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BIODIVERSITY CREDITS - AN OPPORTUNITY TO CREATE A NEW CREDITING FRAMEWORK FOR NATURE MARKETS

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Biodiversity Credits -
An Opportunity to Create a New Crediting Framework for Nature Markets

- *Biodiversity credits have to potential of accelerating funding for biodiversity conservation while benefiting local communities and biodiversity custodians.*
- *To make voluntary biodiversity credits (biocredits) work for nature and its custodians, we need to step out of the carbon credit framing for both technical, social and practical reasons.*

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UK Government Partnerships for Forests VALUENATURE

SUMMARY

This paper argues that biodiversity credit systems require a different architecture than the carbon market. Carbon and biodiversity are fundamentally different problems with distinct solutions, and their respective crediting systems need to accommodate that difference for technical, social and practical reasons. The authors highlight seven key considerations that should be taken into account in the development of a biodiversity credit system.

1. Accounting for the diversity of ecosystems globally and considering recovery dynamics including factors such as climate change and disturbances.

2. Utilizing multivariate approaches and metrics in monitoring and reporting to measure ecological outcomes, rather than a single metric, one-size-fits-all approach.

3. Ensuring biodiversity credits consider nature and local communities dynamics, and framed through a socio-ecological lens.

4. Representing meaningful time horizons for biodiversity conservation outcomes, including a permanence and durability component of projects.

5. Linking biodiversity credits to the people, communities, and land tenure, and ensuring long-term financial security and legal guarantees for biodiversity projects. Hence, combining process milestones for mitigating threats and disturbances with ecological milestones and performance-based payment schedules to demonstrate biodiversity conservation results.

6. Biodiversity credit issuing projects, their evaluation, monitoring and reporting, must be meaningful and understandable to nature stewards.

7. Differentiating between preservation and restoration will help achieve the target of protecting 30% of the earth by 2030 and ensure funding flows towards valuable restoration projects, while also equalizing costs and increasing market value of conservation related credits.

By considering these key elements, a new framework can effectively accelerate funding for biodiversity conservation, transparency in land tenure arrangements and funding flows is critical to giving assurance to investors and fully embracing a biodiversity credit system.

Keywords: Biodiversity credits, Biocredits, Global Biodiversity Framework

About Terrasos:

We are a Colombian B-Corp that specializes in structuring and operating environmental investments, with a particular emphasis on biodiversity management. Our work focuses on four main areas: voluntary environmental investments and biodiversity compensation of development projects, impact and policy analysis, deployment strategies, and knowledge management. We are guided by the belief that sustainable development requires a balance between the economic, social, and environmental fuctionality within landscapes.

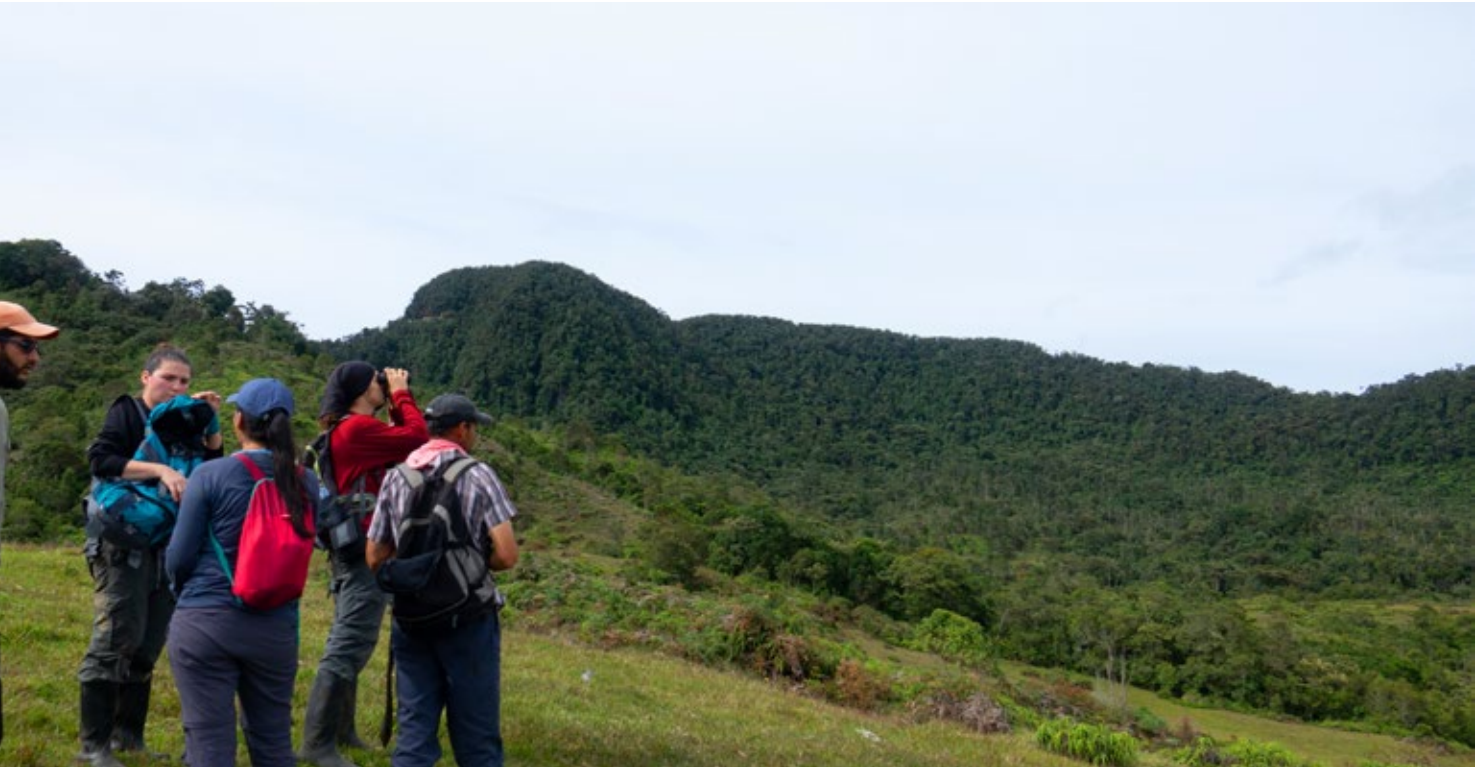
Biodiversity conservation is a different problem from managing climate change, and so biodiversity markets will require a different architecture than the carbon market. As the debate over the integrity, functionality and governance of a voluntary biodiversity crediting system heats up, there are insights specific to biodiversity conservation that should be considered. These insights are pertinent to the development of this new financing mechanism. To make biocredits work for nature and its custodians, and to successfully accelerate funding for biodiversity conservation, a new framework is needed.

First of all, **carbon and biodiversity are fundamentally different problems with distinct solutions, and their respective crediting systems need to accommodate that difference** for technical, social and practical reasons. Carbon credits are created so that emitters can compensate on an annual basis, whereas biocredits are created to address species loss, threats and permanent habitat destruction that has accumulated over time. The nature of the problem they address is different.

Operationally speaking, a **biodiversity credit system should deliver measurable ecological outcomes and long-term certainty to investors and biodiversity custodians.**

These ecological outcomes, represented in biocredits, can be transferred and sold to individuals and companies seeking to make claims on those outcomes. Ecological credit systems typically, not always, have a performance-based approach where credits represent realised measurable outcomes.

Biodiversity conservation is a different problem from managing climate change.



Here are some key considerations for inclusion in a new framework:

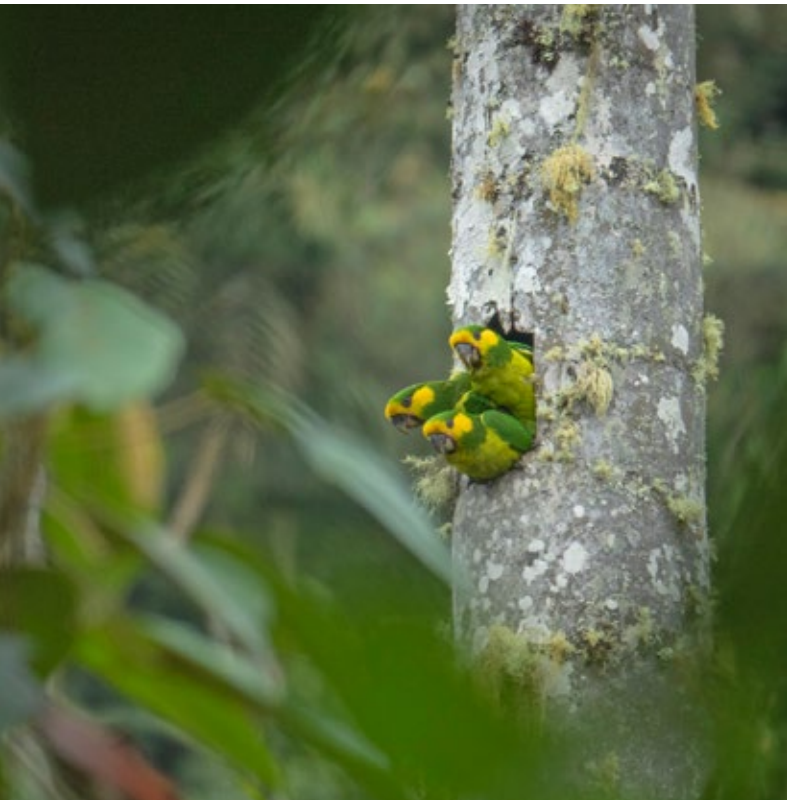
1. The *diversity* of Biodiversity between ecosystems globally means there are no two places alike. This results in varied recovery dynamics between ecosystems. Some regenerate quite rapidly, for example tropical humid forests, while others can take decades like the boreal forests. Recovery patterns will depend on disturbances[1] and factors such as climate change.[2 3] This mandates thinking about biodiversity credits in a way that is coherent with natural dynamics and does not create a bias towards faster recovering systems. Hence it is important that a biocredit system recognizes differences and can "normalise" among different management interventions and sites based on a set of criteria that represent global ecological significance. For example, the use of IUCN's Red List of Ecosystems as a global standard for assessing risks or the Australian governments use of the habitat hectares approach[4].

1. Polazzo, F., & Rico, A. (2021). Effects of multiple stressors on the dimensionality of ecological stability. *Ecology letters*, 24(8), 1594-1606.

2. Truchy, A., Sarremejane, R., Muotka, T., Mykrä, H., Angeler, D. G., Lehosmaa, K., ... & McKie, B. G. (2020). Habitat patchiness, ecological connectivity and the uneven recovery of boreal stream ecosystems from an experimental drought. *Global Change Biology*, 26(6), 3455-3472.

3. Barboza, F. R., Ito, M., & Franz, M. (2018). Biodiversity and the Functioning of Ecosystems in the Age of Global Change: Integrating Knowledge Across Scales. *YOUMARES 8–Oceans Across Boundaries: Learning from each other,* 167.

4. Mccarthy, M. et al. (2004). The habitat hectares approach to vegetation assessment: An evaluation and suggestions for improvement. Ecological Management and Restoration. 5. 24-27.



2. Measuring ecological outcomes related to biodiversity conservation or recovery requires analysing different types of indicators that speak to ecosystem structure, composition, and function, that ultimately, inform ecosystem integrity. Unlike measuring just measuring biomass to determine carbon stocks and removals. Biocredits will need multivariate approaches and metrics in their monitoring and reporting schemes, which will be influenced by the ecosystem and project size. Rather than biocredit standards being too prescriptive, it will be better to have methodologies whereby metrics are validated as appropriate for the specific system. Clearly creating a methodology that can withstand critique and adapt over time will not be easy. Finding the right balance between accuracy and simplicity is a critical need for a healthy biodiversity market.

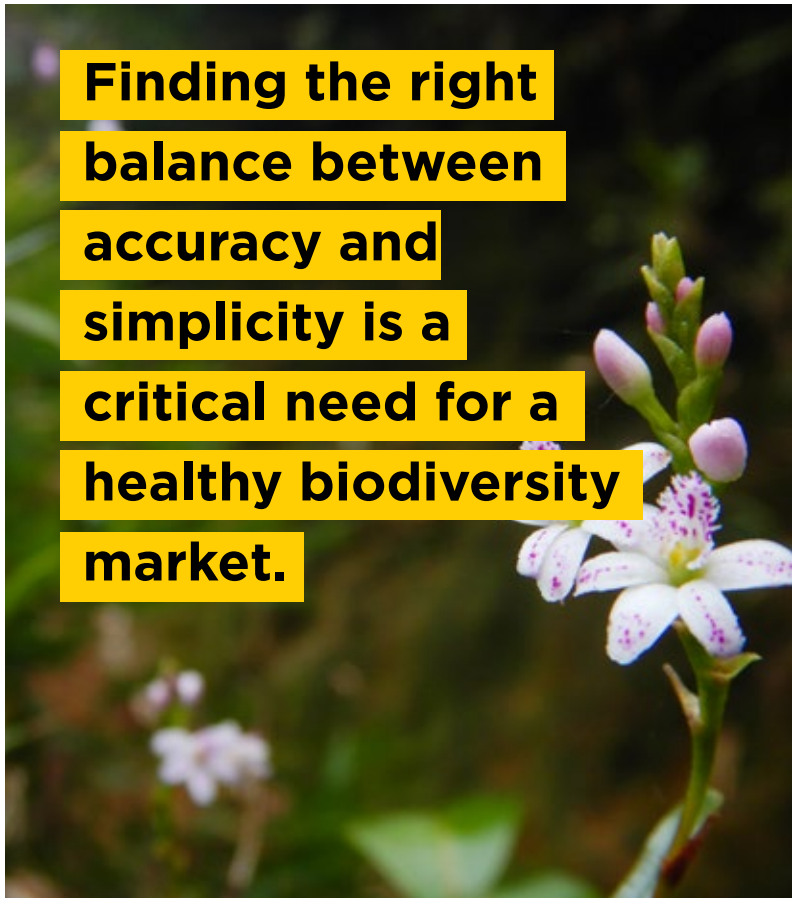
3. The process of production of biodiversity credits is different to the process for carbon crediting. **Biodiversity credits can only be generated with nature and the people taking care of those natural ecosystems,** unlike carbon credits which can be generated from multitude of sources: industrial, residential, agriculture, ecosystems and transportation. For biocredits, this means that time horizons for delivering measurable ecological results can only be framed through a socio-ecological lens that considers local social and ecological processes. Biodiversity outcomes are also measured through the legal and social strength of the societies around them the ensure the sustainability and permanence of conservation actions.

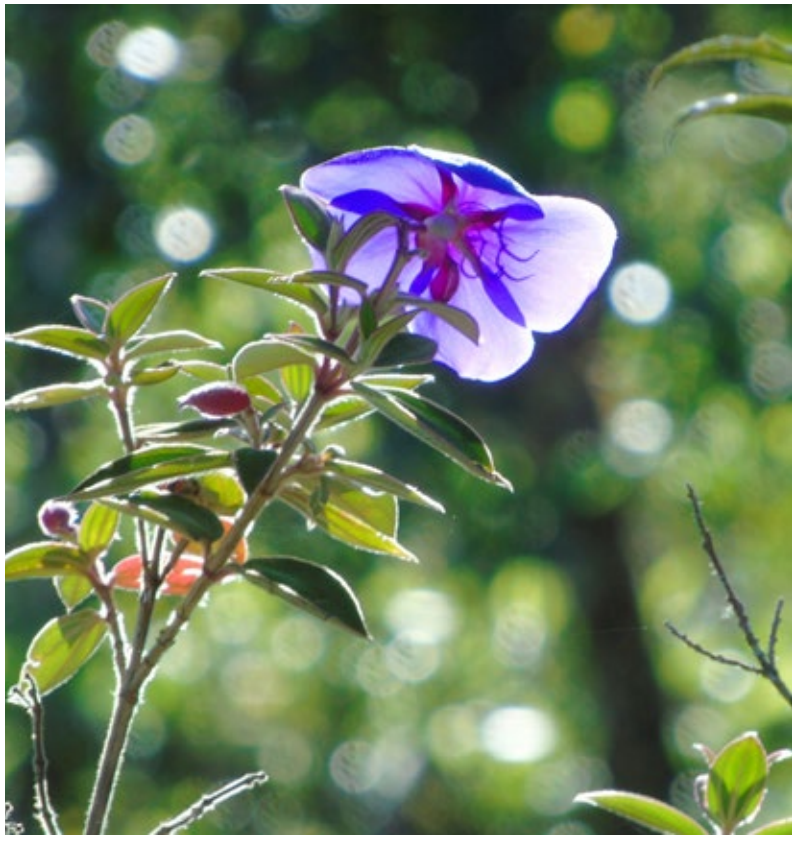
4. Credits need to represent meaningful time horizons for biodiversity conservation outcomes. Biodiversity changes and impacts happen over time, where annual variations (both positive and negative) can occur due external factors such as changing climatic conditions or shifting baselines, for example. **Annual ecological gains, like in the case of carbon, where credits represent annual emissions reductions, is largely unrealistic, costly and risky.** To do this efficiently and effectively, biodiversity credits need to include a permanence and durability component in their methodology definition. For example, 10m^2 or 1 hectare of endangered, conserved, or restored habitat for 30 years or in perpetuity. That is what nature needs. Other nature crediting programs in the compliance markets[5] have already identified the importance of this. In the case of the United States a wetland credit and in Australia one biodiversity credit represent management in perpetuity.

5. Salzman, J., Bennett, G., Carroll, N., Goldstein, A., & Jenkins, M. (2018). The global status and trends of Payments for Ecosystem Services. *Nature Sustainability,* 1(3), 136-144.

5. Biodiversity conservation and restoration processes are directly related to the everyday decisions that people make, and in many biodiversity hotspots globally, these processes are inherently linked to the will of biodiversity custodians and their land tenure. Thus **biodiversity credits will be intimately linked to the people, the communities and their land tenure and titles.** The ability for biocredits to contribute to the 30x30 Global Biodiversity Framework goals and long-term biodiversity outcomes is also related to the financial needs of the potential stakeholders involved, which need to be underwritten by long-term financial security (e.g. functional credit market, endowments, insurance schemes), & legal guarantees (land titles and contracts, formal protection status), which will enable long term stewardship and the durability and permanence of biodiversity projects.

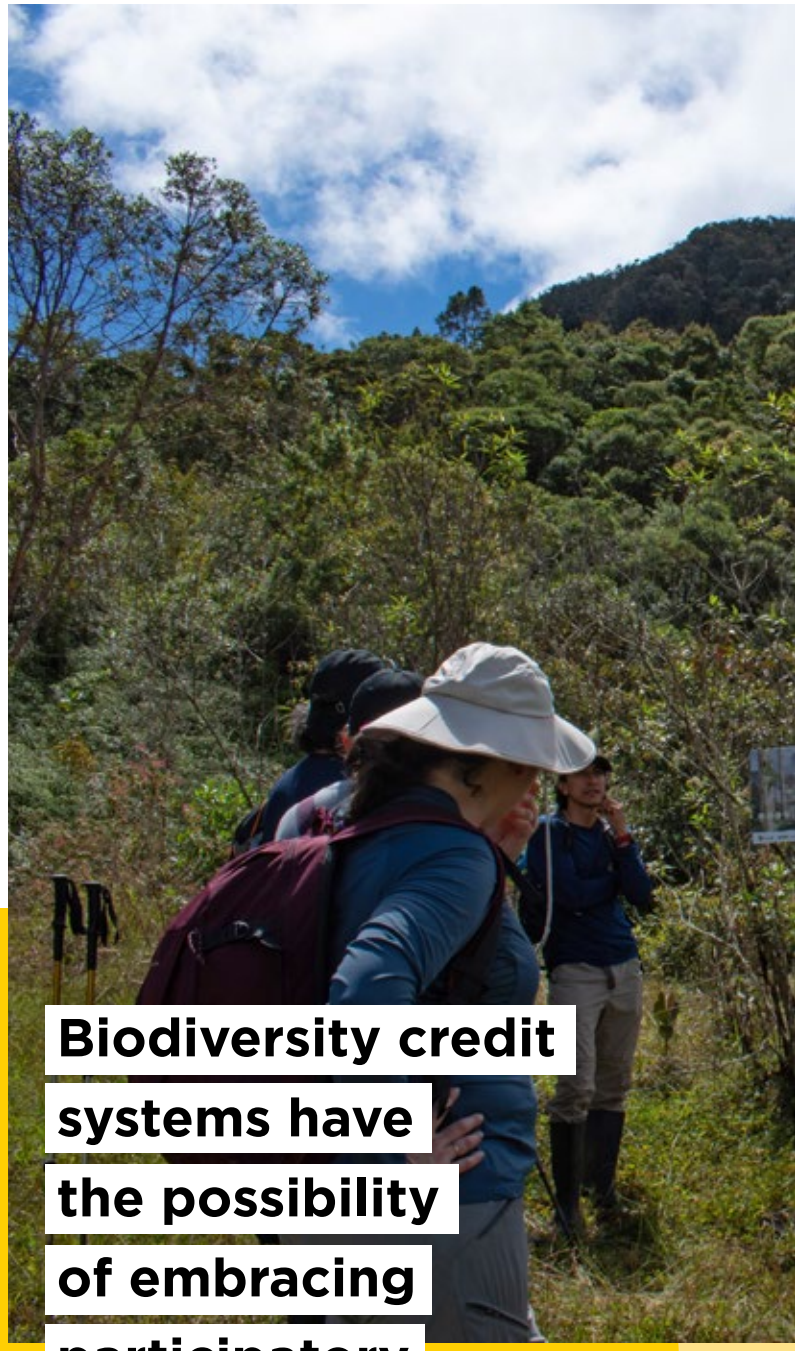
Hence, combining process milestones related to mitigating and reducing threats and disturbances with ecological milestones, and adequate performance-based payment schedules that give projects appropriate cash flows, are appropriate for demonstrating biodiversity conservation results and unlocking incentives. For example, if a community is living in a highly strategic area for biodiversity conservation, but it has no formal land title, a key milestone of a conservation project in this area could be securing long term use rights of that land by communities tied to long term natural resources management. **Transparency of both land tenure arrangements and funding flows will give the sort of assurance to investors that has kept them from fully embracing the voluntary carbon market.**



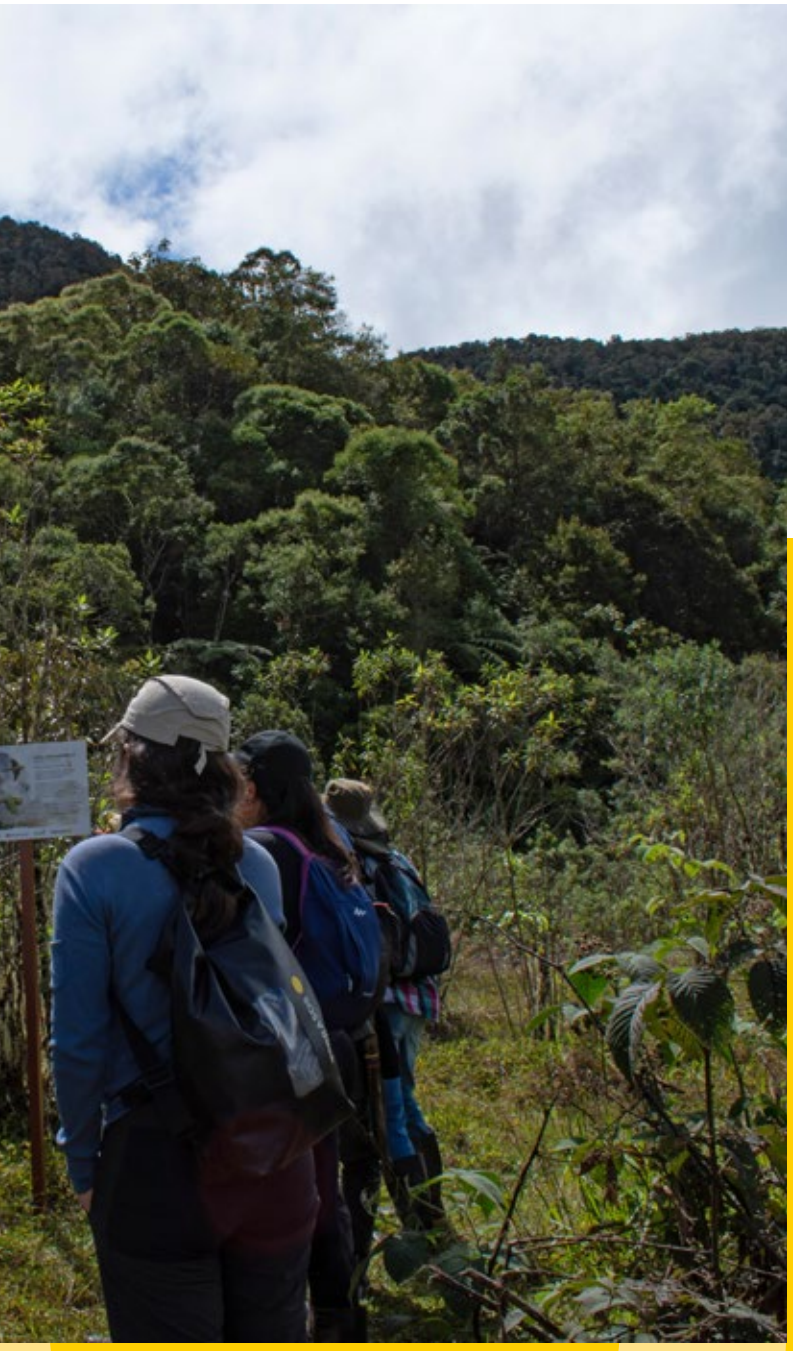


6. Given biodiversity credits will have people and communities at their heart, many of which have historically taken care of those natural ecosystems, **biodiversity credit issuing projects, their evaluation, monitoring and reporting,** must be meaningful and understandable to nature stewards. Biodiversity credit systems have the possibility of embracing participatory monitoring processes that start out with conversations in local communities about which biodiversity is relevant in that specific context. The social process will be key to ensuring permanence. Without sacrificing rigour there are practical and cost-effective means to estimate ecosystem integrity and biodiversity that are relatable to local communities. If there is something powerful in biodiversity credits is that we all know what species diversity can look like, unlike a ton of carbon.

7. Lastly, achieving the Global Biodiversity Framework targets (Protecting 30% of the earth by 2030) requires that both preservation and restoration of natural ecosystems are eligible crediting activities. Preservation is more valuable from an ecological perspective but is inherently cheaper than restoration activities. If these activities are not differentiated between them the sale of credits from restoration outcomes may be at risk, as funding will likely flow to the cheaper preservation projects. The ecological value of distinct conservation credits might drive their market value up, equalising costs slightly. Differentiating activities will allow for 30x30 restoration targets to be aligned and this value realised by buyers.

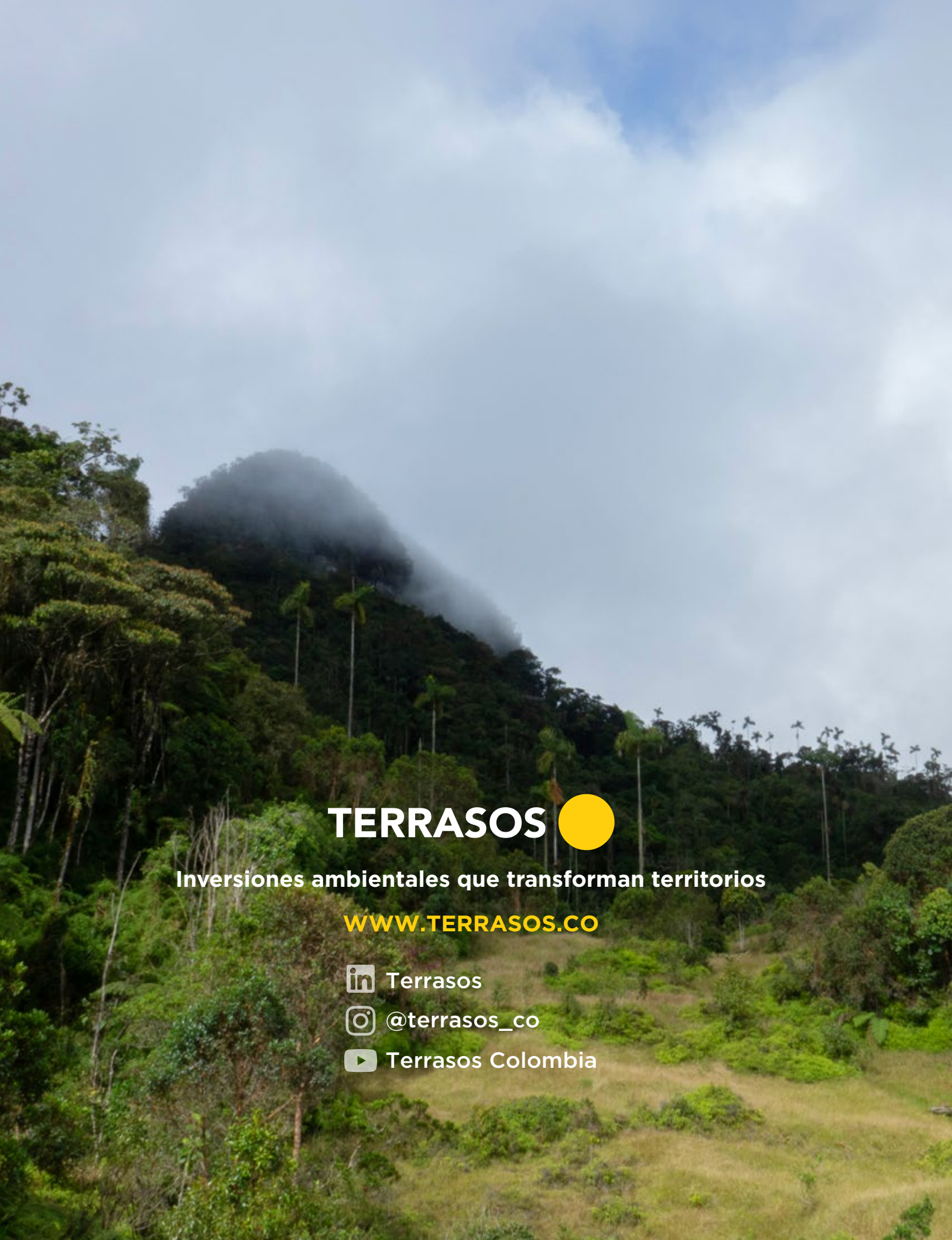


Biodiversity credit systems have the possibility of embracing participatory monitoring processes that start out with conversations in local communities.



Finally, it is worth noting that for a credit system to work, credit prices will need to cover the true cost of management. People need to be paid well to do good work and to protect and restore the environment. The economic driver and rationale needs to exist. The challenge is to create the protocols and standards that promote alignment of interests so that everyone is appropriately compensated as conservation outcomes are delivered. This applies to landowners and stewards, project developers and managers, investors, registries, buyers and sellers.

We are faced with dire consequences to biodiversity, climate, water, the ocean and soils unless we deploy the best designed tools to enable the corporate sector to contribute efficiently to the work of governments and individuals. Biodiversity markets will need to have some of the same mechanisms of existing ecological markets, but they will also require bespoke and unique arrangements. Conservation and management of biodiversity deals with preserving the billions of species that co-inhabit the planet with us. The climate challenge is fundamentally a geo-chemistry equation. Both must succeed.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