the term "credit" is implicitly associated with an offset mechanism, whereas the term "certificate" is more general.

We also believe that the aim of a biodiversity certificate mechanism is to make a credible and significant contribution to the global objectives for biodiversity, while being **fair in socio-economic terms.**



Risk mapping

Nine categories of risk relating to the real value of certificates for biodiversity have been identified:



- **For compensation mechanisms; risk of undermining the mitigation hierarchy.** Compensation may be detrimental to mitigation efforts, as the possibility of "cancelling" impacts reduces the incentive to avoid and reduce them.

- **Risks of "greenwashing"**: communication about good practice concealing negative impacts generated elsewhere.

- **For voluntary mechanisms; risk of regulatory disruption:** that they may disrupt or delay the emergence of environmental regulations that meet the challenges, because the legislator considers that the market *"has things under control"*.

- **Risks relating to the evaluation of biodiversity gains:** biodiversity is a complex entity that is difficult to capture using a single metric**.** Risk that there are weaknesses in the evaluation and monitoring of biodiversity gains, linked in particular to i) the characteristics of the evaluation method ii) uncertainty about the reference scenarios iii) double accounting of biodiversity gains.

- **Risks relating to the reliability of control processes,** reinforced by conflicts of interest and inherent in the position of certifier.

- **Risk associated with the failure to promote existing good practice** and landscape features that are already conducive to biodiversity.

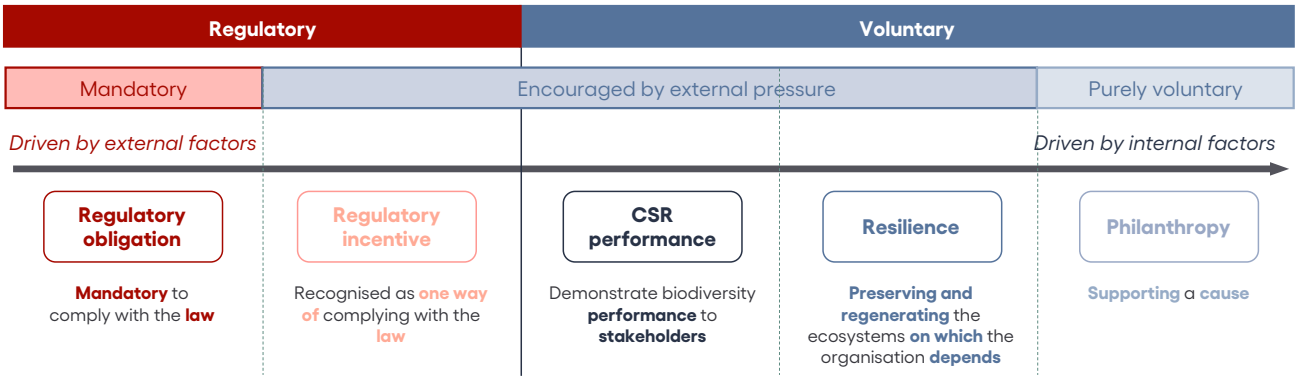
- **Risks associated with the non-permanence** of biodiversity gains.

- **Risks associated with the displacement of impacts** outside the certified area (leakage).

Analysis of supply and demand

To achieve its objectives, the mechanism must first guarantee the quality of the certificates. It must then **achieve a certain scale**, so that its contribution to the overall objectives is **"significant".** This scale will depend on supply and demand, which were analysed based on interviews and a review of independent publications.

Five main demand use cases, both regulatory and voluntary, have been identified. They are presented in the diagram below:



Most of the sources consulted consider that **demand will be the main limiting factor** for the scale of the mechanism. However, **the role of supply** should not be underestimated.

Drivers of supply

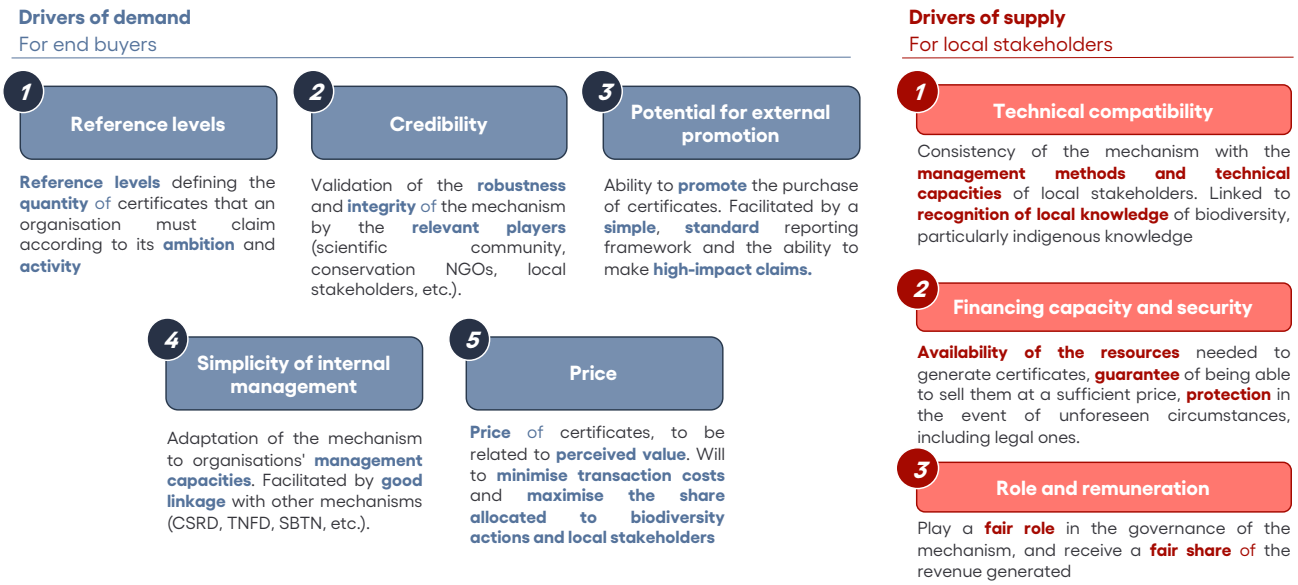
The main determinants of supply are linked to **the adaptation of the mechanism to the reality of local stakeholders.** In particular: its **compatibility with their issues and needs**, including taking account of local knowledge and understanding of biodiversity, **the involvement of local stakeholders** at the various levels of the mechanism, **the fair distribution of roles and revenues**, and **funding capacity and security.**

The involvement of intermediaries between local stakeholders and end buyers can catalyse supply and facilitate the link with demand. This is particularly true of project developers, who can provide the technical and financial capabilities that are essential to project development.

Drivers of demand

The **"regulatory"** demand will be determined mainly by **the characteristics of the regulations** from which it is derived.

"Voluntary" demand will depend mainly on the **reference levels** defined by the mechanism, its **credibility**, the **simplicity** of internal management, the **potential for external promotion** of the certificates and their **price**.



Discussion

Regulatory vs. Voluntary

Only a mandatory regulatory mechanism can truly guarantee a certain level of demand. However, the recent increase in the importance of CSR and biodiversity issues makes **voluntary demand a credible option**. However, without regulation, this demand will probably remain insignificant compared to the estimated financing needs for the preservation of biodiversity. The question of **the link between a voluntary mechanism and regulation** will therefore be crucial: it will have to be designed to **encourage the emergence of ambitious legislation**, and to **link up effectively** with existing systems.

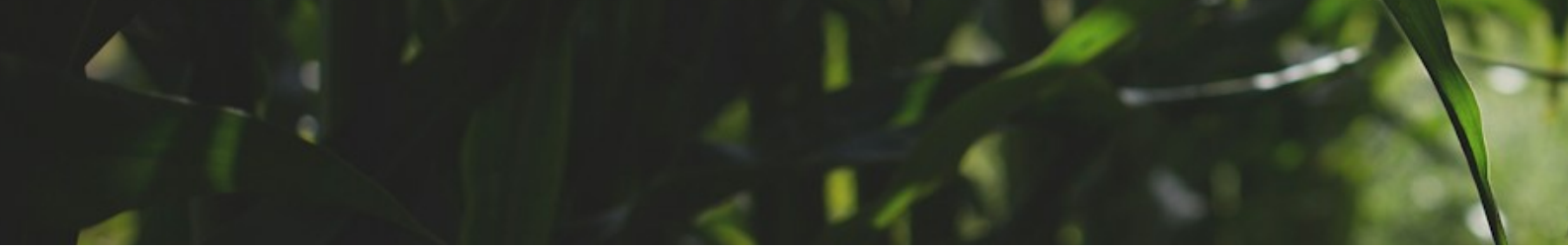
Compensation vs. Contribution

The concept of "biodiversity offsetting" raises many criticisms. In addition to those already raised for carbon offsetting, the essentially local nature of biodiversity and the absence of a reference metric make the issue even more delicate for biodiversity. **It seems difficult to rigorously define equivalences between "negative impacts" on the one hand, and "positive impacts" generated elsewhere:** restoration or conservation projects may generate "biodiversity gains", but it is difficult to demonstrate that they "cancel out" destruction.

This does not mean that regulatory biodiversity offsetting mechanisms cannot have beneficial effects. In some cases, a certain level of "biodiversity destruction" may be deemed socially desirable to achieve economic and social objectives. **If they are well designed, these mechanisms can make it possible to control and limit such destruction,** while also imposing **restoration obligations.**

On the other hand, **a "voluntary" offsetting mechanism cannot have a coercive effect on the reduction of negative impacts.** It would be more likely to create opportunity effects, where stakeholders would favour the purchase of credits over the reduction of impacts when this would be less costly. **Its real value for biodiversity would therefore be subject to significant risks.** Moreover, for the same reason, it would probably be the target of criticism, particularly from the scientific world and NGOs, which **would weaken the demand**.

It therefore seems preferable, when designing a biodiversity certificate mechanism, not to rely on the principle of voluntary offsetting. This is to guard against the risks mentioned, but also because this contested use case could **undermine the credibility of biodiversity certificates** in general, which nevertheless offer promising prospects.



Introduction

The Global Biodiversity Framework (or "GBF") resulting from COP15 proposes global tools and targets to address the loss of biodiversity and make economic and financial activities more sustainable. By "global goals" and "global framework", we mean the objectives resulting from the work of the IPBES and the Global Biodiversity Framework adopted at the 15th meeting of the Parties of the Convention on Biological Diversity in December 2022 (Kunming-Montreal COP15).

Target 19 of the global framework explicitly mentions the use of innovative schemes, including "biodiversity credits", to finance national biodiversity strategies, particularly by developing financial flows between countries in the North and countries in the South.

Target 14 also considers biodiversity credits/certificates implicitly, by requiring that financial and tax flows be compatible with biodiversity goals and targets.

Target 15 calls for legal, administrative or policy measures to encourage businesses to act for biodiversity, in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to businesses and financial institutions, and promote actions to ensure sustainable patterns of production.

In particular by ensuring that they:

i. regularly monitor, assess and transparently disclose their risks, dependencies and impacts on biodiversity
ii. Provide information needed to consumers to promote sustainable consumption patterns
iii. Report on compliance with access and benefit-sharing regulation and measures

Implementing the global framework requires new financial schemes to mobilise private funding. The difficulty is to encourage the development of a sustainable supply that is favourable to biodiversity, and to align the interests of this supply with those of demand. Historically, the trend has been towards maximising economic growth, sometimes accompanied by increasingly important social and environmental components. The aim here is to strengthen the 'biodiversity' aspect of these extra-financial concerns, to help achieve global objectives. Biodiversity certificates/credits can be a vehicle for this, and can be used, for example, as part of companies' CSR strategies, for sustainable finance, or for public policies to preserve biodiversity, with positive consequences for both ecosystems and livelihoods.

Given that the scientific arguments are constantly advancing and that the economic and financial risks associated with environmental degradation are constantly being heightened, the

demand for new extra-financial solutions seems unavoidable if we are to meet the challenges of the Global Biodiversity Framework.

Given the stakes and challenges, it is essential that the scientific community concerned with protecting biodiversity should be proactive in contributing to define the frameworks that will address the loss of biodiversity.

Political framework

The first "biodiversity credits" were set up in the 1980s, under the aegis of environmental NGOs. It quickly became apparent that these credits needed to be governed by national and local public authorities.

Today, we can consider at least five types of essential stakeholder: sellers and buyers of certificates, public authorities, representatives of local populations and independent biodiversity conservation organisations.
Another major challenge concerns the public authorities: for the certificates to succeed, it is essential that they demonstrate inclusive and participative governance, particularly with regard to the related subjects that will be impacted by these certificates, such as agricultural policies.

These conditions are not always met, although the global biodiversity framework recalls them in targets 21 to 23. The governance of biodiversity certificates/credits will therefore have to make progress, especially as the innovative aspect of these mechanisms involves new social issues and new stakeholders.
Another point to consider is what type of biodiversity is referred to. There are at least four possible approaches to biodiversity, reflected in different criteria:

- Biodiversity for its own sake, without any utilitarian or anthropocentric considerations, not responding to any particular interest or role.
- Biodiversity that should be protected because it is remarkable and can be found in so-called “natural” areas.
- Biodiversity associated with production systems, particularly agriculture and fisheries. In this case, the biodiversity targets are intertwined with production targets.
- “Environmental” Biodiversity, that concerns protection against disturbance, carbon storage, water supply, health and quality of life in cities.

Opportunities and risks

Most of the sources consulted agree that both the opportunities and the risks associated with biodiversity certificates/credits are very significant. Consequently, the implementation and informed use of such a mechanism requires a thorough and balanced understanding of both aspects. Risk analysis is essential to avoid perverse effects and to design a mechanism that is genuinely favourable to biodiversity. An analysis of the opportunities is essential in order to assess the potential and design a mechanism that will arouse the interest and commitment of all stakeholders, in particular economic and financial players. The purpose of this document is to

analyse the risks and opportunities associated with biodiversity certificates/credits, based on the “state of the art” of science and available expertise.

The first part proposes an analysis of the risks, so that they can be taken into account in the principles governing biodiversity credits/certificates and anticipated as far as possible. Without forgetting that: i) there is no such thing as zero risk, ii) not taking action and remaining on the current pathway also constitutes a major risk for biodiversity (in the current context, these earmarked financing mechanisms seem essential to help achieve the objectives of the Kunming-Montréal global framework) and iii) tackling the loss of biodiversity will be essential to mitigate climate change.
The second part of the document presents an analysis of the opportunities linked to the development of biodiversity certificates, in the form of an identification of the main use cases, followed by an analysis of supply and demand. Its main objective is to identify the main drivers for contributions to reach a "significant" volume, with regard to global objectives. This challenge is only meaningful if the quality of the certificates is satisfactory, i.e. only if the risks are satisfactorily managed.

This work is being carried out as part of the "Certificates For Biodiversity" project, run by the French Museum National d'Histoire Naturelle, Carbone 4 and the Fondation pour la Recherche sur la Biodiversité. The aim of this project is to produce knowledge and methods around the issue of biodiversity certificates. This includes the development of a methodology for assessing biodiversity gains of field projects, assessed by expert consensus. The consortium is mobilising field experts to establish a taxonomy of practices favourable to biodiversity, and scientific experts to carry out assessments of the biodiversity gains associated with a given changes of practices.

Definitions and conceptual framework

In the remainder of this document, we use the following definitions:

- A "biodiversity gain" is the result of a positive effect on biodiversity generated by favourable actions. These gains relate to practices implemented or maintained in a given area (restoration or conservation).
- A "biodiversity certificate" is a certified quantity of "biodiversity gain". This gain value can be claimed by an end-buyer through a "claim".
- A "claim" is a statement that enables the end buyer to claim the "biodiversity benefits" associated with the certificate.
- A biodiversity certificate "mechanism" is a scheme framing the generation, trading and use certificates (fig. 1).

We consider that the aim of a biodiversity certificate mechanism is to make a credible and significant contribution to the **global goals for biodiversity**, while being **fair** on the socio-economic level.

In practical terms, this means helping to align financial flows, production methods, business models and public policies with the global goals. It also means improving relations between very different partners, a necessity for the large-scale deployment of such certificates.

By "risk", we mean anything that could jeopardise the positive effect of the mechanism's contributions to the global goals for biodiversity. In other words, that they are significantly overvalued compared to the claims made, and/or have harmful "rebound effects" on biodiversity and/or on the socio-economic level. These are therefore risks that have a direct impact on the "quality" of the certificates.

We use the term "certificates" rather than "credit" because a "credit" is implicitly associated with a "debit", and therefore suggests a system of compensation (or offsetting), where "biodiversity gains" enable to cancel out (or offset) "negative impacts" generated elsewhere. A "certificate" refers only to a certified unit of biodiversity gain, regardless of its use and the type of associated claims.

We use the term "mechanism" rather than "market" to emphasise that the primary objective of such a mechanism is to contribute to the global goals for biodiversity, with the generation of financial flows being a means to this end.

The term "stakeholders" refers to all the local or national players involved in the area where the actions are being implemented.

In order to cover all risks, challenges and opportunities, we consider biodiversity certificate mechanisms in the broadest sense.

In particular:

- The "mechanism" may be voluntary or regulatory, local or global.
- The "biodiversity gain" may correspond to a net improvement in biodiversity, whatever the means used to achieve this objective (restoration), or to the maintenance of good status and/or good practices already in place (conservation).
- The claims may be:
    - Compensation claims: when the "biodiversity gain" cancels out, i.e. "offsets", a "negative impact" generated elsewhere by the entity claiming the gain.
    - Contribution claims: when the "biodiversity gain" is distinguished from the "negative impacts". The entity that claims this gain then claims a contribution to restoring or conserving biodiversity, and accounts for it separately from its negative impacts.

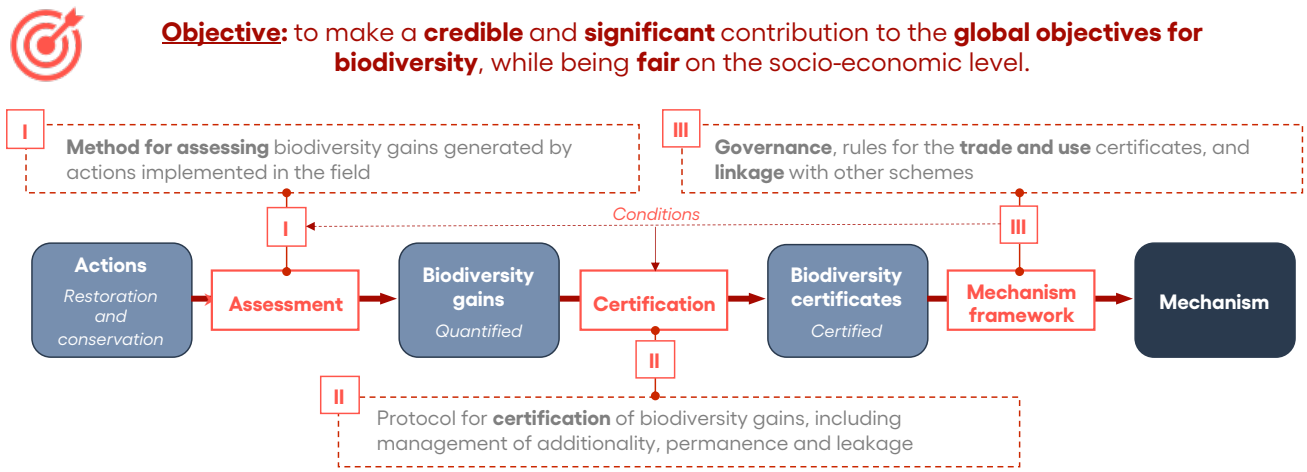


Figure 1: biodiversity certificate mechanism

I. Risks affecting the quality of the mechanism

The mapping of risks and opportunities was based on a review of the scientific literature, a review of (non-academic) expert reports on biodiversity certificates and carbon credits (so-called "grey" literature), and 20 interviews with various stakeholders: conservation NGOs, researchers, institutions, IPLCs, project developers, companies.
The review of the scientific literature was used to characterise the main risks associated with the quality of the mechanism, while the grey literature and interviews were mainly used to analyse supply and demand.

The list of references is available in the appendix.
This risk mapping does not call into question the various positive effects that these mechanisms can have on biodiversity and local populations, nor does it comment on the conditions under which they can be considered "globally beneficial". Some suggestions for mitigating these risks have been included.
The risks may relate to the compensatory or contributory, voluntary or regulatory nature of the mechanism, but also to the assessment method or other factors that will be exposed.

1 / For compensation mechanisms: risk of undermining the mitigation hierarchy

Biodiversity certificates that are part of an offsetting mechanism ("credits" or "offsets") may undermine the mitigation hierarchy, as the possibility of "offsetting" may reduce the use of impact avoidance or reduction actions (Levrel et al., 2018; Hache, 2023). Although real gains in biodiversity can be supported by the literature (Levrel, 2020), they are sometimes called into question, as are the assessment methods used to compare negative impacts on biodiversity and the biodiversity gains associated with compensatory measures (Josefsson et al., 2021). Methods may not sufficiently take into account ecosystem services and functional groups as a whole (Sonter et al., 2018; Joseffson et al., 2021). In some cases, this may call into question the overall relevance of compensation schemes (Marshall et al., 2020).

This question also arises for regulatory mechanisms. In France, ecological offsetting is governed by Articles L122-1-1 and L122-3 of the Environmental Code, which transcribe the mitigation hierarchy (Avoid-Reduce-Compensate sequence known as "ERC"). This sequence is sometimes called into question because in practice it does not always prioritise the avoidance of impacts on biodiversity over reduction or compensation. A study by Bigard et al., which analysed 42 impact studies in the Montpellier metropolitan area, estimates that between 2006 and 2016, 90% of the measures proposed were impact reduction measures, 6% were compensation measures and only 1% were avoidance measures (Bigard et al., 2017; Bigard et al., 2018).

The principle of compensation implies that it is acceptable to accept a loss of biodiversity if it is compensated for elsewhere. This is the case even when the loss concerns ecosystems that are already highly threatened, for which compensation is difficult (Maron et al., 2023). Offsetting may then constitute a “licence to destroy” biodiversity, which calls into question its value for biodiversity.

2 / Risks of greenwashing: communication about good practice conceal the negative impacts generated elsewhere

Communication on "good practices" in favour of biodiversity can sometimes conceal negative impacts generated elsewhere (Eliwa et al., 2021; Maron et al., 2023). In addition, the difficulty of having harmonised and common standards for the generation of certificates complicates verification, for society, of the practices that are actually carried out (Maron et al., 2023), as communications are based on unregulated declarations. This risk of greenwashing (Seele & Gatti, 2017) can damage the mechanism's reputation by undermining the society’s perception of its real impact and reduce the willingness of companies to engage with these mechanisms, for fear of accusations (Krause & Matzdorf, 2019).

3 / For voluntary mechanisms: risk of disrupting or slowing down the emergence of ambitious biodiversity regulations

The introduction of voluntary certificate mechanisms could reduce the incentive for governments to bring their regulations into line with the global biodiversity framework, particularly regulations relating to the reduction of pressures on biodiversity. The revision of legislation could be delayed or mitigated because it would then be considered that companies are already acting in favour of biodiversity (Bull et al., 2013). These voluntary mechanisms may therefore be favoured by governments, to the detriment of strengthening existing legislation (Maron et al., 2023; Wunder et al., 2024).

4 / Risks associated with assessing biodiversity gains: assessment method, uncertainty of reference scenarios, double counting

To generate certificates, the "biodiversity gains" must be assessed and monitored over time.

4.1 / Risks relating to the assessment method

The method used to assess biodiversity gains must be robust in order to guarantee the quality of the certificates. Biodiversity is a complex entity that is difficult to capture using a single metric. The use of a single unit of measurement necessarily masks specific dynamics or characteristics of the state of biodiversity: species diversity, population abundance, soil composition, etc. (Bruggeman, 2005; Tedersoo et al., 2024). Moreover, it will be difficult to apply to all practices and projects (Bull et al., 2013; Lammerant et al., 2021). Also, the metrics chosen as biodiversity benchmarks do not always meet with consensus (Mehrabi & Naidoo, 2022), and the choice of metrics can lead to uncertainties about the real gains obtained, as well as the losses caused (Bull et al., 2013). These uncertainties compromise the ecological robustness of the method (Wunder et al., 2024) and therefore the quality of the certificate.

The evaluation method must also enable the actions taken and the biodiversity gains to be monitored over time. It must be standardised and transparent (Carreras Gamarra & Toombs, 2017), in order to avoid differences between projects, limit the risk of overestimating perceived gains (Balmford et al., 2023), and ensure that verifiable gains have been made (Bull et al., 2013). Standardisation and transparency are also important conditions for the social value of the procedure.

4.2/ Risks of overestimating biodiversity gains due to uncertainty about the reference scenarios

For "avoided losses" type projects, the assessment of biodiversity gains involves "baseline scenarios" and "future scenarios", to predict the losses that would have occurred in the absence of the project and hence evaluate the losses avoided by the project (Comte et al., 2024). However, there is a great flexibility in the choice of scenarios by project developers (Karsenty, 2021; Haya et al., 2023), which creates the risk of overestimating avoided losses (Maseyk et al., 2021; Haya et al.,

2023). Indeed, if the losses projected in the baseline scenario are overestimated, this artificially increases the "biodiversity gains" allocated to the projects, and therefore the number of certificates issued (Maron et al., 2015).

Similarly, the self-selection bias of the sites on which compensatory measures are implemented can jeopardise the achievement of real gains in biodiversity (zu Ermgassen et al., 2023): the selection of a site that is remote and/or not very threatened by human activities introduces a risk that the biodiversity gains are not due to the actions implemented, because they would have occurred anyway.

Furthermore, the implementation of a project in areas already identified as "natural" may call into question the reality of the generated biodiversity gains, both in ecological and surface terms (Levrel et al., 2018). The lack of elements enabling an ex-post impact assessment limits the possibility of really guaranteeing the gains evaluated within the current reference systems (Wunder et al., 2024). Overall, certificates can be accused of financing *business-as-usual* mitigation (Levrel et al., 2018; Karsenty, 2022).

4.3/ Stacking risk

There is also a risk of double-counting of gains already covered by other mechanisms - for example, in the case where a biodiversity certificate and a carbon credit are generated for the implementation of the same action. One proposal for resolution is the introduction of a co-credit mechanism (Tedersoo et al., 2024), or co-certificate. The overall relevance of the biodiversity certificate mechanism may be called into question if it competes with or destabilises existing mechanisms.

5/ Risk related to the reliability of control processes

Furthermore, experience of similar mechanisms highlights the existence of a risk in the reliability of certification protocols, notably linked to conflicts of interest. The fact that audits are carried out by private bodies competing on a certification market may create an incentive to reduce the rigour of their assessments (Karsenty, 2022).

Similarly, the remuneration of certification bodies is generally proportional to the number of certificates issued, which may call into question their objectivity (Greenfield, 2023). Finally, the competence of audit firms has sometimes been called into question, in particular the limited time spent in the field for impact assessments of projects or programmes. This can compromise the legitimacy of the assessments made, as well as their compliance with environmental legislation (Romero & Putz, 2018).

From an institutional point of view, the lack of human or financial resources can hamper the monitoring and follow-up of evaluations carried out by private bodies and project sponsors (Levrel et al., 2018; Evans, 2023). Application examples also demonstrate the lack of national regulatory frameworks for these systems in many countries (Brownlie et al., 2017).

To minimise the risks, the certification body must be independent and scientifically credible. Assessment procedures must be standardised and robust. Information must be transparent so that stakeholders have access to the data and conclusions of the assessments.

6/ Risk associated with failing to promote existing good practice and landscape features that are already favourable to biodiversity

The additionality criterion consists in rewarding only new gains, specifically induced by the practices implemented under the mechanism. If this rule is too restrictive, it may exclude stakeholders who are already implementing good practices for biodiversity. The risk is that there will be an incentive to destroy, for example, an old hedge along a road (not penalised) in order to be able to rebuild, for example, a young hedge between two plots (rewarded by the mechanism). More generally, this raises the question of how to reward and maintain "intact" areas and existing good practices.

7/ Risks associated with the non-permanence of biodiversity gains

The risk of non-permanence corresponds to the risk that the actions taken and the "biodiversity gains" associated with a certificate are not sustainable over time. This question of permanence must take into account two aspects in particular: how long must certified practices be maintained, and how can we guarantee that they will continue to be effective over time in a changing environment, particularly under the pressure of climate change (Bull et al., 2013). Global changes must be anticipated and incorporated into the monitoring and calculation of biodiversity gains (Macintosh, 2013), otherwise actions may have little or no positive effect in the long term. For example, reforestation should not simply consist of planting trees, but should consider the forest ecosystem as a whole, combining different species, different vegetation layers, preserving the soil and its biodiversity, and integrating diversified trophic chains. This raises questions about the balance to be struck between biodiversity gains and the permanence of practices. Similarly, the length of time over which an action leading to the generation of a certificate must be maintained must be aligned with a scientifically established timeframe for obtaining gains for biodiversity, which is complex to define.

In the case of a mechanism that allows offsetting, we can question the purchase of a credit or certificate, which represents a "biodiversity gain" but whose permanence is not guaranteed, in return for a negative impact on biodiversity that is definitive.

Finally, we need to ensure that practices are ecologically permanent, and link them to a sufficiently long "real" legal period.

8/ Risks associated with the displacement of impacts outside the certified area (leakage)

The restriction of activities harmful to biodiversity as part of a conservation or restoration project, or the regulatory constraints on these harmful activities, may lead to the partial or total relocation of these activities outside the project area. The associated impacts are then displaced but in no way mitigated, in particular where there is no harmonisation of environmental regulations. (Meyfroidt et al., 2020). This creates a risk that certificates will be issued when the real benefits for biodiversity are non-existent or overestimated.

9/ Risks associated with social costs and unfairness

In addition to the challenges for biodiversity, a certificate mechanism can have negative socio-economic impacts. The most significant risks relate to land use, property rights, remuneration of local populations and income distribution. Carbon credits in particular have highlighted a key risk that also applies to biodiversity certificates: the "scramble for resources", including the "land grabbing" phenomenon. Here, external players come to appropriate resources and/or land in order to capture the funding provided by these mechanisms (Monterroso & Sills, 2022), particularly where there are weaknesses in the land tenure system.

In some territories, the land titles of local, potentially indigenous, populations may not be formally recognised by the authorities. A biodiversity certificate mechanism can then indirectly contribute to dispossessing local populations of their land - and therefore also of the associated uses, and more generally to exacerbating insecurities relating to property rights (Sunderlin et al., 2018). In some cases, local populations may find themselves excluded from these mechanisms (Johnson et al., 2018; Monterroso & Sills, 2022; Samndong & Vatn, 2018), or affected by the prohibition, in the project area, of certain historical practices that are not recognised even though they may be virtuous. It is commonly accepted that a weakness in property rights can have harmful consequences for the preservation of biodiversity, by encouraging over-exploitation (Blackman et al., 2017).

In addition, the income from this funding may be unfairly distributed between the various stakeholders, with the majority going to a small number of private owners and very little to local populations (Chomba et al., 2016). Yet these local populations are often the ones who are responsible for conserving biodiversity (Tedersoo et al., 2024). These inequalities, inequities and lack of legitimacy reduce the success of projects and increase the risk of conflict or opposition (Löfqvist et al., 2023).

Objective: to make a **credible** and **significant** contribution to the **global objectives for biodiversity**, while being **fair** in socio-economic terms.

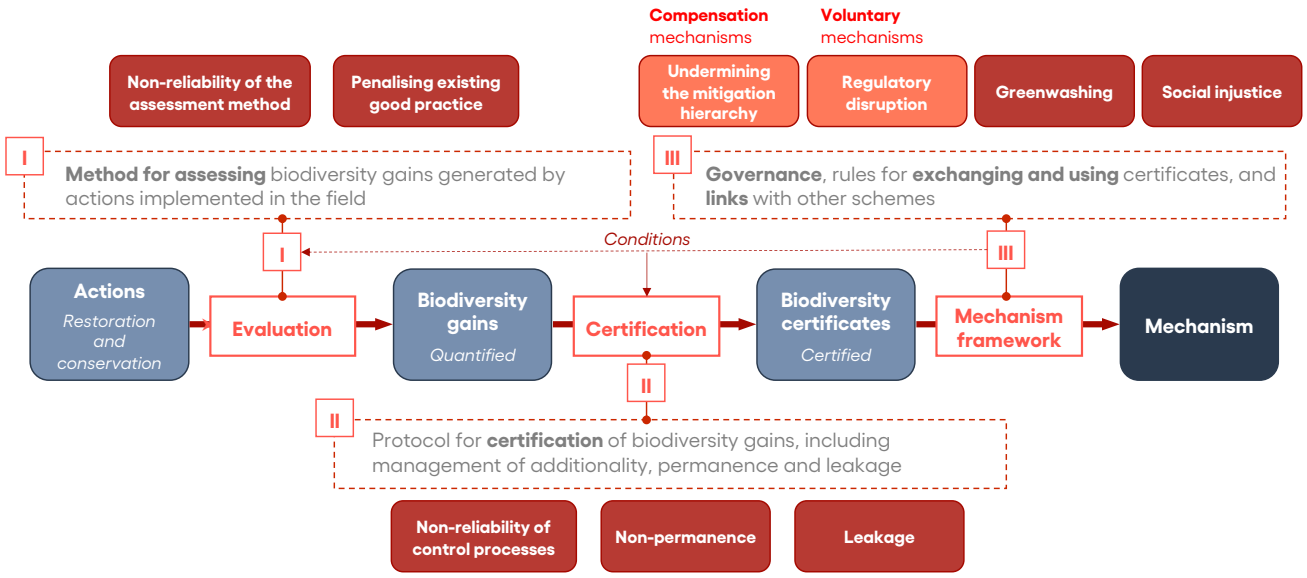
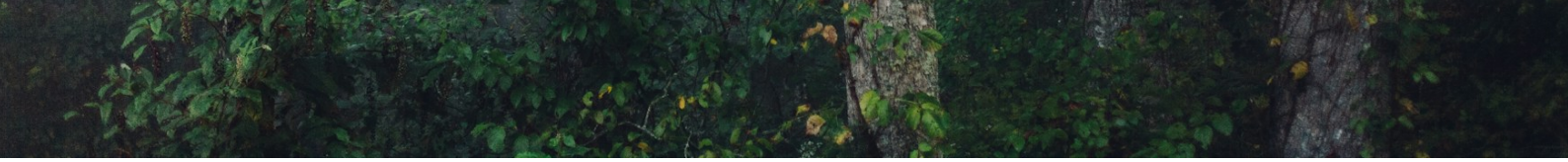


Figure 2: Representation of the risks according to the stages of the mechanism. Most of these risks are, in certain respects, transversal. The representation indicates the stage at which they are mainly managed



II. Opportunities: use cases and drivers of supply and demand

In this section we present the use cases for the mechanism and the opportunities linked to supply and demand, which will determine the scale of the mechanism. This work is mainly based on a review of (non-academic) expert reports and 20 interviews with stakeholders (lists in appendix). The main expert reports consulted for this analysis are:

- The World Economic Forum Report of December 2023 (Biodiversity Credits: Demand Analysis and Market Outlook)
- The Biodiversity Credits Alliance publication of December 2023 (Demand-side Sources and Motivations for Biodiversity Credits)
- The IAPB's April 2024 "Call for Views" report
- The Biodiversity Consultancy Report of December 2022 (Exploring design principles for high integrity and scalable Voluntary Biodiversity Credits).

In the remainder of this document, we will distinguish between supply-side players (local stakeholders and project developers) and demand-side players (traders and end-buyers), as shown in the table below:

Supply-side (issuance of certificates)	Demand-side (trade and claim of certificates)
Local stakeholders: local players, including indigenous peoples and local communities, involved in the project area. They may directly develop the project generating the biodiversity certificates, or do so via an intermediary, a "project developer".	**Traders** (if this option exists): entity or organisation that buys and resells certificates that have already been issued. It may facilitate the relationship between supply and demand. Its participation is optional and conditional on the existence of a secondary market.
Project developer: entity or organisation implementing restoration and/or conservation actions. It provides technical and financial capabilities that may be important for generating certificates. They are frequently involved in the mechanism, although their participation is not strictly compulsory.	**End buyers:** entity or organisation (private or public, or even individuals) claiming the biodiversity gains associated with the certificate through a "claim".

A biodiversity certificate mechanism involves players other than those mentioned above (e.g. certifiers, natural area managers, public authorities, standard writers), although they will not generally own the certificates. They do, however, play a decisive role in the mechanism, in terms of both supply and demand. Further analysis will be needed to analyse the determinants linked to their functions.

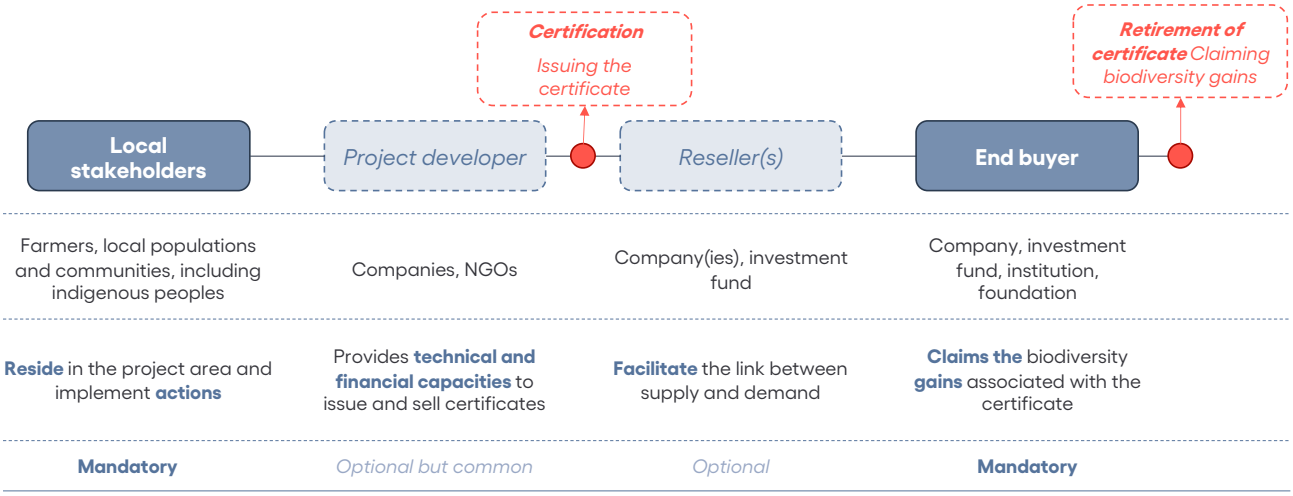


Figure 3: Main players in the certificate ownership chain

1. Use cases

We have identified five main use cases for biodiversity certificates, presented below.

a) Regulatory use cases

The certificates can be part of a regulatory framework, for example that of ecological offsetting, existing in several countries. In these countries, certain stakeholders are obliged to purchase biodiversity credits to "compensate" for existing or future destruction caused by a project.

More generally, certificates, as a standard unit of "biodiversity gain" (offset or contribution), can be a vehicle for managing private sector participation in achieving public biodiversity objectives, including in mechanisms that are not based on offsetting.

Following the publication of the Global Biodiversity Framework, it is expected that the signatory countries will align their regulations with the global objectives. In many cases, this alignment should raise the level of ambition or implementation of national policies. This could encourage the development of regulatory mechanisms for the restoration and conservation of biodiversity, some of which could involve certificates.

There are two options here, depending on whether certificates are mandatory or not.

Direct regulatory obligation: the certificate as purpose of the regulation

Ce cas d'usage correspond à celui où des organisations sont soumises à une obligation d'acheter des certificats (par exemple : le cadre des mécanismes de compensation cités plus haut). Plus généralement, les certificats peuvent être utilisés comme « vecteur » pour organiser une participation « obligatoire » du secteur privé au financement des plans de préservation de la biodiversité définis par la puissance publique, à l'échelle locale ou nationale.

Indirect regulatory incentive: the certificate as a means of ensuring compliance with regulation

Ce cas d'usage correspond à celui où l'achat de certificats est reconnu par le législateur comme une façon de satisfaire à des exigences réglementaires, sans constituer pour autant une obligation *per-se*. Par exemple, cela pourrait être le cas dans le cadre de lois sur la divulgation financière, le reporting extra-financier, ou le devoir de vigilance.

b) Voluntary use cases

Organisations may wish to purchase certificates independently of the regulations in force. According to the sources and stakeholders consulted, the main motivation for this voluntary request is the perception of a strategic advantage associated with the purchase of these certificates. This advantage may relate to relations with stakeholders, which will be improved by demonstrating a certain level of "performance" on CSR issues, or to respond to supply chain resilience issues. In addition to strategic motivation, organisations may also choose to invest in biodiversity conservation on a "purely philanthropic" basis, and certificates can be a vehicle for this. This defines three main use cases for voluntary demand.

Corporate Social Responsibility (CSR) performance

Corporate Social Responsibility (CSR) covers all the issues traditionally considered to be "extra-financial", in particular social and environmental issues, including biodiversity. With the rapidly growing importance of these issues in the public sphere, CSR has taken on a strategic dimension for some companies. They are seeking to improve their social and environmental performance in order to meet the expectations of their stakeholders. The purchase of biodiversity certificates enables them to claim "biodiversity gains", and can therefore contribute to establishing a certain level of "CSR performance".

This "CSR performance" can be defined at the level of the entire organisation, or at a lower level, for example at the level of a brand, a product range ("green offer"), or an investment portfolio ("green fund"). Overall, this "CSR performance" is an issue of relations with customers, investors, employees, and civil society. The aim is to strengthen and secure these relationships and to guard against certain reputational risks. In particular:

- ***Vis-à-vis* customers:** protecting and strengthening the brand image, developing "green" offers to capture new market share, meeting customers' CSR criteria and their demand for information. In line with target 15B of the global framework, which calls for the provision of the information consumers need to promote sustainable consumption.
- ***Vis-à-vis* investors:** protect and strengthen relationships, meet investors' CSR criteria, capture 'green' financing. Strengthen credibility and brand image.
- ***Vis-à-vis* employees:** protecting and strengthening employees' ties to the company, attracting and retaining talent, contributing to the positive development of the company culture.
- ***Vis-à-vis* civil society:** prevent reputational risks, assert an ethical approach to preserving common assets.

Supply chain resilience

In addition to impacts, organisations also have dependencies on biodiversity. They can choose to invest in regeneration or conservation actions within their supply chain. This choice helps to preserve the ecosystems on which they depend and to increase their resilience. Certificates can be a vehicle for such investments.

Philanthropic or ethical approach

Organisations, in particular foundations or NGOs, can invest in nature restoration/conservation and restoration actions independently of any strategic considerations, a purely philanthropic or ethical approach. Certificates can be a vehicle for these investments.

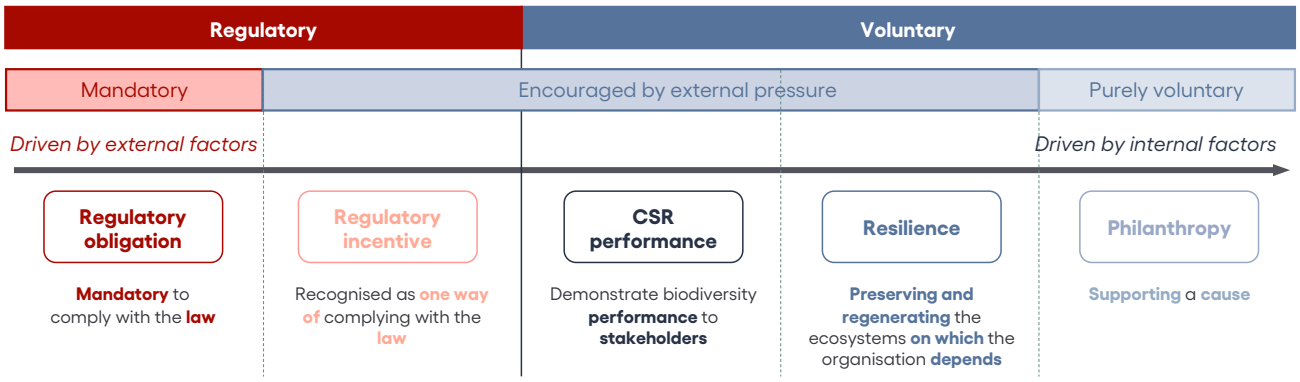
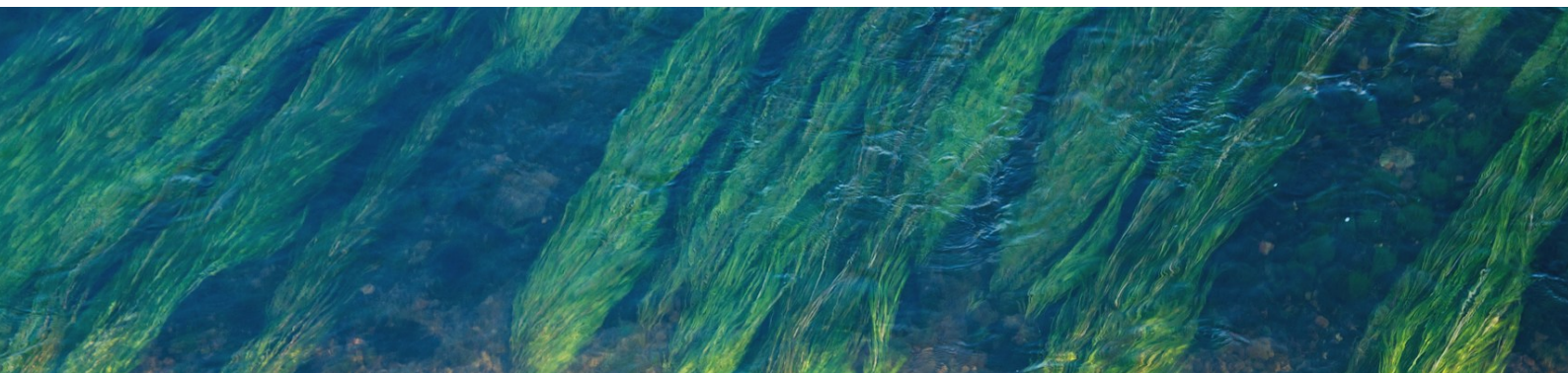
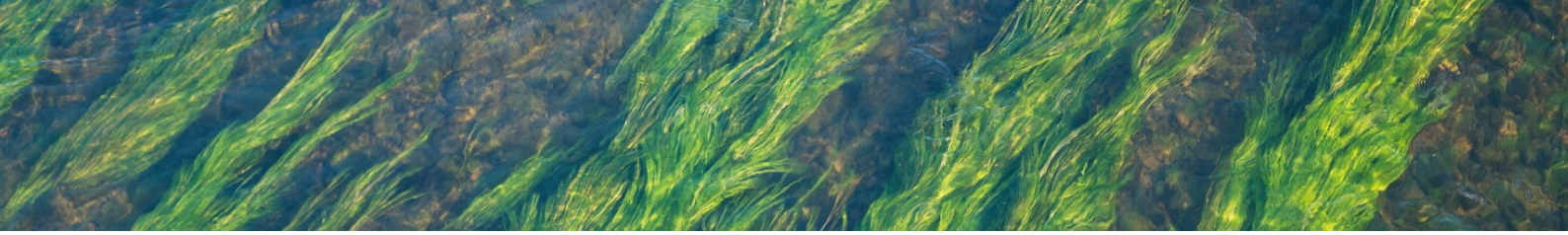


Figure 4: Main use cases for biodiversity certificates





2. Drivers of supply and demand

In a biodiversity certificate mechanism, supply is the driving force behind the implementation of actions in favour of biodiversity, and demand is the driving force behind the financing of these actions. The levels of supply and demand will determine the scale of the mechanism (the total volume of certificates claimed). They will make it possible to characterise the "significance" of the contribution to the global objectives for biodiversity. This section analyses the drivers of supply and demand, which are associated with opportunities for the mechanism's stakeholders.

Most of the reports consulted and stakeholders interviewed consider that demand should be the main limiting factor for the scale of the mechanism, with supply to follow if demand is sufficient. It should be noted that this may only be true up to a point, as the availability of land and the overall potential for restoration or conservation is limited. On the other hand, this should not obscure the importance of supply, the determinants of which are analysed in the next section.

a) Drivers of supply

According to the stakeholders and sources consulted, the main determinants of supply are linked to the adaptation of the mechanism to the reality of local stakeholders. In particular: its compatibility with their context and needs, including taking account of local knowledge and understanding of biodiversity, the involvement of local stakeholders at the various levels of the mechanism, the fair distribution of roles and revenues, and funding capacity and security.

Determinants relating to compatibility with the issues and needs of local stakeholders

If the mechanism is to attract the interest of local stakeholders, it must be compatible with their context and meet their needs, in particular:

- From an operational point of view: the actions eligible for the issue of certificates are adapted to existing and desired local management methods.
- From a methodological point of view: the methods, knowledge and technologies mobilised by the mechanism, particularly for the MRV system (measurement, reporting, verification) and certification, are adapted to the skills available locally, without compromising the credibility of the gains made.

This question of compatibility is closely linked to the issue of the mechanism's recognition of local knowledge on biodiversity. This is valid for all stakeholders, but is particularly true for indigenous peoples, whose knowledge has often been ignored in Western-driven global mechanisms. Yet the value of this knowledge is recognised for the preservation of nature. Their recognition will be important to the success of the mechanism.

Determinants linked to financing capacity and security

For the mechanism to be of interest to local stakeholders and stimulate supply, they must be able to invest in the restoration and/or conservation actions that produce the biodiversity gains. This requires:

- Financing capacity: resources needed to generate certificates, in particular for the implementation of actions, MRV and certification.
- Secure financing: a guarantee that one will be able to sell the certificates generated at an adequate price and be covered in the event of unforeseen circumstances or project failure.

In some cases, claiming certificates may entail a legal risk, particularly wherever there are issues relating to land tenure and the recognition of property rights. In particular, the mechanism must be adapted to the specific characteristics of indigenous territories, which may be owned by the State (for example in certain regions of Latin America). To be able to commit to the mechanism, stakeholders, in particular indigenous peoples, must be assured of ownership of the certificates generated by their conservation actions and land management. This process, if conducted properly, can present opportunities for resolving ownership conflicts.

Determinants linked to the valuation of roles and rewards granted to local stakeholders

For the mechanism to attract the interest of local stakeholders, they must be satisfied with their position in it. This includes:

- their role in the governance. In other words, they must be given their rightful place in the management of the mechanism, right from the design phase. A mechanism that is perceived as having been defined and imposed by external players is likely to generate local resistance.
- income distribution: that they receive a fair share of the income generated by the mechanism.

The involvement of local stakeholders also seems essential if the mechanism is to be aligned with their issues, objectives and interests, and mobilise their knowledge, whose value for biodiversity conservation is recognised. These factors are also linked to the socio-economic integrity of the mechanism and are essential to guarantee the "fair" nature of the mechanism.

The role of intermediaries in facilitating supply

Defining a fair place for intermediaries (project developers and traders) is an important aspect of the mechanism design.

Project developers work in coordination with local stakeholders to generate certificates by providing technical and financial capacity. They may be involved in obtaining financing,

supporting the implementation of restoration and/or conservation actions, setting up the MRV system, managing certification and marketing certificates. These intermediaries have a facilitating function in the mechanism, and in this respect their role can be important. Their presence can increase the supply of certificates, stimulate demand, facilitate relations between supply and demand and promote the mechanism in general.

Furthermore, where this possibility exists, traders, who buy certificates that have already been issued to resell them (to an end-buyer or to another trader), may also help to facilitate the relationship between supply and demand.

However, multiplying the number of players entails a risk of dispersing the value generated by the certificates and increasing transaction costs, therefore reducing the share of revenue that goes to local stakeholders and to the implementation of biodiversity actions. It is important to find the right balance in the involvement of intermediaries and thus make the mechanism more fluid without excessively dispersing the value generated.

Issues relating to the distribution of projects

In addition to the volume of supply and demand, there is the question of its distribution. The mechanism may implicitly favour certain types of projects, in particular certain geographical areas or certain types of initiative.

The definition of a "standard unit" raises some issues. It may encourage priority action to be taken where it is simplest and/or least costly, creating a "race to the bottom" phenomenon. For the mechanism to contribute effectively to the global objectives for biodiversity, it must encourage a certain level of alignment between the distribution of restoration and conservation actions and the global needs for biodiversity.

b) Drivers of demand

The following section analyses the drivers of demand, distinguishing between regulatory and voluntary mechanisms.

Drivers of regulatory demand

“Regulatory obligation" and "Regulatory articulation" use cases

La demande de type « réglementaire » sera principalement déterminée par les caractéristiques de la règlementation dont elle sera issue : obligation d’achat de certificats ou reconnaissance des certificats comme un des moyens de répondre à des obligations réglementaires.

Determinants of voluntary demand

“CSR performance", "Supply chain resilience", "Philanthropic or ethical approach" use cases

According to the sources and players consulted, voluntary demand will depend mainly on the reference levels set by the framework, the credibility of the mechanism, the potential for external promotion, the simplicity of managing them internally and their price. These factors will in turn

depend on certain internal characteristics of the mechanism, in particular those of the associated "reporting framework" (see below).

Determinants linked to the levels of ambition defined by the mechanism's "reporting framework" (reference levels)

A certificate mechanism is implicitly or explicitly associated with a "reporting framework" which provides a number of definitions and guidelines, in particular for:

- **Semantics:** definition of terms, in particular "certificate".
- **Accounting:** how to account for certificates in the CSR reporting of organisations, what status to give them in the accounts.
- **Levels of ambition:** references to define, according to the organisation's activity, the quantity of certificates it must purchase to claim a certain "level of ambition".
- **Claims:** how a company can communicate around the achievement of a certain "level of ambition".

When existing and respected, this framework makes it possible to link the purchase of certificates to the organisation's "CSR performance". These characteristics will have a major influence on demand. In particular, the way in which ambition levels are defined within the reporting framework will be a dimensional element of demand, as they provide guidance on the 'quantity' of certificates that an organisation should purchase, given its activity and ambition.

Determinants linked to the credibility of the mechanism

For organisations to buy certificates, they need to be sure that the biodiversity gains claimed are robust and properly assessed, and that their commitment can be recognised. They must not run the risk of being accused of greenwashing or disrupting local livelihoods. This credibility is essential to guarantee the effectiveness of their actions, whether they are geared towards resilience, CSR performance or philanthropy. It is also essential to be able to promote this action to its stakeholders, in particular its customers, employees, investors and civil society.

To achieve this, the mechanism must be widely recognised by the relevant players. In particular, it must have the support of those considered most competent to judge its robustness: the scientific community, conservation NGOs and local stakeholders.

This credibility of the mechanism is linked to the proper management of the risks set out in section I. Naturally, it is essential to guarantee the quality of the mechanism. It also appears to be a major determinant of demand: organisations are unlikely to want to invest in a mechanism that does not have solid recognition. Especially given that the criticisms levelled at the voluntary carbon market by various observers (press articles, scientific articles, expert reports by NGOs) have recently taken on a new dimension by reaching the general public[1] . This should make buyers even more cautious about buying biodiversity certificates.

[1] For example, the Guardian article of 20 January 2023, which claims that 90% of carbon credits from tropical forests are worthless. It specifically targets "REDD+" type credits issued by the VERRA standard, and is based on three scientific articles published shortly beforehand. Other criticisms come from NGOs, some of which are dedicated to the subject, such as Carbon Market Watch.

Credibility must be established and recognised from the outset of the mechanism, in particular to enable "pioneers" to become involved in the system with a good assurance of its robustness. It must also be dynamic. To guarantee credibility over the long term, the mechanism must be committed to continuous improvement through scientific review and public consultation.

Determinants linked to the potential of external promotion

Demand will depend on the ability of organisations to promote the purchase of certificates to their stakeholders, particularly those motivated by achieving a certain level of "CSR performance". The ability to express this commitment in such a way as to enhance its value will therefore be an important determinant of demand. This will depend in particular on the characteristics of the associated reporting framework. It is central because it will provide guidelines for the semantics, ambitions, accounting, and communication around the achievement of a certain level of "CSR performance", via "claims". The potential for external promotion will be greater as the reporting framework is:

- **Standard:** recognised and shared by a large number of players internationally.
- **Simple:** easy to understand and explain, even to non-experts.
- **Impactful:** the "claims" have strong communication potential around the achievement of the ambition levels and enable the organisation to differentiate itself.

Determinants linked to the simplicity of internal management

Beyond the potential of external promotion, another determining factor for demand will be the simplicity of internal management of the certificates: quality assessment, purchasing, integration into the *reporting* and accounting system, communication. If the mechanism is well adapted to the way organisations operate internally, it will be easier for them to sign up. It should enable them to manage the purchase of certificates and their integration into their existing protocols with a minimum of complexity.

In particular, a good articulation between the reporting method and the regulatory and voluntary frameworks would simplify the commitment of organisations by creating synergies between their different approaches, in addition to reinforcing the perceived value of the certificates. The fact that the certificates tie in with the CSRD, and even with the frameworks emanating from TNFD and SBTN initiatives, was often cited as an important factor. The adequacy of these frameworks with the requirements of a credible and sustainable mechanism will have to be analysed.

Price

The price of certificates is an important driver of demand. However, it must be seen in relation to the perceived value of the certificates, and the way in which it is distributed along the value chain. Overall, certificate buyers want to minimise transaction costs and maximise the share of the certificate price that corresponds to the implementation of biodiversity actions and the social benefits perceived by local stakeholders.

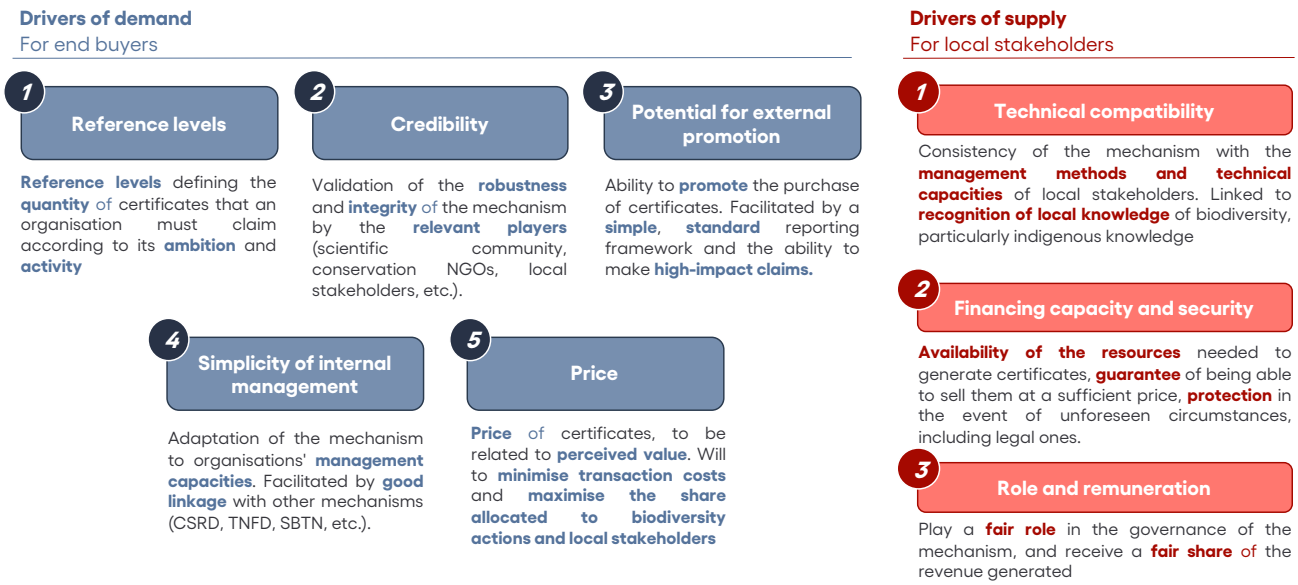


Figure 5: Main drivers of supply and demand

Discussion

Combining voluntary and regulatory measures

By definition, only a regulatory obligation can truly *guarantee* a certain level of demand. According to the sources consulted, several players consider that regulation will be the main driver of the demand for certificates, if not the only factor capable of generating "significant" demand. For example, in the IAPB's "Call for Views" published in April 2024, 83% of respondents believe that regulation will be the main driver of demand, and 45% consider that regulation is the only driver capable of bringing the mechanism to the required scale. This view was also expressed in several interviews.

At the same time, the growing importance of environmental issues is giving CSR a new status. For the most exposed organisations, pressure from stakeholders means that demonstrating a certain level of "CSR performance", which goes beyond regulatory requirements, is an important strategic challenge that justifies "significant" investment.

Whether a voluntary market is sufficient to create "significant" demand depends largely on the objective implied by the term. If, for example, the aim is to achieve a volume of $2 billion a year by 2030, it is likely to be sufficient, as this value is equivalent to the order of magnitude of the voluntary carbon market in 2021 (compared with 850 billion for the regulated carbon market). It is also the high end of the estimates in the WEF's 2023 report for 2030, which estimates that demand could reach $0.76-2bn by 2030 (and $6-69bn by 2050).

If the aim is to provide a "significant" fraction of the $711 billion cited by the Paulson Institute's 2020 report[2] as the annual gap in funding for biodiversity, compared with the needs between now and 2030, then probably not. Indeed, if we consider, for example, 10% of this amount, it would mean reaching a volume of 71 billion dollars. This is well beyond the most optimistic projections for a voluntary mechanism, as well as the current volume of the voluntary carbon market.

This gives a crucial role to the question of the articulation between a possible voluntary mechanism and regulation. As mentioned in section I, voluntary mechanisms can be accused of delaying the emergence of ambitious regulatory standards if the legislator considers that the market already has "things in hand". However, these mechanisms can also facilitate the emergence of ambitious regulations by: 1/ developing tools and methods for operating them, 2/ providing use cases and pilots, and 3/ preparing companies. Some companies may be in favour of more stringent regulation if they have sufficiently anticipated this development.

It therefore seems important for a voluntary mechanism to anticipate its relationship with legislation. On the one hand, it must seek to ensure that the certificates find a place in the regulatory systems in order to stimulate demand (this is the case with the extra-financial *reporting* obligations), and on the other hand, it must ensure that the mechanism generally facilitates the emergence of ambitious regulations.

In all cases, biodiversity certificates, whether voluntary or regulatory, are not a “silver bullet”. They can only be part of the answer to the problem of financing the objectives of the GBF, and their design must take account of their interactions with other existing instruments and systems (environmental standards, PES, carbon credits in particular).

Discussion on the offsetting principle

The concept of "biodiversity offsetting", or “biodiversity compensation”, raises several criticisms. First, there are the various issues that have already been identified for carbon offsetting, in particular:

1. The fact that the "positive impacts" claimed as credits are generally not of the same nature as the "negative impacts" they claim to offset. They may correspond to different operational realities, for example, negative impacts associated with an industrial production process vs. positive impacts associated with a reforestation project. They may not be assessed using the same methods (different approaches and assumptions), particularly critically for credits corresponding to "avoided impacts", which involve reference scenarios. Finally, the evaluation of "positive impacts" may be called into question by the various risks relating to their quality (see section I, most of the risks presented also concern carbon credits).

[2] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobinde la Puente, J. 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

2. There is a risk that, by offering the possibility of "cancelling out" negative impacts, offsetting will be to the detriment of efforts to reduce impacts, particularly where it will be less costly. However, reducing impacts is generally considered to be a priority for achieving overall objectives (see section I.1).

These points of attention, raised in the context of carbon offsetting, also apply to biodiversity offsetting. And in the case of biodiversity, the situation is even more complex, in particular because of the following two factors:

1. Biodiversity is first and foremost a local issue, with great variability between different ecosystems, each of which is, in some way, unique. Impacts on biodiversity are therefore specific to the place where they are considered, whereas greenhouse gas quantities can be considered independently of where they are emitted or absorbed. Thus, while it is possible to compare CO2 emissions and absorptions in geographically distinct areas, it is much more difficult to consider that different impacts on biodiversity are fungible.
2. Measuring impacts on biodiversity is highly complex, with significant uncertainties, and there is no "reference metric" like the tCO2e for climate.

It therefore seems difficult to rigorously define equivalences between "negative impacts" on the one hand, and "positive impacts" generated elsewhere: restoration or conservation projects may generate "biodiversity gains", but it is difficult to demonstrate that they "cancel out" destruction. Most of the sources consulted and the stakeholders interviewed agree on this point. In particular, the 2023 World Economic Forum report considers the use case for biodiversity offsetting to be "contested", and states that it is not generally recognised as a viable option. The Biodiversity Consultancy's 2022 report states that "voluntary biodiversity credits are more likely to deliver verifiable biodiversity outcomes if they are not used as biodiversity offsets". In the April 2024 IAPB (International Advisory Panel on Biodiversity credit) "Call for Views", when asked "what reservations do you have about biodiversity credits", the answer "that credits are viewed as offsets" comes in third place, after the lack of standardisation and the risk of greenwashing, before the lack of demand or social inclusion. Several other sections of the same report indicate that the people interviewed are generally reserved about "biodiversity offsetting", especially in the context of voluntary mechanisms.

This difficulty in rigorously defining "biodiversity offsetting" does not mean that regulatory biodiversity offsetting mechanisms cannot have beneficial effects. In some cases, a certain level of "biodiversity destruction" may be deemed socially desirable to achieve economic and social objectives. This is particularly the case in countries with major development objectives, which have done little damage to biodiversity in the past. In such cases, regulatory biodiversity offsetting can provide a framework for framing and limiting the destruction of biodiversity, while also imposing restoration obligations. If they are well designed, these mechanisms can be a useful tool, even though the "destruction" and "restoration" are not strictly equivalent. Several countries in the southern hemisphere are supporting this use case.

The case of voluntary biodiversity offsetting is different. Because it is "non-mandatory", it cannot have a coercive effect on the reduction of negative impacts, which is an important aspect of the

effectiveness of regulatory mechanisms. By opening up the possibility of "cancelling out" negative impacts without providing an effective framework for their mitigation, it could create opportunity effects, with players favouring the purchase of credits over the reduction of impacts when this is less costly. Given the various risks weighing on the evaluation of the "biodiversity gains" associated with credits, and the importance of reducing negative impacts, the real value of the contribution of a voluntary offset mechanism to global biodiversity objectives would be subject to significant risks.

In any case, because of this uncertainty about its real value for biodiversity, a voluntary biodiversity offset mechanism would probably be the target of criticism, particularly from the scientific world and conservation NGOs. This issue of credibility could discourage potential buyers, and therefore result in fragile demand.
Not relying on a "compensation" principle, and not equating positive impacts with negative impacts, also makes it possible to avoid certain technical and political difficulties. This point is mentioned in The Biodiversity Consultancy's 2022 report: "Excluding the use of credits for offsetting also avoids the many thorny technical and practical challenges with ensuring offsets are used appropriately".

It therefore seems advisable, when designing a voluntary biodiversity certificate mechanism, not to rely on an offsetting principle. This is to guard against the risks mentioned, but also because this contested use case could undermine the credibility of biodiversity certificates in general, which nevertheless offer promising prospects.

However, the development of voluntary mechanisms has several advantages, particularly where there is no regulatory mechanism, but also to allow experimentation, to help extend and improve the latter, or to supplement it. To avoid the pitfalls of voluntary offsetting, they can be developed according to a "contribution" principle, where the claim of "biodiversity gains" does not allow to cancel out the "negative impacts" generated elsewhere and must be accounted for separately from them. The challenge will then be to propose voluntary contribution mechanisms that are credible, effective, and attractive to the actors of demand.

Glossary

BCA : Biodiversity Credit Alliance

GBF : Global Biodiversity Framework

IAPB : International Advisory Panel on Biodiversity Credits

MRV : Measurement, Reporting and Verification

OBC : Organization for Biodiversity Certificates

RSE : Corporate Social Responsibility

PSE : Payments for Environmental Services

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Independent publications

A. April 2024 – International Advisory Panel on Biodiversity Credits - Call for views.
https://www.iapbiocredits.org/resources#h.dn196u3pcbol

B. Dec 2023 – Biodiversity Credits Alliance - Demand side source motivations for biodiversity credits
https://www.biodiversitycreditalliance.org/media/BCAIssuePaper_DemandOverview(06122023)-final.pdf

C. December 2023 – World Economic Forum - Biodiversity credits : demand analysis and Market outlook
https://www3.weforum.org/docs/WEF_2023_Biodiversity_Credits_Demand_Analysis_and_Market_Outlook.pdf

D. December 2023 - World Economic Forum - A guide to support early use with high integrity
https://www3.weforum.org/docs/WEF_Biodiversity_Credits_A_Guide_to_Support_Early_Use_with_High_Integrity_2023.pdf

E. December 2022 - World Economic Forum - High level governance and integrity principles
https://www3.weforum.org/docs/WEF_Biodiversity_Credits_Markets_Integrity_and_Governance_Principles_Consultation.pdf

F. Dec 2022 – The Biodiversity Consultancy - Exploring design principles for high integrity and scalable Voluntary biodiversity credits

https://www.thebiodiversityconsultancy.com/fileadmin/uploads/tbc/Documents/Resources/Exploring_design_principles_for_high_integrity_and_scalable_voluntary_biodiversity_credits_The_Biodiversity_Consultancy__1_.pdf

G. 2024 - Integrity Council for the Voluntary Carbon Market 2022 - Core carbon principles
https://icvcm.org/the-core-carbon-principles/

H. January 2023 - Plan Vivo - High level integrity principles for biodiversity markets
https://www.planvivo.org/news/biodiversity-high-level-integrity-principles

I. June 2023 - Nature Finance - Carbone 4 - Harnessing biodiversity credits for people and planet
https://oneplanetsummit.fr/sites/default/files/2023-06/230622-reportonharnessingbiodiversitycreditsforpeopleandplanet-final-en_1.pdf

J. September 2023 - Verra - TBC - Verra Nature Framework
https://verra.org/wp-content/uploads/2023/09/SD-VISta-Nature-Framework-v0.1-for-Public-Consultation.pdf

K. November 2023 - Voluntary Carbon Markets Integrity Initiative - Claims code of practices
https://vcmintegrity.org/wp-content/uploads/2023/11/VCMI-Claims-Code-of-Practice-November-2023.pdf

L. February 2024 - Carbon Market Watch - Carbon market 101
https://carbonmarketwatch.org/publications/carbon-markets-101/

M. « Financing Nature: Closing the Global Diversity Financing Gap », Paulson Institute en partenariat avec The Nature Conservancy et le Cornell Atkinson Center for Sustainability. 12 juillet 2022. Le rapport estime à 711 milliards de dollars le déficit annuel moyen en matière de biodiversité d'ici 2030.
https://www.paulsoninstitute.org/conservation/financing-nature-report/

N. « Investing in the Planet's Safety Net », BIOFIN. Au 7 décembre 2022. Le rapport estime le déficit de financement de la biodiversité à 681 milliards de dollars par an.
https://www.biofin.org/news-and-media/investing-planets-safety-net

Interviews

20 interviews have been carried out between February and May 2024, with individuals from the following organisations:

Conservation NGOs
- IUCN France
- Conservation international
- Carbone Market Watch
- WWF

Organisations around biodiversity credits
- BCA (un atelier)
- OBC (un atelier)
- IAPB (deux entretiens)

Technical and research institutes
- CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement)
- IUEM (Institut Universitaire Européen de la Mer)
- CDC Biodiversité

Companies and Cooperatives
- Coopérative Ouest
- L'Occitane en Provence
- Pernod Ricard
- Kering

- Mirova
- South Pole

Other organisations

- SBTN (Science Based Targets Network)
- CGDD (Commissariat Général au Développement Durable)

And two interviews with representatives of indigenous people

- Almir Narayamoga Surui (peuple Paiter Surui)
- Benki Piyãko (peuple Ashaninka)

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Carbone 4 is the first independent consulting firm specialised in low carbon strategy, adaptation to climate change and restoration of biodiversity.

We are constantly on the lookout for signs of weakness, we deploy a systemic vision of the energy-climate-biodiversity constraint and put all our rigour and creativity to work in transforming our clients into climate challenge leaders.

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