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Biodiversity – What is it and could it become the new global commodity?

New Commodities to Meet New Demands

Commodity trading is driven by demand for the commodity in question. Typically, such demand relates to physical consumption, however, the boom in many new commodity classes, which are intangible digital assets, is being driven by the very modern demands of an increasingly interconnected, tech-savvy and issues-conscious global consumer base.

A prime example is the development of the carbon markets in response to the global demand for solutions to tackle climate change by reducing and/or removing global greenhouse gas (**GHG**) emissions. 'Compliance' and 'voluntary' carbon markets have commodified GHG emissions into various forms of 'carbon credits', which companies are either required by law to purchase (in compliance carbon markets like the EU ETS) or purchase voluntarily (in voluntary carbon markets).

While climate change and GHG emissions continue to dominate the headlines, 2023 could be the year that **biodiversity** enters the spotlight as the next global commodity.

An Introduction to Biodiversity

Very broadly, biodiversity refers to the amount and variety of organic life on the planet. Biodiversity is widely acknowledged to be under threat globally[1].

There is overlap between efforts to tackle biodiversity and climate change, both in terms of the roadblocks such efforts face, including a lack of funding, and the possible solutions each can utilise, such as the market-based approach of harnessing private sector financing by commodifying demand into credits.

However, the distinctiveness of climate change and biodiversity is confirmed by the United Nations' two flagship international agreements under its wider 'Environmental Programme'[2]:

- the UN Framework Convention on Climate Change (the **UNFCCC**); and
- the UN Convention on Biological Diversity (the **CBD**).

Global efforts under the UNFCCC and the CBD are happening in parallel, each with its own initiatives and regular international meetings, known as 'Conferences of Parties' (**COPs**). The most recent UNFCCC COP was held in Sharm el-Sheikh, Egypt (known as 'COP 27'), while the most recent CBD COP was held in Montreal, Canada (known as 'COP 15').

While biodiversity may ring some bells to those familiar with the UN's Sustainable Development Goals (**SGDs**)[3], publicity around biodiversity still has limited reach. In summary, under the CBD, a set of 4 overarching goals and 23 non-binding targets on biodiversity known as the 'Kunming-Montreal Agreement' or the 'post-2020 global biodiversity framework'[4] (the **GBF**) was agreed at COP 15, including the '30 by 30' targets – the commitment to protect 30% of land and sea by 2030. Governments

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[1] For example, data from the World Wide Fund For Nature's (WWF) latest *Living Planet Report* highlights an average biodiversity loss in terms of wildlife populations of 69% since 1970, and the European Union has stated that "*Biodiversity loss and ecosystem collapse are one of the biggest threats facing humanity in the next decade*".

[2] The United Nations Environment Programme or 'UNEP'.

[3] For example SDG 15 is "*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*". However, the SDGs are much broader than just biodiversity and are largely focused on human-centric topics of which protecting biodiversity is just one element. The link between biodiversity and the SDGs is set out in the UN's Technical Note: Biodiversity And The 2030 Agenda For Sustainable Development.

[4] Replacing the 'Aichi Biodiversity Targets' adopted in 2010. The UN admitted in its 'Global Biodiversity Outlook 5' report in 2020 that none of the nature-related targets were met.

are developing and implementing national biodiversity plans to demonstrate their progress towards upholding the GBF's targets. A lack of financing is an issue, just as it is with the global effort to tackle climate change[5].

Biodiversity Credits – the New Carbon Credits?

One potentially significant source of private sector finance to help fill the funding gap[6] is the development of **biodiversity markets**, in which biodiversity is commodified into standardised, traceable and tradeable 'biodiversity credits', operating on the same general principles as carbon credits in the voluntary carbon markets.

Distinct biodiversity markets are emerging because simply squeezing biodiversity into existing market-based solutions to climate change, like the voluntary carbon markets, has limitations. For example, while many voluntary carbon market projects focus on either preventing deforestation or planting new trees, the commodity being produced is still the avoided/reduced GHG emissions underlying the carbon credits. Any biodiversity gains are ancillary, although certain carbon standard bodies have methodologies to assess wider social and environmental gains, treating these gains as 'co-benefits'[7], which may allow those carbon credits to be traded at a premium. Also, carbon credit afforestation or reforestation projects may not plant native tree species, so the planted trees may be creating 'green deserts' which do not improve local biodiversity.

Many of the concepts and lessoned learned from the carbon markets do apply to the biodiversity markets, such as the key concept of 'additionality', which, in summary, means that 'but for' the financing generated by the sale of the biodiversity credits, the underlying project which is tackling biodiversity loss or preservation would not have been financially viable. For example, landowners in a developing economy may not be able to afford to design and implement such a project without the income stream generated by the sale of the biodiversity credits, so when companies commit to buy these credits, they are helping local people make a real-world positive difference.

Nature Positive Impacts, Not Offsetting

A variety of biodiversity credit schemes and methodologies are emerging, however, there are a number of hurdles to overcome before scalable biodiversity markets emerge. To begin, the motivation for companies to participate in any biodiversity market needs to be clear.

The voluntary carbon markets benefit from having a universal metric across all carbon standards – one carbon credit always represents one metric tonne of GHG emissions, which have been avoided/reduced from the atmosphere somewhere in the world, regardless of the type of project which generated those credits. Operating on a 'polluter pays' basis, companies use carbon credits to 'offset' their own GHG emissions. While certain carbon credits may be worth more than others on the market, in theory, all carbon credits have an equivalent value for offsetting purposes, as the underlying rationale is that one metric tonne of GHG emissions reduced/avoided in one location can be offset against another metric tonne of GHG emissions produced anywhere else in the world, making carbon credits a truly global and fungible commodity.

The dialogue on biodiversity credits is focused more on companies making '**nature positive**'[8] contributions, rather than on companies making 'reparations' for their own impacts on biodiversity through offsetting[9]. Companies may still choose to set corporate biodiversity targets, which may or may

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[5] The GBF's targets also include mobilising at least $200 billion a year for biodiversity funding from public and private sources (Target 19).

[6] The Coalition for Private-sector Investment in Conservation (CPIC)'s 2022 report *Finance for Nature* highlights challenges of achieving the UNEP's 2025 target of $384 billion a year in investment for "*nature based solutions*" (NbS) (and $484 billion a year by 2030) – the report states that current investment is $154 billion a year, less than half the 2025 target.

[7] For example, a project certified by Verra could also apply to be certified under either of Verra's co-benefit labelling programmes: (a) the Climate, Community & Biodiversity Standards, to demonstrate additional climate, community and biodiversity benefits generated by the project, or (b) the SD VISta, to demonstrate the project's contribution to the SGDs.

[8] This concept, which has become in effect the biodiversity markets' equivalent of the carbon markets' use of the term 'net zero', represents a paradigm shift from the business world's previous focus on simply minimising damage done to nature. This concept has been widely endorsed, including by G7 leaders whose *G7 2030 Nature Compact* includes as the second of its four 'pillars' "*Investing in nature and driving a nature positive economy*".

[9] Offsetting can be used in a biodiversity context too but this is beyond the scope of this article.

not be linked to that company's own impact on biodiversity[10]. The concept of offsetting remains highly controversial, so the biodiversity markets could avoid many of the criticisms attached to the voluntary carbon markets by focusing on creating positive incentives for landowners and local communities to conserve and restore biodiversity.

The Challenge of Creating a Metric for Biodiversity Credits

However, the problem of creating a user-friendly metric for fungible biodiversity credits remains. In other words, what does a single biodiversity credit represent, and how do project developers demonstrate a biodiversity credit's value to the market?

Biodiversity as a concept is extremely broad and locally specific. One project might seek to restore the population of an endangered species, and another to preserve a healthy but at-risk ecosystem – both fall under the umbrella of biodiversity but are very different in focus. Developing dozens of niche biodiversity methodologies and credit schemes for different project types would not create viable, scalable biodiversity markets comparable to the carbon markets.

Therefore, the challenge is to develop a metric for biodiversity credits which creates a fungible commodity and could be used across a wide variety of biodiversity project types.

One example is the methodology being developed by the Wallacea Trust[11], whose '**basket of metrics**' approach is inspired by the Consumer Price Index[12], and is designed to be used across all 'ecoregions'[13]. At least five metrics suitable to the relevant ecoregion would be chosen by a project developer and measured at the start of the relevant biodiversity project to provide 'baseline' data, and these metrics would then be measured every few years against this baseline. For the Wallacea Trust, the metric of a single biodiversity credit would be a 1% uplift or avoided loss in the median value of this basket of metrics per hectare of project land against the baseline.

As with carbon credits, the demand for and value of biodiversity credits will be strongly linked to the perceived integrity of the developing biodiversity markets, whose credits will need to be based on trust-worthy, objective and scientific verification of the biodiversity impacts of the underlying projects.

Established carbon standards like Verra[14] are developing their own standards for certifying biodiversity projects, due for publication this year, indicating that the key players in the voluntary carbon markets aim to dominate the nascent biodiversity markets too. In the case of the Wallacea Trust, biodiversity credits using its methodology will be issued by the carbon standard Plan Vivo[15].

Interesting possibilities may emerge, such as 'asset-stacking' where a single project would be dual-certified to produce both carbon credits and biodiversity credits if its activities simultaneously reduce/avoid GHG emissions and produce nature positive impacts on biodiversity, subject to considerations including additionality and the avoidance of double counting.

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[10] However, a recent McKinsey report on Fortune Global 500 companies found that "*although 51 percent of companies acknowledge biodiversity loss in some way, only 5 percent have set quantified targets in addition to that acknowledgment*", while in contrast "*most companies have climate-related targets (83 percent) or at least acknowledge climate change (an additional 15 percent)*" – the report acknowledges that a lack of a standardised approach to measuring "*natural capital and ecosystem services*" is preventing companies from moving beyond merely acknowledging the challenge to taking active steps.

[11] For a summary of its approach to biodiversity credits see its 'Operation Wallacea' website here.

[12] Which assesses the prices of a basket of goods and services annually to track inflation.

[13] Creating a standardised taxonomy is a challenge for the biodiversity markets but broadly speaking 'ecoregions' refers to large geographic areas made up of similar smaller ecosystems.

[14] Verra website, *New Biodiversity Methodology*, 3 November 2022.

[15] Plan Vivo website, *About PV Nature*. A public consultation on its biodiversity standard launched on 30 January 2023. This methodology envisages biodiversity credits (which it calls 'Plan Vivo Biodiversity Certificates' or 'PVBCs') as being based on either 'uplift' or 'avoided loss' – uplift projects may issue credits at any time upon verification of the biodiversity gains, while avoided loss projects may issue credits up to an annual cap.

Trading Biodiversity Credits

As a digital asset representing real-world nature positive activity, the legal treatment of biodiversity credits should follow the treatment of voluntary market carbon credits. While no authoritative source has yet categorised carbon credits, it is generally accepted that they do represent a form of **personal property**[16] and therefore they can be bought and sold much like any other commodity.

Market standard biodiversity sale and purchase contracts have yet to emerge but a 'primary market' sale and purchase contract, like a carbon market 'ERPA'[17], will need to consider a variety of legal, commercial and operational issues, including the extent of the seller/project developer's obligations to the buyer regarding control over the project and access to information relating to the project, and whether payments for biodiversity credits will be by way of advance payment, periodic payment on delivery of the credits or a combination of the two.

Any sale and purchase contract, whether primary or secondary, will also need to consider the application of any binding rules of the relevant biodiversity standard in question. In the voluntary carbon markets, a Gold Standard carbon credit cannot simply be converted into a Verra carbon credit because each carbon standard operates independently, and any buyer or seller of those credits must have an account with the relevant carbon standard's registry, which entails agreeing to that registry's legally binding terms of use. If these same bodies come to dominate the biodiversity markets, then similar restrictions and rules are likely to apply.

These emerging 'voluntary' biodiversity markets will need to evolve alongside other new or under-development biodiversity schemes being created by national legislation, such as the England's forthcoming 'biodiversity net gain' requirements for all planning permission applications[18].

While it is still early days for the biodiversity markets, the growing demand by the public and private sectors for greater transparency, accountability and action on wider social and environmental issues indicates that biodiversity could emulate the success of the carbon markets and become a new global commodity.

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[16] In other words, for the purposes of English law, although they may not be either 'choses in action' or 'choses in possession', parties may still transfer title in those credits.
[17] Emissions reductions purchase agreements.
[18] Under the Environment Act 2021, from approximately November 2023, planning permission applications in England will need to deliver at least a 10% biodiversity net gain for a period of at least 30 years. Developers can either demonstrate actual gains through on or off-site measures, or purchase biodiversity credits from the government under a proposed statutory biodiversity credit scheme, although a recent government press release has described the use of such credits as a "*last resort*".

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