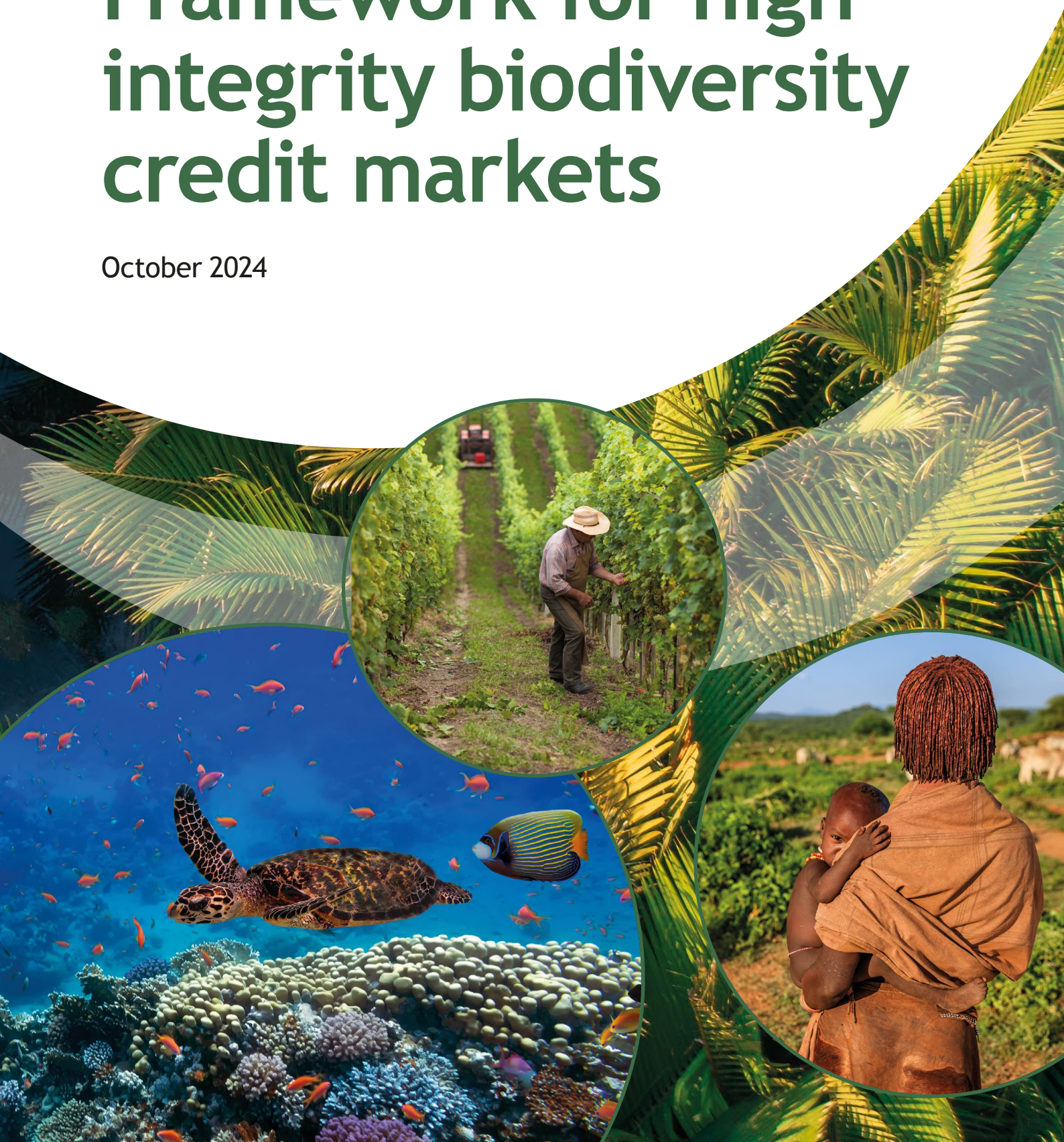
IAPB International Advisory Panel on Biodiversity Credits

Framework for high integrity biodiversity credit markets

October 2024



Suggested citation: International Advisory Panel on Biodiversity Credits (2024). Framework for high integrity biodiversity credit markets.

Disclaimer: The Framework is a result of a collaborative process facilitated by the International Advisory Panel on Biodiversity Credits. The content and the positions expressed herein are those of the International Advisory Panel on Biodiversity Credits, and do not equate to endorsement or necessarily reflect the perspectives of the Working Group members and rapporteurs, Knowledge Partners, and Secretariat team, nor of the organisations to which they are affiliated.

Contents

Acknowledgements

The International Advisory Panel on Biodiversity Credits (IAPB) is made up of more than 25 senior representatives from finance, business, academia non-governmental organisations, and Indigenous Peoples and local communities. The co-chairs are immeasurably grateful to Panel members for their considerable breadth and depth of expertise, for their dedication, support and inputs into the creation of this Framework, and for all their involvement in IAPB over the last year. Additional and significant thanks and recognition are extended to Panel members that co-led IAPB's five Working Groups focused on the topics of Measurement, Demand, Supply, Stewardship and Governance.

Co-chairs: **Dame Amelia Fawcett and Sylvie Goulard.**

Panel members: **Razan Al Mubarak** (IUCN; United Nations Climate Change High-Level Champion); **Professor Alexandre Antonelli** (Royal Botanic Gardens, Kew); **Bai Yunwen** (Institute of Finance and Sustainability); **Erin Billman** (Science Based Targets Network); **Robert Calcagno** (Oceanographic Institute, Prince Albert I of Monaco Foundation); **David Craig** (Taskforce for Nature-related Financial Disclosures; Natural History Museum); **Erick Decker** (AXA); **Ulrike Decoene** (AXA); **Lauren Ferstandig** (The Nature Conservancy); **Alexis Gazzo** (EY France); **Mark Kenber** (VCMI); **Akanksha Khatri** (World Economic Forum); **Johan Maree** (ValueNature); **Swapan Mehra** (Iora Ecological Solutions); **Hiromichi Mizuno** (MSCI, Inc.; former Special Envoy to United Nations Secretary General); **Jennifer Molnar** (The Nature Conservancy); **Dr Simon Morgan** (ValueNature); **Jennifer Morris** (The Nature Conservancy); **Pauline Nantongo Kalunda** (Environmental Conservation Trust of Uganda); **Tony O'Sullivan** (Pollination); **Carlos Manuel Rodríguez** (Global Environment Facility); **Mariana Sarmiento** (Terrasos); **Chief Almir Narayamoga Surui** (Leader of the Paiter Surui People); **Ilona Szabó de Carvalho** (Igarapé Institute); **Jennifer Tauli Corpuz** (Nia Tero); **Dr Rhian-Mari Thomas OBE** (Green Finance Institute); **David Vaillant** (BNP Paribas Asset Management); **Dr Simon Zadek** (NatureFinance); and **Philippe Zaouati** (Mirova).

Working Group co-leads: **David Craig** (Taskforce for Nature-related Financial Disclosures; Natural History Museum); **Professor Richard Field** (University of Nottingham); **Alexis Gazzo** (EY France); **Akanksha Khatri** (World Economic Forum); **Pauline Nantongo Kalunda** (Environmental Conservation Trust of Uganda); **Tony O'Sullivan** (Pollination); **Carlos Manuel Rodríguez** (Global Environment Facility); **Professor Franziska Schrodt** (University of Nottingham); **Chief Almir Narayamoga Surui** (Leader of the Paiter Surui People); **Dr Rhian-Mari Thomas OBE** (Green Finance Institute); **David Vaillant** (BNP Paribas Asset Management); and **Dr Simon Zadek** (NatureFinance).

IAPB is immensely grateful for the generosity and wisdom of many people from around the globe, who were invaluable in the development of this Framework. The following individuals and organisations deserve a special mention for their contributions.

IAPB is also grateful for the participation of a number of additional Indigenous Peoples and local community members for their participation and input, and whose privacy we have respected by not naming in this document.

The content and the positions expressed in this Framework are those of IAPB and do not equate to endorsement or necessarily reflect the perspectives of those mentioned below who provided input, nor of the organisations to which they are affiliated. IAPB hopes that the Framework reflects well the range of contributions received but IAPB alone takes responsibility for the final outputs.

Working Group members

IAPB would like to express their huge gratitude to all members of IAPB's five Working Groups, for their extensive and valued contributions and insights, which were instrumental in the development of the Working Group products from which this Framework is drawn.

Ghaamid Abdulbasat (Tanzania Biodiversity Organisation); **Razan Al Mubarak** (IUCN; United Nations Climate Change High-Level Champion); **Veronique Andrieux** (WWF France); **Professor Alexandre Antonelli** (Royal Botanic Gardens, Kew); **Chizuru Aoki** (Global Environment Facility); **Perumal Arumugam** (UNFCCC); **Marissa Balfour** (The Nature Conservancy); **Marine de Bazelaire** (HSBC); **Erin Billman** (Science Based Targets Network); **Guilherme Bircol** (Belterra Agroflorestas); **Jean Boissinot** (Banque de France); **Oliver Bolton** (Earthly UK); **Solenn Le Bray** (aDryada); **Quinn Buchwald** (Conservation International); **Drea Burbank** (Savimbo); **Dr Antoine Cadi** (RESTORE, The Biodiversity Prototype Fund); **Giulia Carbone** (World Business Council for Sustainable Development); **Ralph Chami** (Blue Green Future); **Adele Cheli** (GSK); **Alena Cierna** (UN Environment Programme World Conservation Monitoring Centre); **Tim Coles** (Operation Wallacea); **Laurel Constanti Crosby** (Gold Standard); **Naïg Cozannet** (AFD); **Karine Marion** (AFD); **Raphaele Deau** (UNEP); **Erick Decker** (AXA); **Stephen Edwards** (South Pole); **Dr Sophus zu Ermgassen** (University of Oxford); **Pablo Fernandez** (Ecosecurities); **Dr James Fitzsimons** (The Nature Conservancy); **Fabiola Flex** (Organization for Biodiversity Certificates); **Ňkwi Flores** (Kinray Hub; Chichupamp Runa Ayu-Yakta Ancestral Territory Land Trustee); **Cyril Gomez** (Oceanographic Institute, Prince Albert I of Monaco Foundation); **Simas Gradeckas** (Bloom Labs); **Jan Hania** (Iwi Māori Tribal Nations of Aotearoa, New Zealand); **Onno van den Heuvel** (UNDP); **Valerie Hickey** (World Bank); **Kerry Ten Kate** (Finance Earth; RSPB); **Mark Kenber** (VCMI); **Bogolo Kenewendo** (United Nations Climate Change High-Level Champion); **Gertrude Kenyangi** (Forest-dependent Indigenous and Local Communities of Uganda); **Cindy Kobei** (Ogiek Community, Kenya); **Erika Korosi** (Conservation International); **Ingrid Kukuljan** (Federated Hermes); **Marco Lambertini**; **Frannie Leautier** (SouthBridge Investment); **Carolin Leeshaa** (KPMG Australia); **Maxi Louis** (Namibian Association of CBNRM Support Organisations); **Camille Maclet** (BNP Paribas Asset Management); **Professor Martine Maron** (School of the Environment, University of Queensland); **Emily McKenzie** (Taskforce for Nature-related Financial Disclosures);

Swapan Mehra (Iora Ecological Solutions); **Sophie Menard** (Environmental Resources Management); **Silvia Merler** (Algebris Fund); **Hiromichi Mizuno** (MSCI, Inc.; former Special Envoy to United Nations Secretary General); **Dr Simon Morgan** (ValueNature); **Pedro Moura Costa** (BVRio Environmental Exchange); **Paul Muthaura** (Africa Carbon Markets Initiative); **Justin Mundy** (SLM Partners); **Esther Netshibhongweni** (Biodiversity Credit Alliance Community Advisory Panel); **Asger Strange Olesen** (International Woodland Company); **Arthur Pivin** (Carbone 4); **Graham Prescott** (The Biodiversity Consultancy); **Karen Sack** (Ocean Risk and Resilience Action Alliance); **James Salzman** (University of California, Los Angeles); **Mariana Sarmiento** (Terrasos); **Holger Schmid** (NatureFinance); **Vian Sharif** (NatureAlpha; FNZ); **Priya Shyamsundar** (The Nature Conservancy); **Dr Juha Siikamäki** (International Union for Conservation of Nature); **Emil Sirén Gualinga; Jessica Smith** (UNEP FI); **Dr Per Espen Stoknes** (BI Norwegian Business School); **Chris Stone** (Conservation International); **Pavan Sukhdev** (GIST Impact); **Dr Kimberley Swords** (Riffle Advisory); **Jennifer Tauli Corpuz** (Nia Tero); **Sebastien Treyer** (IDDRI); **Craig Tribolet** (APRIL Group); **Eliette Verdier** (I Care); **Marion Verles** (Sustain Cert); **Sinclair Vincent** (Verra); **Gregory Watson** (Inter-American Development Bank); **Dominic Waughray** (World Business Council for Sustainable Development); **Guy Williams** (Pollination); **Alvar de Wolff** (Bregal Sphere); **David Wood** (Wadappt Nature Market); and **Daniel Zarin** (Wildlife Conservation Society).

Working Group rapporteurs

IAPB is enormously grateful to the rapporteurs of IAPB's five Working Groups (Measurement, Demand, Supply, Stewardship, Governance), and their home organisations for making them available, for their tireless work supporting the co-leads and Working Group members across many months to develop a set of high-quality Working Group publications.

Quentin Guibert (EY France); **Franziska Lehmann** (EY); **Samruddhi Kothari** (NatureFinance); **Thomas Pickford** (The Nature Conservancy); **Thea Philip** (Pollination); **Jurgis Sapijanskas** (Global Environment Facility); **Alessandro Valentini** (World Economic Forum); **Marina Walder Galiano** (Paiter Surui People); and **Hanlin Wang** (World Economic Forum).

Knowledge Partners

IAPB is extremely grateful to IAPB's Knowledge Partners, for bringing expertise across the natural sciences, economics, finance and law, for their generous inputs and contributions, and for helping to ensure the Panel's conclusions are rooted in high-quality, robust research, evidence and knowledge.

Knowledge Partners co-leads: **Robert Calcagno** (Oceanographic Institute, Prince Albert I of Monaco Foundation) and **Professor Ximena Rueda** (School of Management, Universidad de los Andes, Colombia).

Knowledge Partners members: **Professor Alexandre Antonelli** (Royal Botanic Gardens, Kew); **Maria Antonova** (UN Environment Programme World Conservation Monitoring Centre); **Olivier Blumberger** (Fondation pour la recherche sur la biodiversité); **Natacha Boric** (Finance for Biodiversity Foundation); **Rodrigo Cassola** (UN Environment Programme World Conservation Monitoring Centre); **Dr Kate Hardwick** (Royal Botanic Gardens, Kew); **Dr Aidin Niamir** (Senckenberg Biodiversity and Climate Research Centre); **Dr David Obura** (CORDIO East Africa); **Calvin Quek** (Oxford Sustainable Finance Group, Smith School of Enterprise and the Environment, University of Oxford); **Dr Julen González Redín** (Finance for Biodiversity Foundation); **Karen Sack** (Ocean Risk and Resilience Action Alliance); **Dr Paul Kanyinke Ole Sena** (Egerton University, Kenya); **Dr Hélène Soubelet** (Fondation pour la recherche sur la biodiversité); **Jack Stuart** (Ocean Risk and Resilience Action Alliance); **Dr Gareth Thomas** (Natural History Museum); **Professor Beatrice Weder di Mauro** (Centre for Economic Policy Research); and **Dr Sven Wunder** (European Forest Institute; Center for International Forestry Research and World Agroforestry).

Secretariat

The co-chairs would also like to express immense thanks to the IAPB Secretariat team, present and past members, for their dedication and hard work supporting the work of the Panel and its products. Additional thanks are extended to the British and French governments for providing staff to the Secretariat.

Martina Fernanda Amato, Nengi Ayika, Dr William Broad, Rianna Carter, Robert Ceiriog-Hughes, Josh Day, Thibault Devanlay, Grégoire de Warren, Emilie Jardin, Celine Meunier, Jack Ogden, Bisi Osindeinde, Georgia Patt, Vanessa Pears, Harry Penrose, Dr Maria Potouroglou, Marc Rivet, Matthew Sargent, Sandy Sheard, Dr Anca Voia and Colleen Wainwright.

Wider contributions

Finally, IAPB would like to thank everyone else that has contributed in different ways to inform IAPB's thinking since the initiative was first announced in June 2023. This includes the myriad of people across multiple countries that have made time to speak with the co-chairs, other Panel members and the Secretariat including government officials and ministers in multiple countries, project developers, Indigenous Peoples and their networks, central bankers and scientists. It also includes respondents to IAPB consultations, working draft reviewers, webinar participants and contributors to Panel events.

Our additional thanks go to colleagues at the Biodiversity Credit Alliance and World Economic Forum for their collaboration on the joint High-Level Principles, as well as The Biodiversity Consultancy, Pollination and members of the Biodiversity Credit Alliance's Communities Advisory Panel for their support in developing these.

Foreword

Nature provides the basis for all living things on earth. Yet, the natural world and its rich and vital biodiversity that underpin our economies are at risk, as we face the twin crises of biodiversity loss and climate change. We know that according to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), biodiversity loss is ongoing at an unprecedented scale and pace. Our economies are dependent on Nature, as are our health and our wellbeing. Without greater investment and effective governance, biodiversity will continue to decline with dramatic consequences. The opportunity to halt biodiversity loss on our lands, in our skies and in our oceans is swiftly diminishing. This report is a call to action.

> **"Without greater investment and effective governance, biodiversity will continue to decline with dramatic consequences"**

The Kunming-Montreal Global Biodiversity Framework (GBF) highlights the critical importance of aligning global finance flows and economic activities with international biodiversity goals. One of several financing mechanisms identified by the GBF as a source of funding Nature was biodiversity credits.

Building on the momentum of the GBF, at the Paris Summit for a new financing pact in June 2023, the British and French governments launched the International Advisory Panel on Biodiversity Credits (IAPB), a global initiative with the aim of facilitating the creation and growth of high integrity biodiversity credit markets. Since that date, we have gathered a global Panel of more than 25 senior representatives from finance, business organisations, academia non-governmental organisations (NGOs) and Indigenous Peoples and local communities (IPs and LCs), and we have worked in an open and inclusive way to develop the Framework set out in this report. A group of Knowledge Partners of leading organisations and world-class scientists and experts have also informed the Panel's work. This approach has helped to ensure our work is grounded in high-quality research, evidence and Indigenous knowledge. In total there are more than 120 participants involved from more than 25 countries around the world focused on developing high integrity markets that address financing for projects both on land and at sea.

The Panel is sponsored by, but independent from, government and acts as a 'bridge' between the public, private and NGO sectors. Our approach from the beginning has been to collaborate and consult in order to benefit from the work already in train. We did not want to 'reinvent the wheel' but, on the contrary, be pragmatic and encourage rapid action.

> **"The Panel acts as a 'bridge' between the public, private and NGO sectors"**

Over the course of our work, we have consulted widely, through formal published consultations, numerous bilateral meetings, open fora and stakeholder events. We have learned a great deal through this process, including from the successes and failures of other markets, such as the carbon market.

The Framework consists of High-Level Principles, guidance and pilots. The principles are supported by detailed guidance on market development and technical design informed by our work on measurement, demand, supply, stewardship and governance. It seeks to be clear and practical, but it will not translate into outcomes overnight. There is a critical need for testing and showcasing the High-Level Principles and guidance on the ground through concrete action. That is the reason why the Framework is accompanied by 31 pilots across 21 countries which have been or will be developed, showing the willingness of public and private actors to test the Framework and help improve it in the future.

> **"The IAPB's Framework creates solid foundations for the development and growth of high integrity biodiversity credit markets"**

While the development of any market is an iterative process over many years, we believe the IAPB Framework creates solid foundations for the development and growth of high integrity biodiversity credit markets that deliver on the three-fold objectives of channelling funds into biodiversity, shifting business towards Nature-positive behaviour and securing fair rewards for Nature's stewards. Our work made clear that conservation, as well as restoration, of marine and land ecosystems could be financed with new instruments. The protection of value chains, as well as contribution and local compensation, offer good prospects for the demand for biodiversity credits, as long as they are high integrity. Likewise high integrity hybrid products linking carbon and Nature can be a source of financing for biodiversity.

Our consultation process also made clear that around the globe, rules, standards, principles and high levels of transparency are considered essential to high integrity markets and to earning the trust and confidence of all actors. This has been an indispensable thread throughout the Framework. That is also the reason why public authorities and governments have an important role to play.

> **"To make the sustainable changes we need to make, we must fundamentally change how our economies and businesses operate"**

Finance is a powerful tool in the fight to reverse biodiversity loss and heal our planet, but it is not a 'silver bullet'. If we really are to make the sustainable changes we need to make, we must fundamentally change how our economies and businesses operate.

Our work on developing the Framework has demonstrated the positive impact for people and the planet that biodiversity credits can have, but it also has illuminated the magnitude of the change we must see and of which they are only one small part. Recognising as Professor Dasgupta has said that human beings are 'embedded in Nature', and that people must drive the transformation to align global finance flows and economic activities with international biodiversity goals. So, while biodiversity credits have a role to play, they cannot, and should not, be seen as a substitute for more consistent public policies, including those protecting ecosystems against overuse and predation, incentivising positive behaviours, sanctioning harm and pollution, pricing negative externalities and abolishing negative subsidies. They also are not a substitute for public and multi-lateral finance, nor are they an exclusive tool for channelling private money to biodiversity.

This transformation requires a fundamental shift that goes well beyond the mission with which this Panel was tasked. No financial instrument can compensate for the fact that economies, finance and business management largely have been ignoring Nature (since the beginning of the Industrial Revolution) and continue to do so. We need to transform rapidly the way we produce, consume and share value, while reducing waste. Governments and international organisations (including the International Monetary Fund and the Organisation for Economic Co-operation and Development), central banks, universities, think tanks, as well as bodies dealing with economics and sociology, should be mobilised for this reset. The recent G20 High-Level Principles on Bioeconomy and Sustainable Finance Report provide guides for actions that can be taken across our economies. And macro-economic and financial stability analysis must measure and value the contribution of Nature. It is vital, and it is urgent.

Given the critical role of IPs and LCs in conserving, restoring and stewarding Nature, they have been involved in every aspect of our work. The Framework calls for this to continue in the development, oversight and benefit-sharing in all biodiversity credit projects with full respect of their rights.

Clearly, the IAPB Framework is not the end of the journey but the beginning. High integrity biodiversity markets, operating in accordance with the Framework, can make an important contribution to financing Nature. IAPB, therefore, urges the establishment of a platform for international cooperation – a 'coalition' of governments, international and multinational organisations, IPs and LCs, NGOs, scientists and the private sector. This coalition can effectively take forward the GBF's strong signal for the need for such instruments, together with the IAPB's work to date with many partners on how best to translate such signals into practice and ambitious outcomes.

"High integrity biodiversity markets, operating in accordance with the Framework, can make an important contribution to financing Nature"

We would like to acknowledge and thank all members of the Panel, Working Groups, Knowledge Partners and our Franco-British Secretariat, all of whom worked tirelessly and with total commitment. The IAPB Framework is their work. And, of course, we must thank the French and British governments for seeing the potential of high integrity biodiversity credit markets and for the support they gave to our work over many months.

The stakes are high. Concerted, cooperative action is a prerequisite in ensuring that efforts to date translate into an ecosystem of biodiversity credit markets that can make a meaningful contribution to achieving international, and associated national and regional, biodiversity goals. Given the twin crises of climate change and biodiversity loss, that work must move forward with ambition and pace. We have no time to lose.

Dame Amelia Fawcett
Chair, Royal Botanic Gardens, Kew and Lead Director, State Street Corporation

Sylvie Goulard
Professor of Practice, Bocconi University (SDA)

Executive summary

The importance of biodiversity

Nature provides the basis for all living things on Earth.
Its effective stewardship is fundamental to the health of the planet and to the survival of the human species. There is an inextricable interdependency of Nature, people and biodiversity.

But the natural world, and its rich and vital biodiversity that underpins our economies, is at risk.
As the Global Assessment Report on Biodiversity and Ecosystem Services (IPBES, 2019), the Dasgupta Review on the Economics of Biodiversity (2021), and numerous other studies have shown, we are depleting Nature at unsustainable levels.

Without greater investment and effective governance, biodiversity will continue to decline.
Reversing this biodiversity crisis relies on delivering the goals of the Kunming-Montreal Global Biodiversity Framework (GBF), which calls for effective resource mobilisation and the alignment of global financial flows with international biodiversity goals.

Economic decision-makers including governments, international organisations, multilateral and financial institutions, and corporates are not doing enough.
More must be done to incentivise practices that protect and regenerate Nature rather than destroy it. Economics and finance must consider biodiversity and its values as part of the transition to sustainable growth. We require a range of public and market-based mechanisms, and we must encourage businesses to value and invest in biodiversity.

Biodiversity credits (and credit markets) are one mechanism for market actors to channel financial flows to support the transition to a Nature-positive future.
Beyond just mobilising capital, uptake of biodiversity credits could help to change the relationship of corporates and financial markets with Nature and better support Nature's stewards.

IAPB's work

The International Advisory Panel on Biodiversity Credits (IAPB) was established at the Summit for a New Global Financing Pact in Paris in June 2023 to facilitate the creation and growth of high integrity biodiversity credit markets and encourage enabling policy and regulatory mechanisms, in ways that are credible, timely, and coherent on an international level.

IAPB's approach has been open and inclusive, drawing on insights from various market actors, including policy makers and regulators, Indigenous Peoples and local communities (IPs and LCs), the financial community, scientists, experts, and many others.

Throughout the process, IAPB has also drawn on insights from carbon credit markets. IAPB recognises that there are parallels and crossovers between biodiversity and carbon credit markets: it is essential that both are high in integrity and facilitate inclusion and respect for the rights of IPs and LCs. At the same time, we know that biodiversity is more complex and more locally specific than carbon.

Key findings

1 **It is feasible for high integrity biodiversity credits and credit markets to develop at scale and pace.** It will require action on the part of multiple actors as this Framework sets out. In particular, governments need strong policy directives or regulatory mechanisms to unlock finance that delivers for Nature and its stewards.

2 **High integrity means verified outcomes for Nature, equity and fairness for people, and good governance for markets.** High integrity at all levels is a prerequisite for scale, not a barrier to it. Confidence in high integrity at the project and market level enables uptake. Demand for biodiversity credits is growing as private-sector organisations are increasing their understanding of their Nature responsibilities and impacts, and governments are developing and implementing policy frameworks to support or mandate action.

3 **The important role of Nature's stewards is clear.** IPs and LCs, in the Global North and Global South, are often on the 'front line' of stewardship. Their knowledge, experience, traditions and values are of crucial importance for the maintenance, restoration and sustainable use of Nature. IPs and LCs should be co-creators of projects and markets and included in all aspects of design and delivery. Free, prior and informed consent and respect for human rights and rights to land, water and other resources are essential.

4 **A biodiversity credit is "a certificate that represents a measured and evidence-based unit of positive biodiversity outcome that is durable and additional to what would have otherwise occurred"** (BCA, 2024a). IAPB's work builds on this definition, including conservation and restoration outcomes, to examine some aspects in greater depth and to set the necessary criteria to secure the integrity of biodiversity credits and markets.

5 **Biodiversity credits can be used for making evidence-based contributions to Nature goals, for local compensation of biodiversity impacts (under strict criteria), and for insetting – proactive investment within buyers' supply chains. IAPB does not support international biodiversity offsetting approaches: compensation must be local-to-local and like-for-like.** In addition to these use cases, there are linkages between carbon and biodiversity markets and potential for co-benefits between them. The overriding principle across use cases is that high integrity **must** be evident.

6 **At this stage, there will be multiple markets for biodiversity credits, and markets will follow a project financing approach.** Biodiversity is not fungible so projects will be funded based on specific circumstances and outcomes, and the local specificity of ecosystems and communities means that a standardised biodiversity unit is not appropriate (though standardisation of **approaches** could support market development). Markets will address specific objectives and use cases, in line with local, national or international governance or policy frameworks.

7 **Design solutions therefore need to support multiple markets**, depending on the context, actors and motivations. There is space for both voluntary and compliance markets, and compensation and contribution opportunities to co-exist and deliver scaled, equitable, positive outcomes for people and the planet. It should be noted, however, that IAPB does not support secondary markets at this stage.

8 **Ambitious and urgent collective leadership, from all market actors, is needed to scale up biodiversity credit markets at pace.** This action must add to, rather than replace, other private and public finance mechanisms, if we are to meet our goals to halt and reverse biodiversity loss.

The way forward

IAPB has established a Framework to define, guide and encourage the development of high integrity biodiversity credits and credit markets. The success of these markets depends on the active alignment of buyers and sellers at the level of individual credits and projects, and support from government, private and public finance, and validation and verification bodies to create an enabling environment. This Framework provides guidance for these market actors at both project and market level. In doing so, it provides clarity on the critical policy issues at the heart of biodiversity credit markets and offers examples of good practice from around the world.

The Framework is made up of a set of High-Level Principles which serves as an overarching guide for biodiversity credit markets, and more detailed recommendations and guidance for market actors (Figure ES1). The High-Level Principles, co-developed with the Biodiversity Credit Alliance (BCA) and the World Economic Forum (WEF), are focused on ensuring high integrity while considering the practical concerns and costs of implementation. The guidance draws from across IAPB's work, particularly from the five Working Groups focused on Measurement, Demand, Supply, Stewardship and Governance. The Framework also includes a suite of pilot projects, showing how biodiversity credit approaches are being translated into concrete action.

Buyers of biodiversity credits should be transparent about their impacts and dependencies on Nature and biodiversity, for example by assessments and disclosures, and ensure they have articulated a complete Nature strategy that sets out how impacts and dependencies will be addressed in line with the mitigation hierarchy for site-specific impacts (to first avoid, then minimise, restore, and only then compensate for residual negative impacts locally – as a last resort). The objectives of their purchase of biodiversity credits should be clear, matched with the objectives of the seller, compatible with high integrity, and consider the buyer's impacts and dependencies in specific and local areas including through international value chains. Claims made by the buyer should be independently assured for integrity, aligned with the buyer's Nature strategy and be integrated into corporates' annual reports. Claims to have mitigated impacts or addressed dependency risk through biodiversity credits must demonstrate that the mitigation hierarchy (guidelines to help mitigate negative impacts on biodiversity) has been applied and should be supported by robust evidence.

Suppliers of biodiversity credits should embed high integrity principles through design and implementation of biodiversity credits. These include longer-term measurement of the state of biodiversity and improvements, and appropriate validation, verification and assurance mechanisms through the project lifecycle and in conjunction with objectives set by buyers and local regulations. IPs and LCs must have their leadership and involvement recognised and respected at all stages.

Governments play a crucial role in shaping economies, championing innovation and enabling markets through the signals they send and the rules they set. Governments should ensure that the ecosystem services that Nature provides are understood and accounted for by economists, corporates and households. They should also put in place governance arrangements for biodiversity credits at the national level, aligned with global goals and national or sub-national objectives. In line with Target 15 of the GBF, legal, administrative or policy measures should also encourage or require companies and financial institutions to account for, disclose and manage biodiversity impacts. National legislation and policy also should recognise and enforce relevant rights, including human rights, and legal and customary land and water rights for IPs and LCs, by effectively integrating the United Nations Declaration on the Rights of Indigenous Peoples and other relevant international rights protection frameworks. At the international level a body (new or existing) for biodiversity credits could helpfully facilitate coordination and share information and lessons.

Public and private finance should reinforce high integrity by setting, enforcing and aligning expectations of other market actors. Finance should support developing projects and markets at the local, national and international level and facilitate investment from buyers, bringing together capital from across sectors to catalyse market development. The sector also should play an important role in the risk management, or the due diligence undertaken on those it is funding, for both suppliers and buyers, to ensure that high integrity practices are in place and aligned with IAPB's recommendations. There is also an important role for public finance institutions, in particular on capacity building.

Validation and verification bodies should provide independent oversight of biodiversity credits to build trust in the actions and outcomes linked to specific credits. Oversight should balance practicality and rigour in assessing high integrity: it should actively incorporate different types of evidence, including scientific, local and traditional knowledge, be accessible to all stakeholder groups and project sizes and types, welcome innovation, and promote sharing of good practices and transparency. This includes publishing metrics in a repository, including metadata and biodiversity datasets, while respecting data confidentiality and sensitivity. As markets develop in scale and sophistication, oversight should promote alignment of expectations at the national or international level and consider commonalities across biodiversity credits and potential for increasing standardisation (though equivalent units are not possible). At the whole-of-market or international level, transparency or cooperation mechanisms could support alignment and market development.

All market actors should commit to ensuring biodiversity credits and their markets develop with high integrity at the core. IAPB's Framework – its High-Level Principles, guidance and pilot projects – provides the foundations to build on.

Figure ES1: Framework at a glance

High-Level Principles and guidance for market actors

1. Verified outcomes for Nature

Rigorous measurement, validation and verification to ensure all credits deliver robust outcomes.

2. Equity and fairness for people

'No harm' approach, generating meaningful, equitable benefits. Respecting the rights of Indigenous Peoples and local communities. Ensuring their inclusion as active market actors and supporting their leadership and ownership within the system.

Lifecycle

High integrity must be maintained across all project types and ecosystems and at all stages of the project cycle.

HLP 1: Defined biodiversity objectives and activity type
HLP 2: Demand integrity and the mitigation hierarchy
HLP 3: Credit issuance and tracking
HLP 4: Ex ante and ex post credits

Rights

Equitable biodiversity credit projects must respect the rights of all those involved.

HLP 11: Legal and customary land and water rights
HLP 12: Respecting human rights and the rights of Indigenous Peoples
HLP 13: Free, prior and informed consent

Criteria

Biodiversity credit projects should result in measurable, long-term gains for Nature.

HLP 5: Additionality
HLP 6: Baselines
HLP 7: Durability
HLP 8: Leakage

Inclusion and rewards

Projects must be inclusive of and support vulnerable actors, including local Nature stewards, and ensure fair distribution of benefits.

HLP 14: Indigenous Peoples and local communities' involvement in governance
HLP 15: No harm
HLP 16: Benefit sharing
HLP 17: Grievance mechanism

Validation

Independent assurance, validation and verification at the project level are needed to ensure high integrity of crediting projects and their associated claims.

HLP 9: Monitoring, reporting and verification
HLP 10: Third-party audits

The 21 High-Level Principles have been developed jointly with the BCA and WEF.
The IAPB guidance, organised around seven sub-themes, draws from the work of IAPB's five Working Groups.

	3. Good governance for markets
	Transparent and sound governance across the system, at macro-level and project-level implementation.
	Transparency
	There should be transparent arrangements in place relating to biodiversity credit purchase and use. **HLP 18:** Transparent governance structure
	Accountability
	All parties must be held to account for their actions, decisions and claims relating to biodiversity credits. **HLP 19:** Data sovereignty **HLP 20:** Alignment with frameworks **HLP 21:** Tradability

1. Introduction

The urgency of today: The scale of the biodiversity loss challenge

Nature's rich and vital biodiversity is essential for our lives, livelihoods and economies, and its value is multifaceted and diverse. Nature has intrinsic, social and cultural values (IPBES, 2016). But the signs of biodiversity loss are everywhere. Tropical forests, coastal wetlands and many other natural ecosystems are in retreat. Numerous reports highlight the severity of the challenges we face, the need for action and the risks of inaction (IPBES, 2019; UNEP, 2023; WEF, 2024a; WWF, 2022). Scientists have estimated that our planet is losing species at an alarming rate – around 100 to 1,000 times higher than the baseline rate. If we continue on this trajectory, a future where 30 to 50% of all species may be lost by the middle of the 21st century will be inevitable (IPBES, 2019).

The Kunming-Montreal Global Biodiversity Framework (GBF) outlines humanity's aim to halt and reverse biodiversity loss. Our political and economic systems and financial markets are still not doing enough to properly account for what Nature and its biodiversity provide for us. Political debates largely ignore Nature in a push for 'growth'. With 55% of our global Gross Domestic Product, equivalent to an estimated $58 trillion, being moderately or highly dependent on Nature, our reliance on ecosystem services and biodiversity is too large to ignore (PwC, 2023). Nature's destruction presents profound risks to our societies and economies, which is not sufficiently accounted for despite recent efforts (such as 2024 works by the Network for Greening the Financial System, Financial Stability Board, and Organisation for Economic Co-operation and Development). Numerous frameworks, guidance, taxonomies and tools are available to support companies and their investors to understand and reduce their impact on Nature and act on evolving Nature-related issues (such as EU 2020; SBTN, 2024; TNFD, 2023a; 2023b; 2023c; UNEP FI, 2023; World Bank, 2021).

The possibility of tomorrow: Biodiversity credits' role in meeting global Nature goals

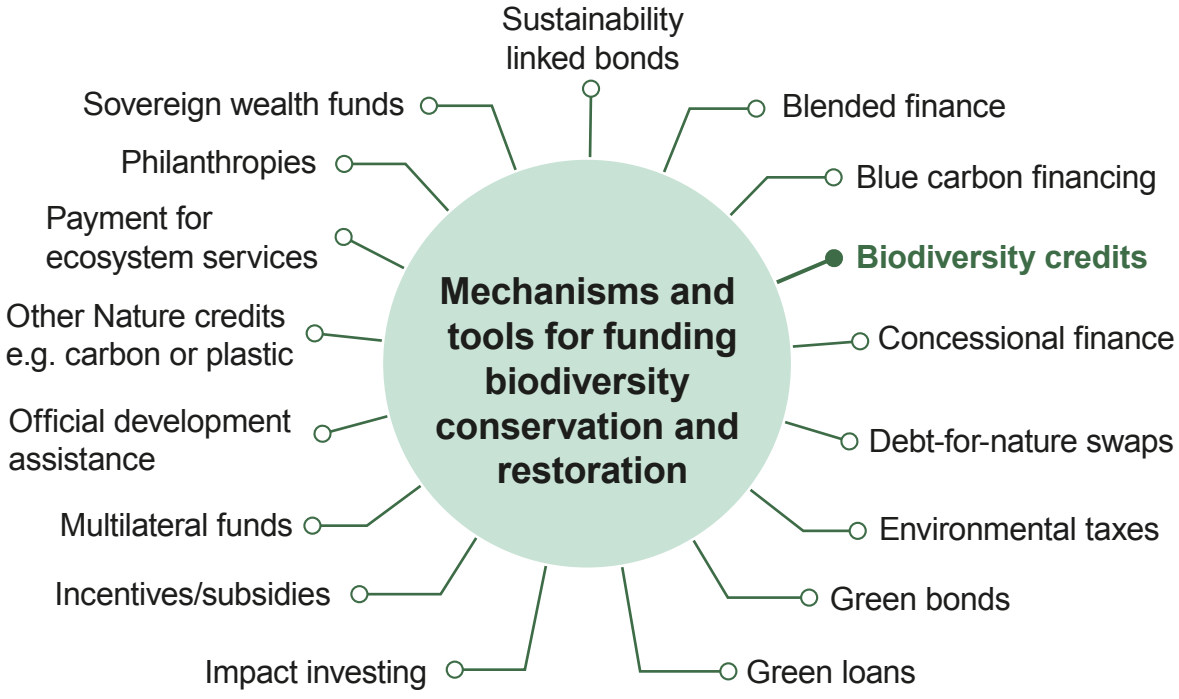
As the Dasgupta Review (2021) says, to slow and stop the global loss of biodiversity, we must fundamentally rethink our relationship with Nature and transform our economic models and financial systems. We need financing mechanisms that can factor in biodiversity objectives and rapidly mobilise and channel substantial amounts of capital into maintenance and restoration.

Biodiversity credits have been widely referenced for their potential to support the scaling up of finance for Nature including through GBF Target 19d which states that finance should be mobilised, including by "stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms, with environmental and social safeguards".

Biodiversity credits can simultaneously support global Nature-related objectives, and multiple goals and targets across the GBF, by addressing priorities in national-level strategies. They can also provide the means to deliver positive outcomes for people and the planet, including promoting conservation of vulnerable species and natural habitats, supporting their continued ability to deliver ecosystem services, contributing to halt and reverse biodiversity loss, and fostering equitable distribution of benefits from the use of biodiversity. Voluntary and compliance approaches are both emerging, with a number of potential drivers or use cases that we set out later in this report.

No single approach represents a universal remedy and biodiversity credits should be envisaged as complementary to the broad range of finance tools at our disposal (Figure 1). In comparison to other mechanisms, biodiversity credits can unlock private finance for projects that have biodiversity benefits but limited or no routes to achieving a financial yield, by specifically valuing biodiversity actions and outcomes. A biodiversity credits approach should not be a substitute for other (well-established) financial mechanisms to incorporate biodiversity objectives. Private financial flows unlocked by biodiversity credits should also not supplant public or philanthropic funding: finance from all sources is needed, and leveraging public funding and philanthropy can help unlock private finance.

Figure 1: Mechanisms and tools for funding biodiversity conservation and restoration



2. IAPB's approach

Central to IAPB's approach is its ambition to support governments to develop enabling policy and regulatory mechanisms, as well as strengthen coherence at an international level, to drive the creation and growth of high integrity biodiversity credit markets. IAPB is sponsored by, while independent of, government, which enables it to operate as a 'bridge' between the public, private and non-governmental organisation (NGO) sectors.

Working in a collaborative and inclusive way, IAPB has sought to understand better the challenges of scaling biodiversity credits and markets at pace and propose solutions to them, helping to close the biodiversity finance gap. Since its inception, IAPB has brought together expert views from a myriad of stakeholders with a keen interest in the development of biodiversity credit markets, and sought diverse stakeholder perspectives through two public consultations (IAPB 2024a; 2024b), alongside other stakeholder engagement sessions and focus groups. It has done so to learn from prior experience in similar markets and to crowd in new and emerging thinking to inform its recommendations. Part of the value of this work has been to come together on challenging issues, thereby providing clarity to actors in a nascent marketplace.

IAPB recognises that methodologies and measures will vary according to the specifics of each project, and may change and improve over time. IAPB's recommendations reflect this: IAPB's aim is to ensure high integrity without prescribing methodologies. IAPB notes the work done by other organisations on methodology questions to date, and work will continue with an increasing range of metrics, tools and databases, supported by technological progress, offering potential for innovation (IUCN, 2023; CDC Biodiversité, 2024; WEF, 2024b; 2024c).

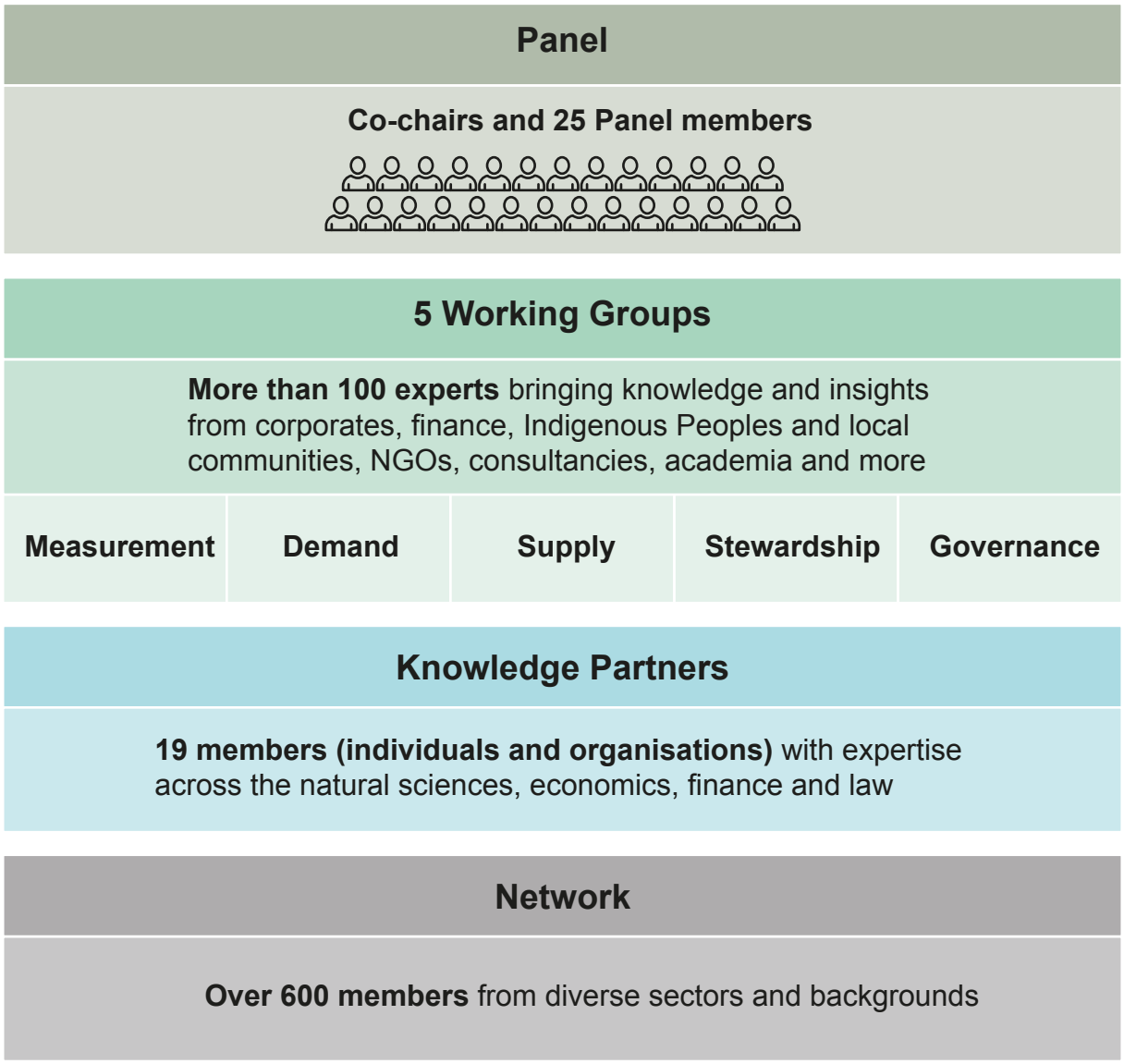
IAPB draws on a diverse and rich array of expertise, with more than 120 experts involved in the initiative from more than 25 countries (Figure 2).

- The **Panel** is made up of more than 25 senior representatives from finance, business, academia, NGOs, and IPs and LCs from all around the world.
- IAPB established **Working Groups** to delve into five design priorities: **Measurement, Demand, Supply, Stewardship** and **Governance.**
- A group of **Knowledge Partners**, including representation from established and respected scientific institutions, also has been a fundamental part of the IAPB process.

This approach has helped IAPB to ensure its work draws on a wide range of experience and expertise from multiple disciplines and sectors, and is grounded in high-quality, robust research, evidence and Indigenous knowledge. IAPB is also showcasing a suite of pilot projects in Cali alongside the Framework. IAPB's Framework seeks to be clear and practical, but it will not translate into outcomes overnight.

Pilots are a meaningful way to illustrate a range of approaches and to give a tangible indication of the current state of the market and its development prospects – it is intended that between them, this group of pilots (set out later in this report) can test the Framework principles and guidelines. By bringing together a group of practitioners, IAPB is open to exploring the development of a community of practice to share ideas and lessons learned on the implementation of biodiversity credits.

Figure 2: IAPB structure



3. Market landscape

When using the term 'markets', IAPB is referring to them in the context of a project financing market, rather than a liquid financial instrument. That means that each project will be funded based on its specific characteristics and conservation outcomes.

Most biodiversity credit projects are still in the early stages of development, and therefore are still refining their methodologies for measuring and verifying biodiversity, setting prices, assessing demand and identifying buyers. During these initial development phases, biodiversity credit projects will mainly be financed by public funding or philanthropy, before the market is sufficiently established to attract investors.

Voluntary biodiversity credits are gaining attention among corporates and investors, as a tool for encouraging a Nature-positive contribution through a market-based instrument. This can be driven by environmental, social and governance or corporate social responsibility commitments and requirements. Benefits to business can also be derived from approaches like insetting – creating opportunities for growth, or managing risks more effectively, within a company's supply chain. Various pilot projects and multi-stakeholder initiatives are pioneering the development of this market, with lessons from carbon credit markets, as well as broader markets for local ecosystem services such as water credits and nutrient neutrality.

Compliance or regulated voluntary regimes are also gathering pace. Work undertaken for IAPB has identified 16 ongoing and existing government actions in establishing national policy frameworks for compliance or regulated biodiversity credits (Table 1) (IAPB, 2024c). Some of these regimes make a strict distinction between voluntary contribution and mandatory compensation which can influence the approach to credits – for example, in Australia, biodiversity credit certificates can be used for voluntary contribution but cannot be used for mandatory compensation. Other countries allow the generation of credits that can be used for compensation and/or contribution (for example France) and some countries require a net gain for biodiversity in mandatory compensation (for example England). IAPB strongly believes that the development of these regulations, for contribution or for compensation purpose, must ensure high integrity and a strong link with local needs.

In view of the diversity of the state of markets and the applicable use cases, IAPB's view is that multiple markets will exist. At this stage, it is unlikely that one single global market for biodiversity credits will emerge.

Table 1: Emerging landscape of biodiversity credit policy frameworks[1]

Country	Use case	Status
Australia[2]	Contribution (biodiversity certificates)	Planned for early 2025
Brazil	Contribution	Planned at sub-national level (Paraná State)
Canada	Contribution (biodiversity certificates)	Operational (pilot)
China	Contribution	Planned (announced in NBSAP 2024)
Colombia	Compensation (Habitat Banking)	Operational

1 A literature review was conducted to identify existing and ongoing biodiversity credit (and equivalent) policy frameworks. Of the 16 identified frameworks, 9 were complemented by interviews with government officials. Refer to IAPB (2024c) for further details.

2 Australia operates separately a mandatory compensation regime, but it is not included in this table, as Australia does not operate it on a credit basis, and it differs among states. Australia has chosen to keep the two regimes separate: a regulated voluntary scheme for contribution scenarios using certificates, and a compliance regime for compensation purposes.

	Type of market	Market operations*	Trading	Registration
	Voluntary	OTC and online trading platform	To be advised	Yes
	Voluntary			
	Voluntary	OTC	Primary	Yes – not publicly available
	Compliance and voluntary	OTC	Primary	Yes

*Over-the-counter (OTC) and/or trading platform

Country	Use case	Status
France	Compensation, which may be used as contribution	Enacted
Gabon	Compensation (Habitat Banking with biodiversity credits)	Enacted (exploring voluntary)
Germany	Compensation (Habitat Banking)	Operational
Guyana	Exploratory phase	Exploratory phase
India	Contribution Green Credit Programme	Operational
Indonesia	Contribution	Planned
New Zealand	Contribution	Planned (consultation in 2023)
Niue	Contribution (ocean conservation commitment certificate)	Operational
Philippines	Contribution (biodiversity crediting)	Planned issuance of guidance
UK (England only)	Compensation and net gain	Operational
USA	Compensation (Habitat Banking)	Operational

	Type of market	Market operations*	Trading	Registration
	Compliance and voluntary	OTC	Primary	Yes
	Compliance (exploring voluntary)			
	Compliance	OTC	Primary	Yes
	Voluntary, except if credits are recognised for compliance (excluding tree plantation)	Trading platform in preparation	Primary	Yes
	Voluntary	OTC	Primary	Yes
	Compliance and voluntary	OTC (off-site units) and trading platform (statutory units)	Primary	Yes
	Compliance and voluntary	OTC and trading platform/ exchange	Primary and secondary	Yes

*Over-the-counter (OTC) and/or trading platform

4. IAPB's findings

What 'high integrity' means

High integrity biodiversity credits and credit markets means providing **verified outcomes for Nature, equity and fairness for people, and good governance for markets**. Foundations for high integrity include robust evidence, additionality, durability, equity and rights. They must underpin projects across the entire lifecycle – recognising and valuing the uniqueness and complexity of biodiversity in each place and the corresponding diversity of approaches.

High integrity must be achieved at the 'macro' scale of markets as well as the 'micro' level of individual credits and projects. Integrity at all levels is a prerequisite for scale, not a barrier to it. Developing biodiversity credits and credit markets on high integrity foundations will build trust and confidence that biodiversity credits will generate environmental, social and financial benefits at the pace and scale required to contribute meaningfully to 2030 goals.

The interconnectedness of positive outcomes for Nature and people means that high integrity encompasses the inclusion, participation and leadership of stewards of Nature. Investment in Nature is investment in people and their work to protect, conserve and restore the environment around them. Projects must be co-designed, co-implemented and co-governed with IPs and LCs from the local area. This applies in the Global North and Global South, and to all forms of stewardship, from traditional management of landscapes, through to current practices of farming and fishing. IP and LC rights – human rights and rights to land, water and resources – must be respected in all cases, and IPs and LCs must have the opportunity to participate in and benefit fairly and equitably from biodiversity credits and credit markets.

As in any successful market, rules and standards are needed to ensure the trust and confidence of market actors – in this case, IPs and LCs, buyers, investors, suppliers and other stakeholders such as governments, regulators, and public and private financial institutions – as well as the wider global community. IAPB's consultations showed that market actors and stakeholders valued highly strong rules, standards, guidelines and independent third-party oversight to ensure high integrity and accountability. But current evaluation of standards and frameworks on the supply-side shows that biodiversity credit market integrity is still far from satisfactory (BCA, 2024a; 2024b), despite the efforts being made by several players. There is an opportunity to do more here.

Given markets are currently at an early stage of development, in many jurisdictions oversight bodies do not yet exist to create and supervise the implementation of rules and protocols for high integrity biodiversity credits. As such, the risks of limited transparency and fraudulent claims are more pronounced.

Routes to strengthen oversight in the interim include an international biodiversity credit 'regulator' forum for international coordination, an international body (or national equivalents) that validates private verification bodies to give confidence to market actors, and some kind of public data repository for registering biodiversity credit projects. Meanwhile, supervisors nevertheless can use all the powers at their disposal to fight against fraud and abuses.

Definition of a biodiversity credit

Multiple definitions have been proposed for a "biodiversity credit" covering a range of use cases and markets (to be explored later in the Framework).[3] To support market convergence, IAPB's work builds on the definition produced by the BCA:

> **"A certificate that represents a measured and evidence-based unit of positive biodiversity outcome that is durable and additional to what would have otherwise occurred." (BCA, 2024a)[4]**

IAPB supplements the BCA definition as follows.

- Credits represent the biodiversity outcomes linked to a project and can be sold and issued throughout the project lifecycle. Certificates provide validated proof that inputs, outputs and outcomes have been achieved.
- Biodiversity credits can be used to support the conservation and restoration of biodiversity.
- Project design and implementation, especially measurement, verification and assurance of commitments, actions and outcomes, must be proportionate and appropriate to the circumstances and objectives of specific projects. Therefore, demonstration of additionality must include ecological additionality – whether mitigating threats of degradation or working towards restoration – and could also include social or financial additionality aspects, for example to specifically recognise and value stewardship activities. In the case of maintenance activities by IPs and LCs it should not be assumed that they will provide those maintenance activities in perpetuity and without finance – the absence of finance may be deemed to be a threat of degradation.

3 Different organisations, including some working in collaboration with IAPB, have proposed different definitions of a biodiversity credit in recent months (examples include Pollination (2023), Carbone 4 (2024) and the European Commission (2024)). There is considerable similarity across them. The main differences can be explained by the scope (purely voluntary markets or also compliance) as well as certain elements which are dealt with in this report (such as additionality, durability and tradability).

4 Refer to Biodiversity Credit Alliance (2024a) for further details on the definition, and terms underpinning this definition.

- There must be flexibility for projects to build an evidence base in a way that is practical and credible, enabling IP and LC leadership and involvement, and ensuring scientific rigour.
- Overall, credits themselves must be underpinned by certificates – validated proof that biodiversity outcomes have been achieved – which enable buyers to make robust and transparent claims about their use of biodiversity credits.

Case studies: additionality in practice

An example of a programme that has considered multiple dimensions of additionality in maintenance and restoration projects is the **Canadian government's Indigenous Guardians programme**, launched in 2017 with $25 million and extended in 2021 with $100 million over five years (Government of Canada, 2024). The programme funds Indigenous-led stewardship of traditional lands, waters and ice. Using a distinctions-based approach, it recognises the unique rights of First Nations, Inuit, and Métis peoples and supports conservation, sustainable economies and cultural connections through funding traditional knowledge application, capacity building and ecosystem monitoring activities. The programme seeks to demonstrate clear ecological, social and financial additionality outcomes, including increased protection of lands' cultural and ecological values, greater control for IPs and LCs over resource management in their territories, and improved community wellbeing.

Conservation International and the Tubbataha Management Office, in partnership with Friends of Tubbataha, Inc., are developing a project in the Tubbataha Reefs Natural Park, located in the Sulu Sea of the Philippines. Tubbataha is home to around 70% of all coral genera found globally and is a refuge for 181 endangered species. It also provides an important habitat and nursery for the broader flora and fauna of Southeast Asia and supports community livelihoods. However, illegal fishing, marine debris, boating accidents, pollution, climatic impacts (such as storm events), and climate change are threats to it. Current funding is insufficient to maintain management actions necessary to preserve the long-term sustainability of Tubbataha. Therefore, Nature credits present an opportunity to sustain conservation management of Tubbataha and to help secure additional necessary finances to support long-term community livelihood activities and ranger employment from the local communities, comprising Indigenous and non-Indigenous communities.

Insights from carbon credit markets

In its work, IAPB has drawn on insights from the experience of carbon markets. There are significant differences between carbon and biodiversity credit markets, in particular the fact that biodiversity credits are highly location-specific and not easily interchangeable (Figure 3). But there are still lessons that can be learned from carbon credit markets, as well as good practices to build on, to create robust, high integrity biodiversity credit markets.

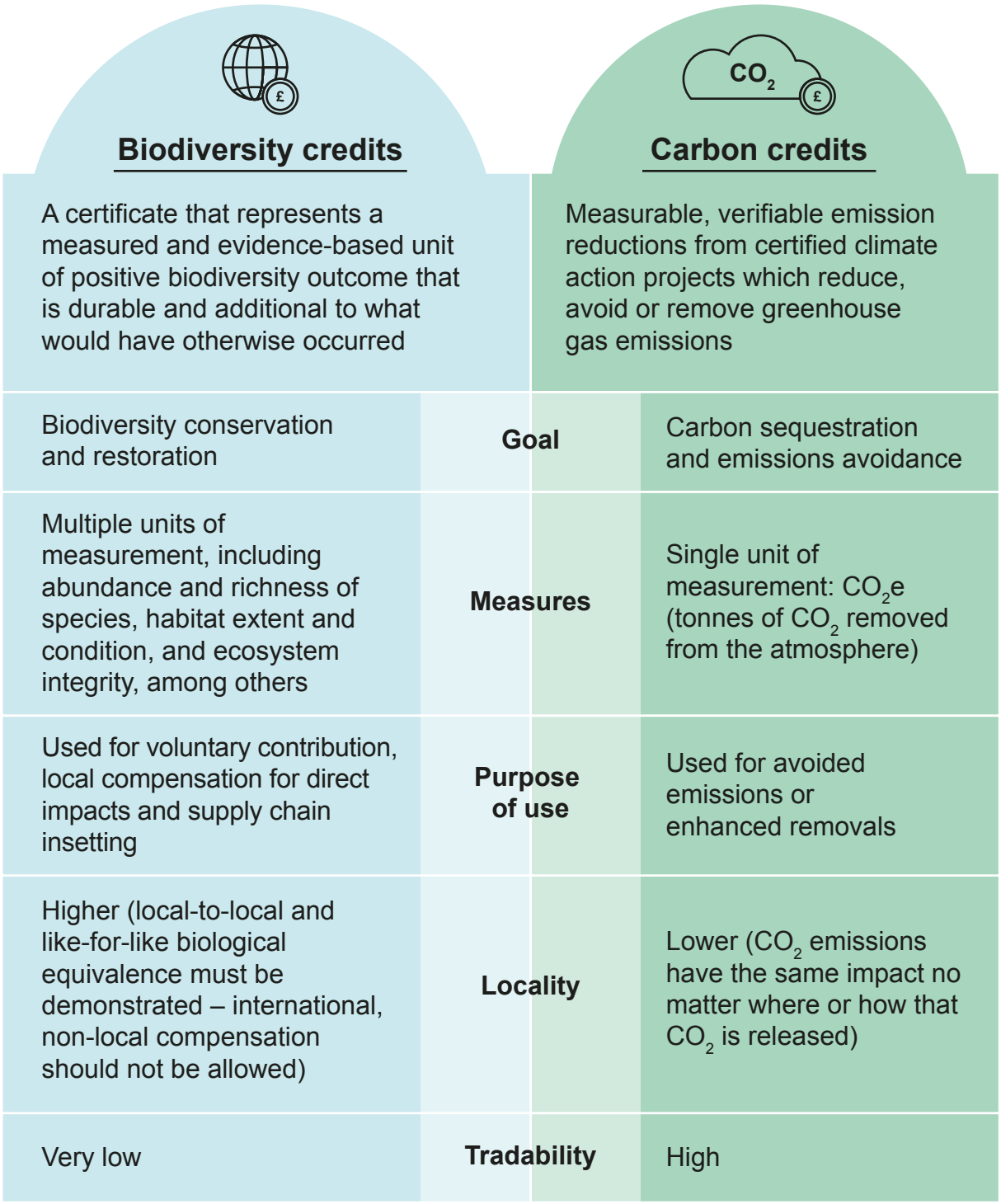
'Carbon markets' cover a multitude of systems, including cap-and-trade (such as the European Union Emissions Trading System), tax and offset (Colombia and Singapore), and project-based arrangements (across domestic and international, voluntary and compliance-driven contexts). The project-based approach, which (in the case of carbon markets) involves making an investment for avoided emissions or enhanced removals, is most relevant to biodiversity credit markets.

Despite many examples of positive impacts on both climate and sustainable development, carbon credit markets have suffered in recent years from a loss of confidence among users and policymakers. The main challenges that these markets have faced, and which offer relevant learning for biodiversity credit markets, include: criticisms around leakage (displacement of emissions to other areas) and impermanence of outcomes, limited transparency on the use of credits and claims made by buyers, accusations of land-grabbing and disregard of IP and LCs' rights, inaccurate baselines, and the failure of projects to demonstrate clear additionality.

Many of these problems resulted in an initial design focus that prioritised market efficiency over and above achieving public purpose, along with more recent developments in project design, monitoring and measurement that have shown that many older projects do not meet standards that are acceptable today. A core determinant of the success of environmental markets is the extent to which such financing mechanisms can credibly and meaningfully fulfil their stated mission and deliver public gains. Carbon markets' perceived lack of credibility and legitimacy have limited their liquidity and hampered their ability to reach a scale that delivers the impact needed.

Given the potential overlap between biodiversity credit and carbon credit markets (for instance through carbon credits with biodiversity co-benefits, stacked or bundled credits), a coherent, high integrity approach will be needed through adhering to IAPB's Framework, even though carbon and biodiversity credits remain distinct products.

Figure 3: Differences between biodiversity and carbon credits



The experience of carbon markets affords us some lessons for the design of high integrity biodiversity credit markets, which the Framework builds on in the following sections. Market governance should be guided by three key principles:

- a whole-systems approach to governance, connecting all levels of the market value chain (from supplier to buyer and involving all other affected parties) as well as the broader ecosystem of market actors, in a decentralised and multi-stakeholder approach
- transparency and accessibility of information on biodiversity credit markets and their operations, with exceptions on a collective agreement basis with market efficiency at their core
- inclusive participation of all types of stakeholders in governance arrangements, in their design, governance and implementation, taking steps to address information asymmetries, at market and project levels, with collectively designed grievance and dispute resolution protocols for all actors

Case study: strengthening the integrity of voluntary carbon markets[5]

The **Indigenous People and Local Communities Engagement Forum** for the voluntary carbon market was launched in July 2024. It is an independent self-governing platform to strengthen the role of IPs and LCs in the governance of carbon markets, both as beneficiaries and shareholders. It aims to ensure the market protects the rights and interests of Indigenous Peoples while delivering benefits where communities decide to participate in projects. The Forum is supported by the Integrity Council for the Voluntary Carbon Market. It is composed of eight member representatives from around the world who were appointed Indigenous Peoples board members of the Integrity Council. By providing a convening space, the Forum hopes to help coordinate voices to support and empower communities, and to support a more structured engagement between IPs and LCs and market governing entities, as well as organisations working towards high integrity. The Forum seeks to enhance awareness and capacities of the market across IPs and LCs by facilitating knowledge exchange and capacity building. It will offer a platform for advocacy and support of development of community-led projects to co-create solutions.

5 All case studies in this document reflect IAPB's understanding. Any errors are IAPB's and not of the organisations that have been profiled through the case studies.

Credits, claims and certificates

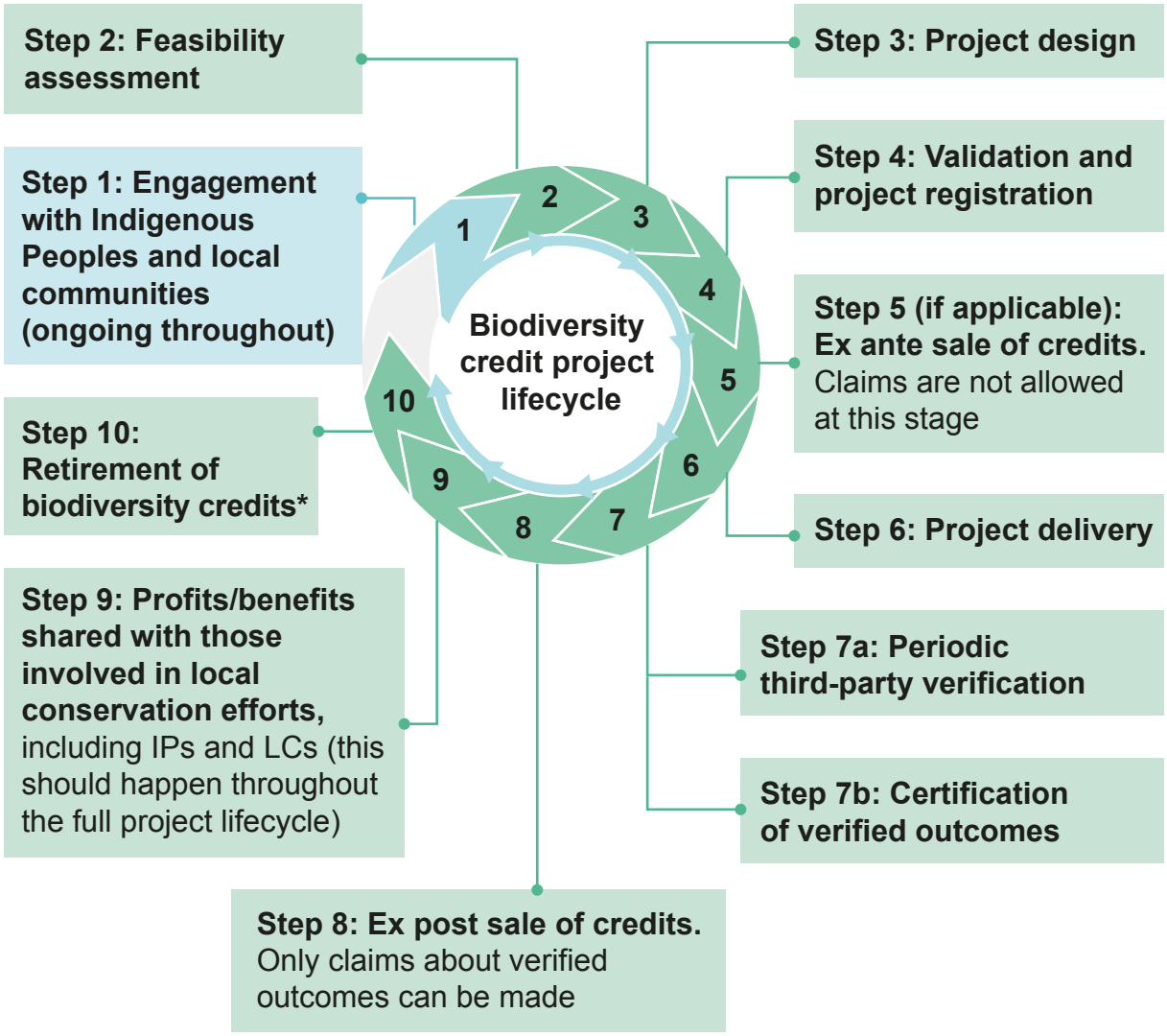
IAPB recognises that the timing of payment, issuance of credits and certificates, and when and how claims can be made are fundamental issues for integrity. This is especially important given the long timeframes of biodiversity credit projects that aim for durable outcomes (Figure 4).

On a practical level, ex ante sale of credits – in advance of outcomes being achieved – is one way to facilitate the development of projects by providing a stream of financing early in the project lifecycle. Such payments should be supported by a validation process that gives confidence that the project design and actions being funded will lead to the planned outcomes being achieved.

Claims made by buyers should be based on achieved outcomes that have been certified. Credits may be sold before verification (for example forward contracts), but such credits should not be used to make claims relating to outcomes before those outcomes have been achieved and certified, at which point a certificate will be issued to support appropriate claims. Only specific and limited communication should be made before verification, for example a buyer highlighting how their funding is enabling management actions to take place with the objective of achieving positive outcomes in time (in effect communications about inputs rather than claims on outcomes).

Credits may be sold ex post (after the outcomes have been achieved). As above, once outcomes are certified, credits can be claimed on and retired.

Figure 4: Biodiversity credit project lifecycle



Note: This diagram is indicative, and the lifecycle will be dependent on the specific biodiversity credit use case.
*Retirement of a credit means the biodiversity benefit it represents has been claimed by the entity that bought it.

Pricing

The pricing model for biodiversity credits (where not set by local regulations) must be transparent and factor in the various costs incurred. These cover all aspects of maintenance or restoration implementation and monitoring, costs for technical, financial, and legal management for the entire lifespan of the biodiversity credit-generating project, and/or recognising the 'opportunity cost' for local communities of alternative uses of biodiversity and natural resources. As biodiversity projects depend on local ecosystems, with no equivalent or fungible unit for biodiversity, there is no robust standardised and market-led price and unit for biodiversity outcomes (Mirova, 2024).

Highly heterogeneous prices should not be a factor in preventing biodiversity credit markets from developing. Price heterogeneity, depending on the local characteristics of the projects or assets, also exists in other markets (for example, real estate markets and commodities markets), with multiple market compartments or subcategories with very different specificities and price levels, without affecting their development.

Secondary markets

IAPB does not support secondary markets at this stage. As already mentioned, IAPB thinks of biodiversity credit markets in the context of the project financing market. IAPB is focused on the primary deployment of capital. Secondary markets are currently still immature, and may remain so for a period of time. In addition, given the nature of biodiversity, the existence and expansion of secondary markets may need to be closely monitored.

To the extent that some secondary transactions exist today and will occur over time (for example impact certificates being transferable or treated as assets) it is essential that appropriate safeguards (on the origination of credits, the claims, the risk of double-counting in the publicly available registry, or the risk of rights infringements or abuses) are put in place to govern trade among market actors. Those markets should not operate in ways that have the effect of conflicting with the Framework outlined below.

Use cases for biodiversity credits

As IAPB's consultation on use cases highlighted, different use cases are needed, covering a range of objectives for buyers to purchase and use credits and across both compensation and contribution approaches (Figure 5) (IAPB, 2024b). IAPB considers that biodiversity credits can take different forms and support different approaches, on account of the diverse range of landscapes and seascapes that make up the natural world, as well as the different projects and objectives that could be covered.[6] Biodiversity credit use cases (and the state of their associated markets) vary greatly and will develop further as the market matures.

IAPB has primarily focused on three use cases below. Other use cases, including hybrid approaches with carbon credits are explored later in this section.

1. **Evidence-based contributions aligned with global biodiversity goals**
2. **Local compensation for direct impacts on biodiversity (offsetting)**
3. **Supply chain insetting**

---

6 Several organisations and initiatives have explored the range of use cases, such as WEF (2023), Pollination (2023), and the High-Level Expert Group on scaling up sustainable finance in low- and middle-income countries, mandated by the European Commission, (2024).

Figure 5: Use cases of biodiversity credits

Motivation/objective	Voluntary*	Compliance
Contribution Making Nature improvements beyond own organisation or value chain	**Use case 1.** Evidence-based contributions aligned with global biodiversity goals	
Compensation Addressing material Nature impacts and risks within own organisation and value chain	**Use case 2.** Local compensation for direct impacts on biodiversity **Use case 3.** Supply chain insetting	
Other use cases Hybrid approaches including links to carbon credits		

*Note: Voluntary approaches can be driven by a range of public policy incentives such as climate- and Nature-related financial disclosures which are becoming increasingly common, and voluntary markets can be regulated, but this is not the same as regulatory compliance.

IAPB's Framework can be used to support implementation of high integrity biodiversity credit markets across the full range of use cases, operating under voluntary or compliance regimes, regardless of whether they aim to compensate for material risks of biodiversity loss or make evidence-based contributions to improving Nature.

In doing so, it should be noted that these use cases will work differently from each other and as such will need to adhere to varying requirements. For example, a project providing local compensation will have different monitoring, reporting and verification needs and approaches than projects focused on philanthropic voluntary contributions. The overarching principle here is one of matching the requirements to the use case and project needs.

1. Evidence-based contributions aligned with global biodiversity goals

Biodiversity credits can be used to make positive contributions to biodiversity, outside of the areas of the buyer's direct (for example, operations) and indirect (for example, value chain) impacts. These could be aligned with national or global biodiversity goals. Compared to simply funding projects (with public, private or philanthropic funding), a biodiversity credits methodology underpins precise and robust claims for the outcomes achieved, for example to support disclosure. Voluntary contributions could be regulated or unregulated.

For these contribution credits, a condition of high integrity is that outcomes achieved are not claimed as direct mitigation of the buyer's biodiversity impacts. This is to ensure that contribution credits are not used for 'greenwashing' and low integrity offsetting. High integrity compensation credits are covered below.

Case studies: evidence-based contributions aligned with global biodiversity goals

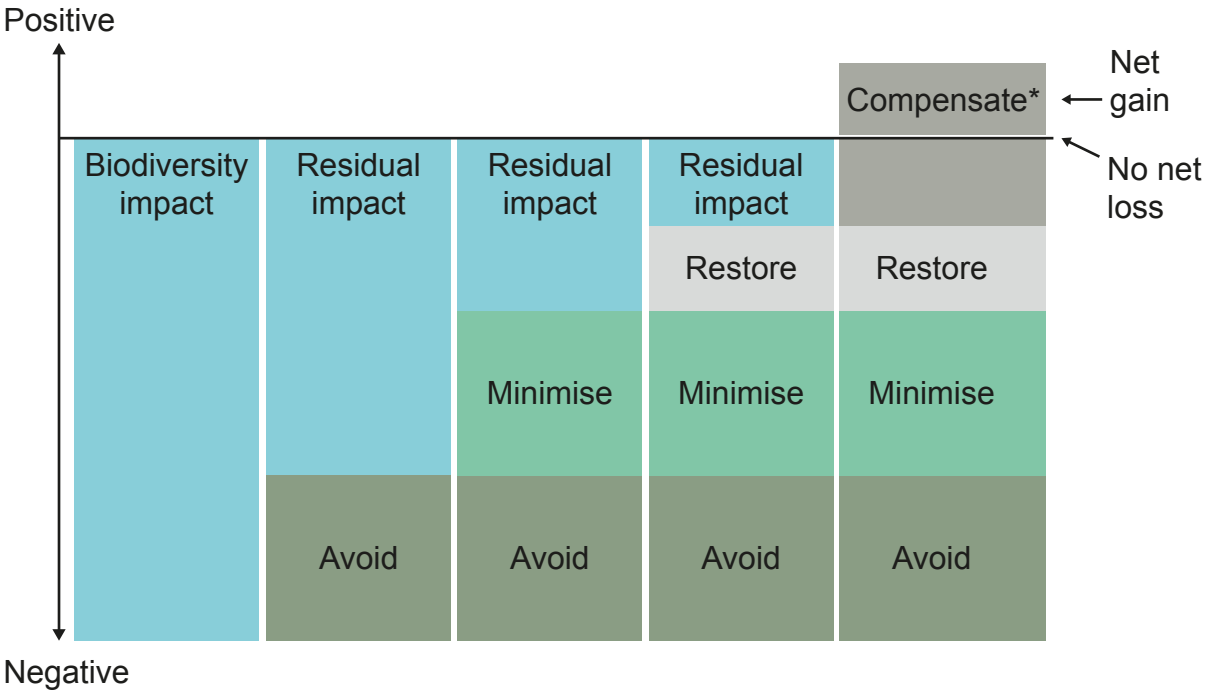
The **French Ministry of Ecological Transition, Energy, Climate and Risk Prevention** and the **Seine Normandy Water Agency,** with the support of the European Commission's Green Assist, are developing a pilot to finance maintenance and restoration of wetlands over the Seine Normandy basin area through the issuance of biodiversity credits. The credits will solely be available for voluntary contribution purposes to the buyers. Stewards of the wetlands and farmers, among others, will receive financial benefits – the project aims to be replicated across Europe. It will draw on lessons learned from the French experience with payments for environmental services.

The **Organization for Biodiversity Certificates**, supported by Ernst & Young, developed a biodiversity certificates framework to support the achievement of the Kunming-Montreal objectives by 2030 (OBC, 2022). The projects aim to deliver positive impact on biodiversity and are funded by corporates that operate in selected countries (pilots projects in Cameroon, Chad, Congo, France, India, Ivory Coast, Peru and Togo). They intend to support national authorities in their biodiversity ambitions.

2. Local compensation for direct impacts on biodiversity

Biodiversity credits can be used to provide measurable maintenance and restoration outcomes that result from actions to compensate for significant, unavoidable residual negative impacts on biodiversity from development activities. This is commonly referred to as 'offsetting', but IAPB uses the term local compensation to ensure that strict conditions are included. In this context the use of biodiversity credits must follow the mitigation hierarchy to first avoid, then minimise, restore, and only then compensate for residual negative impacts – as a last resort (Figure 6). Compensation can be used in voluntary or compliance projects. At a minimum, the aim of compensation credits should be to achieve no net loss of biodiversity, and preferably it would achieve a net gain for the biodiversity affected. It is important to acknowledge that scientific limitations persist in the degree to which compensation projects can be fully effective, even within a national legislative environment.

Figure 6: Diagram of mitigation hierarchy pathway



*Note: IAPB uses the term 'compensate' instead of 'offset'

Adapted from The Biodiversity Consultancy (no date), Net positive and the mitigation hierarchy

IAPB's view is that biodiversity credits for compensation must be based on local-to-local and like-for-like ecological equivalence.

- Local compensation at the scale of the same ecosystem or jurisdiction can only be envisaged providing that the mitigation hierarchy is implemented, and with appropriate review, verification and enforcement structures in place.
- Local compensation biodiversity credits should align with national policies and regulations governing compensation arrangements (preferably with 'net gain' arrangements) and associated metrics.
- Local-to-local and like-for-like compensation biodiversity credits could make use of international financial flows, for example finance from an international company to carry out projects locally to where the organisation has had a direct impact on Nature. This should support global investment in local markets, while avoiding uncontrolled international claims of 'offsetting' using credits that are disconnected from specific local impacts and responsibilities.
- Cross-border biodiversity compensation should **not** be permitted with the exception of compensatory biodiversity credits generated by transboundary projects within the same transboundary ecosystem or ecoregion. Additionally, international (non-local) compensation and associated markets should **not** be allowed, as there is in general no evidence-based, non-local 'equivalence' and local biodiversity is irreplaceable.

IAPB excludes, and invites governments and stakeholders to exclude, voluntary compensation approaches using biodiversity credits outside of the mitigation hierarchy. Credits should not be used as offsets to justify impacts that should have been avoided or minimised. Credits should also not replace or crowd-out action and investment to avoid or minimise impacts directly. IAPB strongly recommends adopting a compensation approach using regulatory mechanisms, only if they have the capacity to properly enforce the mitigation hierarchy and define the appropriate locality.

Case studies: local compensation for direct impacts on biodiversity

In **Colombia**, an operational framework of **Habitat Banks** allows the use of biodiversity compensation credits for mandatory offsetting for large-scale projects requiring environmental licensing (mining, fossil fuels exploitation, power sector and infrastructure). Administered by the National Authority of Environmental Licenses, it aims for no net loss of biodiversity and requires long-term management. The first bank was approved in 2016 (Banco de Habitat del Meta). At the end of 2022, at least 10 banks were registered.

Similar **Habitat Banking** practices have also existed in **the USA** since 1972, to offset negative impacts on wetlands and endangered species. A Habitat Bank needs to be approved by the responsible regulatory agency through a banking agreement and necessary permits (for example, for the targeted use of land). The banking agreement contains all bank details of financing, sponsors, mitigation methods and monitoring. The method for calculating the volume of credits for offsetting is based on environmental benchmarks against reference sites.

The **Environment Bank** has been working to create a national network of Habitat Banks to generate the local biodiversity units required by developers to satisfy England's Biodiversity Net Gain requirements which require development projects to adopt the mitigation hierarchy and compensate for residual impacts on Nature. By working alongside local planning authorities, these Habitat Banks support local Nature recovery strategies, sustainable house building, economic growth, job creation and the creation of diverse green spaces for communities to enjoy.

3. Supply chain insetting

Voluntary and compliance supply chain insetting – proactive investment within supply chains to enhance biodiversity-related productivity – should be encouraged. The use of biodiversity credits as insetting refers to an approach where companies or organisations proactively invest in biodiversity within their supply chains and in the places where these are located, for example to address Nature-related impacts and dependencies. This approach is in alignment with frameworks such as the Science Based Targets Network, and considering disclosure aligned with the Taskforce on Nature-related Financial Disclosures (TNFD), the International Sustainability Standards Board, or the EU European Sustainability Reporting Standards. Insetting can support positive outcomes for Nature with potential wider benefits leading to improved business outcomes in the long-term or reduction of ecosystem (natural resources) dependency risks to businesses, and to overall increased resilience in the supply chain.

Stakeholder feedback to IAPB has shown that corporates see this application of biodiversity credits as a tool for transition to new business practices that better support and have less impact on biodiversity and Nature.

Case studies: supply chain insetting

L'OCCITANE en Provence, a sustainable premium cosmetics company, started an Agroecology and Fairtrade collective programme in the Provence and Corsica region of France in 2021. Farms supply a wide range of ingredients, and L'OCCITANE en Provence supports farmers to change their agricultural practices with technical assistance and a premium purchase price. As an example, a supplier of Provençal almond oil for over 20 years has replanted 80 hectares of almond trees, tantamount to over 17,000 trees. They have pivoted to regenerative agriculture using only organic fertiliser and weeding the fields naturally with sheep, cover crops and micro-irrigation systems. Though the project is not structured on credits, L'OCCITANE en Provence considers that for insetting projects through value chains, biodiversity credits would help to quantify the positive impacts attached to the actions paid via the premium price. It also would lead to new financial mechanisms representing complementary revenues for farmers. Building on this existing network and programme, the project's scope could be expanded to include additional partners, farms and areas in the South of France, creating a suitable field for a pilot.

Australian conservation-for-profit organisation **Green Collar's** water management services collaborate with farmers and land managers to improve water quality while supporting agricultural goals. By adopting better land practices, such as optimised cropping and wetland creation, projects aim to reduce nutrient runoff, particularly dissolved inorganic nitrogen, that impact the Great Barrier Reef. The credits generated represent measurable reductions in harmful nutrients or sediment entering waterways. This insetting approach allows businesses to address their environmental impacts and provides an additional income stream for land managers. This is also an example of integrating terrestrial and aquatic biodiversity conservation efforts.

Other use cases: hybrid approaches including links to carbon credits

IAPB recognises that alongside the main use cases for biodiversity credits set out above, the interrelatedness of climate and Nature means that other projects and markets involving Nature or ecosystem services represent possible adjacent markets to biodiversity credits and could deliver positive biodiversity impacts ('co-benefits').[7]

The most well-developed of these are carbon credit markets. The relative size and maturity of carbon credit markets means that there is a large existing base of potential projects which could be compatible with a high integrity biodiversity credits approach, particularly Nature-based solutions projects. For example, some Nature-based solutions projects could receive a premium for benefits to biodiversity ('carbon credits with biodiversity co-benefits'), or also issue biodiversity credits. Different credit types could be 'stacked' (sold separately from a single project), 'stapled' (sold together from different projects) or 'bundled' (sold together from a single project).

IAPB's Supply Working Group's work has highlighted that many project developers see this as a potential opportunity (IAPB, 2024d; 2024e). IAPB considers that innovation and development of hybrid and complementary approaches should be encouraged, and at this stage may provide a more established route to market for biodiversity credit projects or support the development of other markets with similar and compatible aims. However, it should be noted that in the case of hybrid or complementary approaches, additionality and other high integrity conditions, as set out in IAPB's Framework, must be met to avoid any risk of international compensation related to the carbon credit offset.

However, it is essential to note that the function and objectives of adjacent markets may be very different to those of biodiversity credit projects and markets. For example, carbon credits are often used to offset international emissions based on an equivalent metric. Biodiversity is not fungible like this and IAPB excludes this approach to offsetting in a biodiversity context, as set out earlier.

At a technical level, through the design and development stages, projects could be more suited to one market than the other and should clearly articulate if one set of benefits is prioritised. For example, biodiversity credit markets may present an avenue to fund projects that are not eligible under carbon credit market mechanisms (such as coral reef restoration, or ongoing maintenance of biodiversity values in protected areas).

The route to market should also be decided at the project level, taking into account the nature of the project (conservation, restoration or stewardship) and the buyer's and developer's preferences. Where credits are issued with different objectives into different markets, there must be transparency in the methodologies used and in the additionality of each unit to avoid double counting of outcomes.

7 These co-benefits already exist in some regulation. Under the incoming Carbon Removals and Carbon Farming Certification EU Regulation, carbon farming activities, in order to be eligible, have to generate benefits at least for the sustainability objective of protection and restoration of biodiversity and ecosystems, including soil health and avoidance of land degradation. As a result, biodiversity certification could be used to certify the biodiversity co-benefits of carbon credits.

Case studies: hybrid approaches

Reforest'Action, a company focused on the restoration and regeneration of forest ecosystems, is partnering with the Guangxi Chongzuo Linda Forestry Company to restore public plots in the Ghizhou area in the west of China. The region was deforested and transformed into intensive agriculture farmland which led to deterioration of the soil and increased risk of erosion. The project aims to restore the land's ecological properties as well as the biodiversity of the area, though the plantation of 1.5 million trees from six species native to the region from 2021 to 2024. Reforest'Action takes a holistic approach to project planning and measurement of impact, covering carbon storage as well as biodiversity and social outcomes through a combination of field monitoring, remote sensing and reporting from project implementers on predefined metrics.

Conservation International and **Tidal Moon,** an Indigenous-led sustainable enterprise, are working together to develop a project comprising biodiversity credits possibly stacked with blue carbon as part of seagrass restoration efforts in Shark Bay, situated near the westernmost point of Australia. Shark Bay is home to one of the largest, most diverse seagrass meadows in the world, supporting extremely high levels of marine biodiversity and underpinning the area's cultural values. The seagrass meadows are also among the oldest globally, classifying the area as an important irrecoverable carbon site. The site was severely impacted by a marine heatwave in 2011 which destroyed 24% of the seagrass meadows. Tidal Moon has trained and employed a number of divers from the local community to undertake restoration as a complement to sustainable sea cucumber harvesting which is core to the efforts. As a result, the project aims to support multiple objectives including the economic development of Mulgana (the traditional custodians of the region) and opportunities to sustain cultural connections and values through caring for the environment.

Scaling up demand

Biodiversity credits can be a robust and evidence-based tool through which organisations can demonstrate progress towards their Nature objectives. They offer a range of uses cases and applications (as set out above) which makes them a flexible tool. When combined with robust monitoring, reporting and verification requirements, buyers can be confident in outcomes and the claims that they make.

Internal and external demand drivers can support the business case for buyers (Figure 7). In some contexts, internal factors such as organisational values and access to ecosystem services (for risk management but also for business opportunities through productive investment in Nature within value chains) might lead to corporate actions.

While in other situations, external requirements or commitments such as regulation (on compensation and contribution aspects, but also through disclosure requirements like the EU European Sustainability Reporting Standards or Corporate Sustainability Reporting Directive), reputation, access to finance and insurance, and license to operate might represent the root cause for purchasing biodiversity credits (BCA, 2024b; WEF 2023).

Voluntary markets alone will not generate sufficient demand to make a major contribution to the shortfall in funding for biodiversity. However, voluntary markets play an important role, including as precursors to compliance markets, as spaces to spur innovation in use cases and pilots, and to support companies with existing or future-related regulatory requirements, such as Nature-related financial reporting (Carbone 4, 2024).

IAPB believes the strongest demand stimulus will come from government regulation. Governments could directly regulate for voluntary and/or compliance approaches. They can also reduce harmful subsidies to intensive agriculture and use policy and regulation to facilitate growth. For example, local frameworks and governance rules could reduce the limitations or difficulties encountered in operating in an early-stage market (such as clarity or stability of legal frameworks, rule of law and ease of doing business). Strong support of local regulation gives buyers and financial institutions confidence to invest in biodiversity credits. Policymakers could also take steps to enhance uptake from internal drivers, through measures to encourage or require companies and financial institutions to account for, disclose and manage biodiversity impacts, or to clarify the legal and accounting understanding of credits to allow buyers to account for investment in biodiversity credits as assets rather than expenditure.

Finally, international public, private and blended finance can play an important role to support the viability of biodiversity credits including driving demand. For example, leveraging public or philanthropic money to crowd in private finance and demand interest can catalyse development. Public finance can also provide technical assistance and capacity building. An example of leveraging public funding as a catalyst to attract private capital is the Wildlife Credits supported by KfW (on the credit) and Agence Française de Développement (AFD – through the Sustainable Wildlife Management programme to strengthen the enabling environment).
This represents a performance-based payment scheme designed by WWF Namibia together with local community conservancies to protect wildlife (lions, elephants and rhinos) across 4 million hectares.

Case studies: Market innovation

As with all markets, biodiversity credit markets lend themselves to innovation. This could be either technical – making use of the latest digital monitoring and contract technologies – or financial – through innovative financial vehicles. Some examples are detailed below.

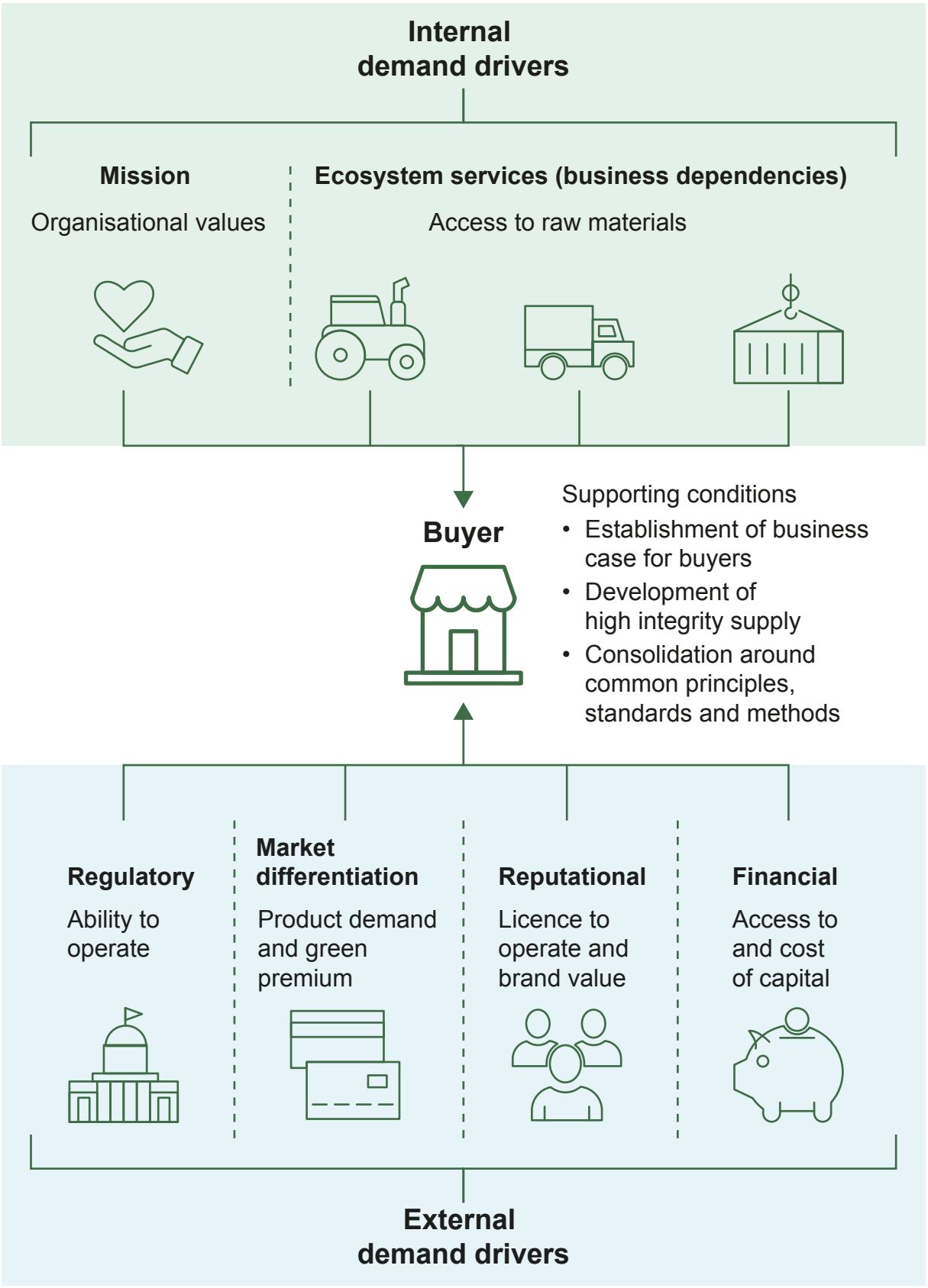
Waddapt is a service provider, combining a business-to-client approach through a marketplace connecting buyers interested in purchasing biodiversity units with on-the-ground projects co-designed with communities. Block-chain technology is used to secure proof of measurement collected through participatory science protocols on predefined metrics. One of the proposed projects focuses on the protection of the black rhino in Namibia where guards are equipped with a phone application that lets them record evidence and upload it on Waddapt. All collected data is openly accessible on Waddapt's website, and buyers have a specific dashboard dedicated to the project, funded by the units they bought, monitoring all defined metrics of the project. With this service, Waddapt aims to match biodiversity credit projects and buyers, as well as limit the costs for projects where the use of distributed ledger technology limits the need for validation and verification body interventions.

Restore is a private corporation that invests in biodiversity restoration and conservation projects through a prototype biodiversity fund, with the aim of issuing biodiversity units on outcome-based verifications and registering them through a third-party registry. Restore is proposing that third-party actors should become shareholders in its company with the prospect that the shares will be proportionally equated to a number of biodiversity units through a contract, once biodiversity outcomes are verified. These units will then be transferred from Restore to the shareholders alongside the linked claims rights, allowing the shareholder to put the units on their balance sheet and claim them.

The insurance sector will also play a role in scaling biodiversity credit markets by covering Nature-related risks. Emerging approaches cover certain actions, such as **AXA**'s Climate parametric insurance for Nature that provides coral reef, mangroves or forest conservation or restoration insurance, and protection from climate risks. The role of Nature-based solutions in preventing environmental risks is central and insurance products are being developed to integrate their effects into insurance, the level of insured capital being aligned to the initial investment size and the refundable amount linked to the assessed level of threat.

The Biodiversity Credit Accelerator developed by the **Conservation Finance Alliance,** a professional association for conservation finance experts and practitioners, has proposed a facility that will provide financial and technical support to pilot projects. It will capture and share knowledge on biodiversity credits and build confidence in the market, with strong support for projects led by IPs and LCs.

Figure 7: Demand drivers for biodiversity credits



Adapted from World Economic Forum (2023), Biodiversity credits: Demand analysis and market outlook

5. Guidance

IAPB has developed a comprehensive Framework by building on the work of IAPB's five Working Groups (IAPB 2024c; 2024e; 2024f; 2024g) and with the input of Knowledge Partners, consultations (IAPB 2024a; 2024b), extensive literature reviews and numerous discussions with a wide range of stakeholders.[8] The Framework aims to lay the foundations for the development of high integrity biodiversity credit markets by proposing a core set of High-Level Principles alongside guidance for market actors. IAPB's intention is to encourage enabling policy and regulatory mechanisms to connect market actors including project developers, IPs and LCs, investors, and credit buyers. IAPB aims to guide these market actors on best practice, with the goal of generating investments in Nature conservation and restoration and supporting the alignment of broader business decisions with GBF targets and principles of equity and justice.

At their root, these markets depend on the active alignment of buyers and sellers with high integrity principles at the level of individual credits and projects. To ensure integrity at scale and pace, governments and regulators, public and private finance (including buyers), and validation and verification bodies must all work together to create a supportive enabling environment and high integrity market activity.

This section contains:

- a set of **High-Level Principles** for high integrity biodiversity credit markets
- detailed **guidance** on how to operationalise high integrity, categorised by market actor, covering seven core topics that IAPB's work has identified
- information on a suite of **pilot projects** that provides practical demonstration of biodiversity credits across a range of use cases, biomes and geographies

High-Level Principles

IAPB, in collaboration with the BCA and the WEF, has developed 21 High-Level Principles for high integrity biodiversity credit markets. The three entities have complementary mandates and look to provide rules and guidance for the establishment of credible, scalable biodiversity credit markets. By working together, the organisations jointly sought to bring coherence to, and establish guidelines for, biodiversity crediting projects in response to calls from market actors for greater clarity around market rules and protocols.

8 An extensive literature review of reports, position papers and issue papers, from several organisations and initiatives, including Carbone 4 (2024), Conservation International (2024), Mirova (2024), NatureFinance (2024a, 2024b), NatureFinance and Carbone 4 (2023), Plan Vivo, Good Carbon, Blue Marine Foundation (2024), Pollination (2023), Integrity Council for the Voluntary Carbon Market (2024), Voluntary Carbon Markets Integrity Initiative (2024) and Verra (2024).

This work draws on discussions between BCA, IAPB and WEF, workshops with others, the latest literature in this field, an extensive desk review of existing standards and guidelines, and consultations.

The High-Level Principles seek to define the success factors for high integrity biodiversity credits and promote their use in a way that simultaneously delivers positive outcomes for Nature and just, equitable benefits for the stewards of biodiversity. They should also help prevent a recurrence of the problems witnessed in carbon credit markets, by defining the principles of governance and integrity which should be respected as the market evolves rapidly.

The 21 High-Level Principles have been grouped into three overarching themes (Figure 8).

Figure 8: The three overarching themes of the High-Level Principles

1. Verified outcomes for Nature	2. Equity and fairness for people	3. Good governance for markets
Rigorous measurement, validation and verification to ensure all credits deliver robust outcomes.	'No harm' approach, generating meaningful, equitable benefits. Respecting the rights of Indigenous Peoples and local communities. Ensuring their inclusion as active market actors and supporting their leadership and ownership within the system.	Transparent and sound governance across the system, at macro-level and project-level implementation.

The full list of 21 High-Level Principles can be found in the table below. For the purpose of this Framework, IAPB has sub-divided the High-Level Principles into seven sub-themes (Lifecycle, Criteria, Validation, Rights, Inclusion and Rewards, Transparency and Accountability), that we provide guidance on for market actors in the next section (Figure 9). A joint paper with BCA and WEF with further detail on the 21 individual principles is forthcoming.

Figure 9: The seven sub-themes of the High-Level Principles

1. Verified outcomes for Nature	2. Equity and fairness for people	3. Good governance for markets
Lifecycle	**Rights**	**Transparency**
HLP 1: Defined biodiversity objectives and activity type **HLP 2:** Demand integrity and the mitigation hierarchy **HLP 3:** Credit issuance and tracking **HLP 4:** Ex ante and ex post credits	**HLP 11:** Legal and customary land and water rights **HLP 12:** Respecting human rights and the rights of Indigenous Peoples **HLP 13:** Free, prior and informed consent	**HLP 18:** Transparent governance structure
Criteria	**Inclusion and rewards**	**Accountability**
HLP 5: Additionality **HLP 6:** Baselines **HLP 7:** Durability **HLP 8:** Leakage	**HLP 14:** Indigenous Peoples and local communities' involvement in governance **HLP 15:** No harm **HLP 16:** Benefit sharing **HLP 17:** Grievance mechanism	**HLP 19:** Data sovereignty **HLP 20:** Alignment with frameworks **HLP 21:** Tradability
Validation		
HLP 9: Monitoring, reporting and verification **HLP 10:** Third-party audits		

Guidance for market actors

IAPB's guidance for market actors is structured around the seven sub-themes. IAPB's guidance aims to complement the High-Level Principles by providing detailed information to market actors on what is needed to operationalise best practices for high integrity biodiversity credits.

It is important to note that, while the High-Level Principles were designed primarily for voluntary markets, the scope of IAPB's work extends beyond voluntary operating contexts for biodiversity credit initiatives. To this end, guidance has also been provided that is appropriate for compliance markets, including the use cases for biodiversity credits referenced above (voluntary contribution, local compensation for direct impacts and supply chain insetting).

IAPB's operational guidance is intended to be easily accessible, understandable and usable by market actors. Recommendations are grouped under the following categories: **buyers**, **suppliers**, and **enablers** (governments and regulators, financial institutions, and standards bodies). They are further defined by relevance to different use cases.

1. Verified outcomes for Nature

Lifecycle

A biodiversity credit lifecycle can be complex due to challenges in measurement, operational barriers, and the fact that credits are tied to specific ecosystems and not easily interchangeable like carbon credits. Moreover, project lifecycle and measurement of outcomes will depend on biodiversity objectives and vary between restoration and avoided loss/maintenance projects across a range of biodiversity credit activity types **(HLP 1)**, including voluntary contribution, local compensation for direct impacts and supply chain insetting. To guide successful development of projects, it is necessary to apply the mitigation hierarchy **(as part of HLP 2)**, which is a well-recognised, iterative process that prioritises avoidance of a project's negative impacts, then reduction of remaining negative impacts, followed by restoration locally, with local compensation of any remaining residual impacts as a last resort.

Credit issuance and tracking are further important dimensions of the biodiversity project lifecycle **(HLP 3)**. The issuance stage involves the exchange of funds or purchase of credits and should be governed by established rules or protocols relating to the execution of the transaction, including addressing disputes over the ownership of biodiversity credits. The project developer and standard setters both have responsibility for issuing credits, while the validation and verification body (as auditor) is tasked with validating the issuance and any withdrawals. As IAPB's Measurement Working Group has highlighted, existing repositories, such as GEOBON's BON in a Box or the Humboldt extension for ecological inventories (part of Darwin Core), could facilitate credit tracking and publication of credit issuance details (Gonzalez et al., 2023). As above, once outcomes are certified, credits can be claimed on and retired.

IAPB recognises that when and how claims are made are fundamental issues for high integrity. There is a risk of real or perceived greenwashing, particularly if claims are not adequately verified or are withdrawn at a later date. It is essential that claims made by buyers are based on achieved outcomes that have been certified. Credits may be sold before verification (for example forward contracts), but such credits should not be used to make claims relating to outcomes before those outcomes have been achieved and certified, at which point a certificate will be issued to support appropriate claims. Only specific and limited communication regarding financial contribution should be made before verification.

Credits must be supported by a validation process that gives confidence that the project design and actions being funded will lead to the planned outcomes being achieved. One means of achieving this is to use certificates. Validated certificates can be issued throughout the lifecycle of a project to allow buyers to make claims, but only once management actions (inputs) are completed and biodiversity benefits (outputs) are achieved and verified. These projects allow for claims to be made but give assurance to the exact type and state of any claim, whether they are based in management actions (for example, setting aside land for restoration or preservation) or actual biodiversity gains and protection.

To ensure clarity and informed decision-making, it is imperative that credits are explicitly labelled as either 'ex ante' or 'ex post' **(HLP 4)** and a form of certification issuance mechanism is employed to monitor delivery and provide transparency on the nature of any claim.

Guidance

Buyers:

- Should ensure claims reflect progress towards actual biodiversity positive outcomes. This means that biodiversity credit claims are only made on certified outcomes (either management actions or biodiversity gains/loss avoidance).
- Should follow the mitigation hierarchy for site-specific impacts.
- Should use risk sharing between buyer and issuer to underpin the biodiversity positive outcome.

Suppliers:

- Should permit any activity type, including biodiversity co-benefits with carbon credits, and stacking of multiple credits (beyond carbon) as long as they result in additional outcomes for biodiversity (maintenance or restoration), measured and valued in a way that is robust, comparable, systematic, and transparent. This should be supported by a transparent and well-documented foundation of evidence, which delineates the way the activities are expected to achieve the intended outcomes for biodiversity.

- Should consider alternative models and innovations for credit or certificate mechanisms, including the use of distributed ledger technology and the application of remote sensing-based monitoring, reporting and verification methodologies at the national level. Methodologies and approaches that provide opportunities for IPs and LCs to support monitoring and verification should be considered.

Enablers:

- **Governments and standards bodies** should provide guidance on appropriate approaches to the bundling and stacking of biodiversity credits and carbon credits, as well as other natural capital credits. Buyers will require market guidance around high integrity use cases for bundled or stacked credits to achieve both climate and Nature targets simultaneously. In this context, biodiversity credits must not be offset internationally.
- **Governments** should support the development and the correct application of high integrity mitigation hierarchies.
- **Standards bodies** should provide details on credit issuance, including issuance dates, retirement status and validation and verification reports, all compiled in a repository.
- **Standards bodies** should require validation of any management actions at issuance, to achieve the highest degree of probability to deliver positive outcomes. Consequently, outputs must be monitored so that certificates can reflect progress towards the expected biodiversity positive outcome.
- **Standards bodies** should explicitly require a default mechanism in the design, in case the biodiversity positive outcomes are not achieved, so that certificates can be withdrawn.
- **Standards bodies** should implement a certification process to ensure credible assurance of claims and credits, including biodiversity co-benefits with carbon credits, following rigorous evidence-based, peer reviewed processes.

Case study

Implementation scale: Global. **Market actor:** Enabler

Climate, Community and Biodiversity (CCB) Standards, managed by Verra, provide a robust certification process for ensuring the credibility of biodiversity co-benefits with carbon credits (Verra, no date). The Verra Registry is the central repository for all information and documentation related to CCB projects. The registry records the generation, retirement, and cancellation of all verified carbon units that bear a CCB label, which indicates that an emission reduction unit was generated during a CCB-verified period. Registry account holders must pass strict 'know-your-customer' background checks before opening an account. Other aspects of the process include the requirement for transparent reporting, with all projects being expected to provide detailed information on biodiversity impacts and community benefits.

Case study

Implementation scale: Global. **Market actor:** Buyer

Applying the mitigation hierarchy at the value chain or portfolio level may be operationally difficult, specifically for upstream/downstream value chain application and for companies that have no known site-specific impacts. The **AR3T Action Framework**, developed by the Science Based Targets Network (SBTN, 2024), gives clear guidance on how corporates can 'avoid and reduce' pressures on Nature loss, 'regenerate and restore' so that Nature can recover, and 'transform' underlying systems to address the drivers of Nature loss. Setting a Nature strategy represents the cornerstone for businesses to assess their relationship with Nature, set targets and take action. The AR3T Action Framework builds from the Mitigation and Conservation Hierarchy (Milner-Gulland et al., 2021), which was developed to bridge the tangible impact mitigation approach from the mitigation hierarchy with the potential for actors, including companies, to contribute to societal conservation goals.

Case study

Implementation scale: Global. **Market actor:** Supplier

Earthly is a business-to-business company that secures investment into conservation and restoration projects compliant with the Biodiversity Net Gain regulation in England. The company has issued and sold voluntary biodiversity credits since July 2024. Each voluntary biodiversity credit corresponds to 3x3m parcels of land and is uniquely identified and recorded on a public ledger, which uses What3words to map every square to avoid double counting.[9]

Criteria

There are several criteria which biodiversity credit projects should adhere to in order to function in an integrated and high integrity manner. Biodiversity credits should only be awarded to projects where biodiversity conservation or restoration is clearly additional to what would have happened without any intervention. This includes projects which recognise and reward the services of local Nature stewards protecting largely intact ecosystems, which often cannot be guaranteed without project finance. Additionality **(HLP 5)** should be made relevant to different use cases for biodiversity credits and 'fit for purpose' by tailoring requirements to the specific characteristics of different ecosystems and adapting proof of additionality to the project.

9 What3words is a proprietary geocode system designed to identify any location on the surface of Earth with a resolution of about 3 metres. The system encodes geographic coordinates into three permanently fixed dictionary words.

- **Avoided loss/maintenance projects**: A well-developed monitoring, evaluation and learning system with a robust baseline (based on data generated under an adequate experimental design to allow for robust statistical analyses, which could include evidence of the effectiveness of the stewardship provided by local communities) should be able to demonstrate that biodiversity and ecosystem services are at risk under business as usual (without the project intervention) and therefore strengthen the case for maintenance.
- **Restoration projects**: It is essential for these types of projects to demonstrate ecological additionality by showing that the positive biodiversity outcomes would not have been achieved without the project and its anticipated credit revenues. The counterfactual must be stated and justified. Restoration projects must demonstrate that, against an agreed, scientifically rigorous baseline, there has been a measurable increase in biodiversity. This biodiversity uplift should be measured through the lifetime of the project using the same methodology.

Robust reporting of project outcomes also depends on use of appropriate scientific baselines and counterfactuals **(HLP 6)**, which are clearly described, well-justified and evaluated using scientific methods throughout the duration of the project. Limitations should be stated and incorporated into the biodiversity credit. Approaches to baseline selection will vary between restoration and avoided loss/maintenance projects. For instance, restoration project methodologies may include reference sites that have undergone similar restoration and models that predict biodiversity gain for the site and/or define a site-appropriate biodiversity target. Whereas avoided loss projects may require a counterfactual involving sites once similar to the project site that have already undergone the type of degradation expected at the project site. It is also necessary that IPs and LCs are involved in the monitoring and evaluation, and that technical capacity (internal capacity-building and access to independent advice) is accessible, to ensure fair and active engagement and to avoid control of projects by intermediaries.

Durability **(HLP 7)** is also essential to creating sustainable, efficient and equitable biodiversity credit markets, by ensuring adaptation and additionality of ecological, economic and social outcomes over the life of the project. This should be prioritised, alongside addressing challenges like leakage **(HLP 8)**, which refers to unintended, positive or negative, consequences that impact areas beyond the project site. This can denote negative consequences for biodiversity, local markets, or local communities' spiritual and cultural wellbeing. An example of negative leakage is increased protection of a marine area resulting in overfishing elsewhere. This represents a real challenge to the development of high integrity biodiversity credit projects.

Guidance

Buyers:

- Should be confident that they are helping to cause the project intervention with their investment, for the purpose of financial additionality.

Suppliers:

- Should evidence and verify additionality through the project lifecycle. The approach should be 'fit for purpose' for avoided loss/maintenance and restoration projects, and include support for conserving intact ecosystems that are not under threat. Biodiversity credit projects must demonstrate that positive biodiversity outcomes would not have been achieved without the project and its anticipated credit revenues.
- Should clearly state counterfactuals or static baselines and justify them in a scientifically rigorous manner. State-of-the-art methods for identifying and monitoring counterfactuals and baselines should be employed, ideally supported by appropriate in situ data, and scientific uncertainty should be estimated and considered.
- Should ensure leakage is evaluated, quantified (where possible) and managed. Estimation of leakage should be robust, and monitoring should extend beyond the perimeter of the project. Taking a jurisdictional or landscape approach may also reduce the risk of leakage.

Enablers:

- **Governments and financial institutions** should provide financial and legal assurance to ensure that ecological outcomes are maintained over time.
- **Standards bodies** should ensure that independent rating agencies play a crucial role in the biodiversity credits ecosystem to provide a risk assessment on the effective robustness of the issued credits and whether they deliver on their stated benefits over the long term.
- **Standards bodies** should assess criteria such as additionality, durability, leakage and overlapping claims, as well as cross sectoral co-benefits criteria such as IPs and LCs' benefits, GBF contribution and safeguards against negative impacts. To enhance transparency, the assessment should be publicly available.

Case study

Implementation scale: Global. **Market actor:** Enabler

Verra's SD VISta Nature Framework incorporates a crediting baseline, which reflects the likelihood of ecosystem intactness loss (extent, condition or both) in the absence of the project intervention (Verra, 2023). To establish a crediting baseline, a standardised ecoregional approach is used. The annual trend is estimated for an entire Country Ecoregion Component and allocated to grid cells within it based on relative risk of loss to ecosystem intactness. A standardised approach has several advantages over a project-by-project approach to setting baselines, including increased consistency by relying on standardised global datasets rather than project-defined reference areas and reduced cost burden for project proponents and validation and verification bodies.

Case study

Implementation scale: Global. **Market actor:** Enabler

Plan Vivo, instead of using a baseline loss, measures gains or losses against a site's state in 'Year 0' (Plan Vivo, 2023). The earliest point at which certificates can be issued, for both maintenance and restoration projects, is Year 2 (24 months after baselining), after a minimum of three biodiversity measurements. The sources of uncertainty in measuring projects' impact are various and include measurement uncertainty, environmental variables and biological fluctuations. Over the course of the project, measurement accuracy is continuously tested and assessed, with a correction factor applied if there is a significant change in the early years.

Case study

Implementation scale: National. **Implementation location:** England. **Maker actor:** Enabler

England's Biodiversity Net Gain policy, introduced through the Environment Act 2021, represents a significant shift in biodiversity conservation approach (Defra, 2024). This policy mandates that all new developments must deliver at least a 10% improvement in biodiversity value. Distinguishing features of the policy include a long-term commitment for biodiversity gains to be maintained for at least 30 years.

Validation

Robust validation **(HLP 9)** is imperative to high integrity biodiversity credits, helping to strengthen trust and confidence among market actors. Measurements should be underpinned by rigorous scientific methodologies and take into account biological diversity, ecosystem and habitat conditions, taxonomic-specific measures, and species of high concern or importance, if present at the project site. The choice of metrics should be made or at least reviewed by experts with relevant local and ecosystem-specific expertise, including local scientists and government agencies, and drawing on Indigenous and local knowledge where relevant.

Biodiversity crediting projects should also have programme-level requirements for robust, third-party audits **(HLP 10)**, carried out by accredited validation and verification bodies. Independent audits may include spot checks, interviews with main stakeholders, reviews of documentation and required evidence, monitoring of counterfactuals or baselines, and assessments of compliance with standards and registries' requirements, among other aspects. Additionally, independent remote measurement through monitoring tools such as satellite imagery and use of public databases may be performed.

Guidance

Suppliers:

- Should ensure that measurements include actions (inputs) and outcomes (biodiversity positive), and metrics are appropriate to the ecosystem, evidence-based, and independently verified and assured for non-scientific or commercial bias. The measurements should be updated at frequencies appropriate to the ecosystem, pressures acting on the system, project location and objectives.
- Should adopt monitoring, reporting and verification approaches that include both an ecosystem state measure and measurements of biodiversity outcomes (measures of variety/diversity) for vital taxa.

Enablers:

- **Governments and financial institutions** should ensure that technical capacity (internal capacity-building and access to independent advice) is accessible, to enable IPs and LCs to fairly engage with biodiversity credits and avoid control of projects by intermediaries, or their lands and resources being taken away from them.
- **Standards bodies** should accredit verification organisations by a separate biodiversity oversight body. Guardrails to prevent validation and verification bodies from conflicts of interest, which include financial payments for verification, should ensure objectivity, not bias.
- **Standards bodies** should include relevant ecosystem and biodiversity expertise as part of third-party assurance.
- **Governments and standards bodies** should build open technology platforms for easy access to verifiable ecological data.

Suppliers and enablers (standards bodies):

- Should ensure that validation and verification processes include comprehensive reviews at the project level that correspond to the associated level of risk.
- Should provide robust, independent third-party assurance, validation and verification at the project level to ensure high integrity of biodiversity credit projects and their associated claims. The biodiversity-crediting projects must have programme-level requirements for robust independent third-party validation and verification of biodiversity impact, through accredited third-party validation and verification bodies, while the assurance of the buyer's claims related to the biodiversity credits should ensure the integrity of use.
- Should implement standardised metrics and advanced technologies, where appropriate, to secure high-quality data, ensure consistency in reporting, and reduce the cost of monitoring, reporting and verification, enabling projects to be resourced sufficiently to provide substantial benefits to IPs and LCs.

Case study

Implementation scale: Global. **Market actor:** Enabler

The **Biodiversity Futures Initiative** was established as an international group of leading biodiversity academics to provide peer review scrutiny and independent verification of credits (The Biodiversity Futures Initiative, no date). The approach (followed by the biodiversity company rePlanet) seeks to leverage experts in a process that is robust, and could be used by one or a number of certification bodies. One aspect of its approach is to provide transparency to aid confidence and learning. The initiative is committed to publishing its reviews online and open access to make them publicly available for external scrutiny. It also seeks to draw on the information it gathers to identify best practice including for quantifying biodiversity gain for different habitat types, and different monitoring, reporting and verification and analysis approaches.

Case study

Implementation scale: National. **Implementation location:** Australia.
Market actor: Enabler

Australia's Nature Repair Act 2023 established the Nature Repair Market to promote investment in the long-term repair of Nature, operating alongside the carbon market. The Nature Repair Market is intended to establish a simple means to invest in projects that will protect and foster Nature and biodiversity, through the issuance and trading of biodiversity certificates (without the need to buy or lease land). Under this voluntary scheme, landowners and managers can undertake maintenance or restoration projects on their properties. These projects, once assessed and verified by independent experts, generate biodiversity certificates that represent measurable improvements in native species populations or ecosystem health. The Clean Energy Regulator is responsible for project registration, certificate issuance, inspection and auditing and, where necessary, enforcement in the event of non-compliance. For the assessment of projects before approval, it is assisted by an independent expert committee ('the Nature Repair Committee').

2. Equity and fairness for people

Rights

Equitable biodiversity credit markets rely on the rights of all those involved being respected. This includes legal and customary land and water rights **(HLP 11)** and human rights **(HLP 12)**, and is particularly relevant to IPs and LCs in both the Global North and Global South, whose rights are not always respected. To mitigate risks to rights infractions, projects must demonstrate a clear understanding of the context of the project and should engage meaningfully with IP and LC groups at all stages of the project lifecycle.

Rights over land, water, ocean and resource uses can be highly complex. Local communities, which include smallholder farmers, rural producers and fishing communities, play a significant role in biodiversity conservation through their land management practices, traditional knowledge and customs. IPs and LCs' access to their lands, water, resources and tenure rights – which extend beyond ownership rights to include access, withdrawal, management, exclusion, alienation and transferability – must be respected regardless of whether legally registered or registered through customary means. These measures should aim to align with international and regional human rights standards, including those outlined in the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and the International Labour Organisation Convention No. 169 (PRO 169).

For markets to develop in an equitable and fair way, project developers should adopt best practice approaches that position IPs and LCs as equity shareholders and leaders in projects. At a minimum, free, prior and informed consent (FPIC) of IPs and LCs must be respected. FPIC **(HLP 13)** is derived from the right to self-determination, a cornerstone of IPs and LCs' rights, and entitles IPs and LCs to shape the design, implementation, monitoring and evaluation of projects, including the right to revoke consent. Involving them in this way strengthens IPs and LCs' decision-making power and is critical to protecting local Nature stewards' rights and delivering their priorities.

Guidance

Suppliers:

- Should design and initiate credits in compliance with Indigenous law and customs, domestic law and international law, with support from IPs and LCs at all stages of a project, whether they are project owners, custodians of the biodiversity credit project or otherwise affected by the project. FPIC should be clearly obtained and followed in all cases throughout the lifetime of the project.
- Should promote IPs and LCs' agency, empowerment and agendas, and respect their rights and governance structures, including full and effective participation in all decision-making processes, as well as adherence to FPIC.

Enablers:

- **Standards bodies** should implement a policy in the certification process to ensure that relevant rights, especially those of IPs and LCs, are respected as part of individual projects or transactions. This includes mandating FPIC procedures as part of the approval process. Project requirements should also be designed flexibly to enable biodiversity crediting projects even where having full rights and disposition is not practical or where tenure is not formal.
- **Governments** should incorporate UNDRIP, the International Labour Office Convention No. 169 (PRO 169), and other relevant international rights protection frameworks, as well as frameworks focused on land ownership, into domestic legislation and constitutional amendments.
- **Governments and standards bodies** should mandate human rights due diligence directives which prohibit companies from engaging in biodiversity credit transactions (buying or selling) if they violate human rights and lack adequate FPIC policies.

Case study

Implementation scale: National. **Implementation location:** New Zealand. **Market actor:** Enabler

New Zealand has incorporated UNDRIP through a combination of judicial applications, policy initiatives and unique governance structures. The Waitangi Tribunal, a standing commission, has extensively referenced UNDRIP in its rulings, integrating it into New Zealand's domestic legal framework. The government has been developing a National Action Plan to implement UNDRIP involving a partnership between the government, **Māori leaders, the National Iwi Chairs Forum, and the Human Rights Commission.** The governance structure for developing the plan involved Māori representatives co-developing it alongside government ministers. Māori representation in governance is ensured through the Māori Council, a statutory representative body serving as a national voice and policy-making body for Māori wellbeing. Additionally, the Parliament has seven reserved Māori electorate seats, providing direct Māori representation in the legislative process.

Case study

Implementation scale: Global. **Market actor:** Enabler

The Forest Stewardship Council's (FSC) Policy for Association (FSC, 2022) serves as a risk management tool for FSC, protecting the credibility and reputation of the FSC brand and organisations associated with it. It defines five unacceptable activities that individuals and organisations must avoid in both certified and non-certified operations. The policy aims to avoid any association with activities that violate FSC's core principles and compromise its mission. Related to this, individuals and organisations are expected to have mitigation strategies in place and make use of tools including FSC's guidelines for the implementation of FPIC. Enforced through due diligence, audits and a complaint mechanism, the policy, applied to all market actors, from developers to buyers, can enable swift action against violators – including denial of certification and public reporting. This policy approach could be adapted for biodiversity credit market certifications to ensure integrity across all participants. A 'Policy for Association' in biodiversity credit markets could define unacceptable activities like greenwashing, rights violations, or significant conversion of natural forest or high conservation value areas.

Case study

Implementation scale: Global. **Market actor:** Supplier

The **AWE for Nature Foundation** is developing the Chewore South conservation project in the Zambezi Valley of Zimbabwe. For this project, the foundation has obtained an offer for a 25-year lease, and development of a co-management agreement with the Zimbabwe Parks and Wildlife Management Authority. Historically, limitations such as short-term agreements have constrained conservation investment, with consequences for the local communities living alongside wildlife. AWE for Nature is advancing conservation on the ground and developing durable revenue sources for protected areas, mobilising tools such as biodiversity credits.

Inclusion and rewards

As IAPB's Stewardship and Governance Working Groups have noted, biodiversity credit markets can only be high integrity and inclusive if IPs and LCs are meaningfully involved from the outset **(HLP 14)**. IPs and LCs play vital roles in local biodiversity conservation and often possess deep-rooted ancestral and cultural connections to their lands, which underpin their identity and way of life. As such, biodiversity credit-generating projects should be designed, initiated and managed in compliance with Indigenous, domestic and international law, whether IPs and LCs are custodians of the biodiversity credit project or otherwise affected by it.

A number of routes exist for upholding the rights of vulnerable actors, including local Nature stewards, and ensuring projects cause no harm **(HLP 15)**. Biodiversity credit schemes should support IPs and LCs' inclusion in projects, actively monitor for harm to IPs and LCs throughout the project lifecycle, and have robust risk assessment and mitigation processes in place for managing risks linked to project activities. Biodiversity credit projects should also align with national and international safeguarding standards set for sustainable development projects. No harm can also be considered through the lens of information access. Market dynamics and outcomes are closely linked to who has access to what information, and actors' capability to make use of that information. As such, biodiversity credit markets should draw on the work that has been done to eradicate information asymmetries in carbon credit markets, as they display several parallels and similarities – for example, the United Nations Framework Convention on Climate Change's Non-Market Approaches Platform (UNFCCC, 2024). Grievance mechanisms **(HLP 17)** should also be deployed to ensure fair and equitable treatment of vulnerable individuals and groups. There are some broadly agreed quality markers of effective grievance mechanisms, such as those included in the United Nations' Guiding Principles for Business and Human Rights. Some market and sector-level 'ombudsperson' grievance mechanisms are also in use.

Equitable markets also mean that actors receive a fair distribution of benefits compensation **(HLP 16)** or other mechanisms that recognise and remunerate the stewardship provided by IPs and LCs. This issue is acute for Nature stewards and other local stakeholders, particularly in low- and middle-income countries where local groups often lack the power to negotiate fair terms. In the absence of equity, Nature stewards bear conservation costs without commensurate benefits, and biodiversity-rich but economically disadvantaged countries can see their resources traded and profited from without fair compensation. These issues should be carefully considered in the design of biodiversity credit schemes, with mechanisms embedded for ensuring fairer returns and delivering economic and social additionality to local stakeholders.

Guidance

Buyers:

- Should partner with IPs and LCs by funding projects and schemes that are truly led by them. Doing so will support the people who steward significant areas of the world's biodiversity, thereby supporting Nature in the places where it is needed most.

Suppliers:

- Should engage with IPs and LCs in a way that recognises, protects and reinforces their rights. They should also transparently disclose how IPs and LCs are involved and give consent, compliant with Indigenous and international law. Avoidance of negative impacts on IPs and LCs' protected territories and resources and respect for areas inhabited by or believed to be inhabited by uncontacted or isolated IPs and LCs must be maintained.
- Should establish IP and LC-owned and managed biodiversity credit projects and methodologies, that support IPs and LCs' priorities for natural resources.
- Should embed benefit sharing within project contracts, particularly in relation to IPs and LCs. Benefit sharing should be considered a basic compliance requirement, recognising that local Nature stewards, including IPs and LCs, are entitled to benefits from their territories as a non-negotiable right and prerequisite for any project.

Enablers:

- **Standards bodies** should implement accessible and effective grievance mechanisms on digital platforms for Nature stewards and local stakeholders to raise concerns and seek redress. Grievance mechanisms should be transparent, public and locally relevant, gender-responsive and culturally appropriate.
- **Governments and standards bodies** should establish a benefit-sharing mechanism as a criterion for certification, and verify project benefit sharing to ensure benefits are distributed equitably.

- **Governments and standards bodies** should implement measures to strengthen IPs and LCs' inclusion and benefit sharing. These include: establishing benefit-sharing mechanisms at national or regional levels, implementing government-funded programmes to support IP and LC-led environmental stewardship, creating Nature-focused wealth funds, and developing sovereign or sub-sovereign supply coalitions.
- **Governments and standards bodies** should initiate market information and capacity-building programmes for Nature stewards, such as by creating a web platform for information exchange between Nature stewards and project partners, and developing user-friendly digital platforms that offer essential biodiversity credit market information.

Case study

Implementation scale: Global. **Market actor:** Supplier

Since 2023, **Earth Acre** has been implementing the **Ol Kinyei Biodiversity project** in the Ol Kinyei conservancy, the oldest of the Maasai Mara's ecosystem in Kenya. Land use changes and fencing have disrupted migratory corridors, leading to habitat degradation, as well as overgrazing by herbivores and destruction of forests by elephants which have degraded the area. The project aims to restore natural wildlife movement and improve habitat through stewardship interventions with direct payments to individual landowners for their Nature stewardship.

Case study

Implementation scale: National. **Implementation location:** Brazil. **Market actor:** Enabler

Brazil's Biodiversity Law streamlines procedures and provides guidelines on sharing benefits with communities (Forest Trends, 2023). The law requires benefits to be negotiated at the time of commercialisation and includes an online registry where users declare their activities related to traditional knowledge, including international remittance of samples of genetic heritage and shipment of samples containing genetic heritage as part of research activities. This ensures benefits are shared directly with identifiable communities or through a government fund, providing a transparent and equitable distribution framework.

Case study

Implementation scale: National. **Implementation location:** Uganda.
Market actor: Supplier

The **Environmental Conservation Trust of Uganda (ECOTRUST) biodiversity credits programme** is a community-designed, owned and led corridor restoration programme, based on a multi-metric model. ECOTRUST has adopted the Gender Action Learning System (GALS) as a community engagement strategy throughout all stages of the biodiversity credit project's design and implementation. The GALS methodology was created by Oxfam as a community-led household methodology that uses participatory processes to empower women and men at different literacy levels to jointly take action against gender inequality and plan for their futures together. With this approach to community engagement, ECOTRUST supports the effective recognition and protection of Indigenous rights and customary uses aligned to conservation objectives.

3. Good governance for markets

Transparency

Transparency is key to enabling accountability, promoting trust among stakeholders and fostering market credibility. However, transparency around market governance structures **(HLP 18)** is often in short supply, with limited clarity around profit-sharing details and insufficient safeguards to ensure that a fair portion of benefits reach those directly involved in conservation efforts.

There is a need for transparency throughout the full credit cycle. Schemes must provide clear, publicly available information on project governance and implementation and clearly document who has ownership and accountability of biodiversity credits generated. Buyers purchasing biodiversity credits should be fully transparent on the intended use of credits, stating the purposes of buying and/or using the credit and how it relates to the buyer's strategies and policies on Nature, and providing evidence of adherence to the mitigation hierarchy.

The challenges to transparency are exacerbated in those areas where territorial risks exist. These can arise from uneven state presence, weak institutions and low levels of public accountability, which are conducive to environmental crimes. Considering local risk factors can mitigate threats to projects' governance and ecological robustness and ensure that communities, governments, agencies and suppliers maintain high integrity standards. As with other principles of good governance, a systematic approach to transparency needs to be incorporated across the system.

Guidance

Buyers:

- Should implement an assessment methodology to measure and disclose the environmental impact of businesses, banks and investments, ensuring transparency and accountability and providing data for the state of Nature.
- Should develop credible Nature targets and strategies that provide guidance on how they intend to deliver on their ambition and vision in tackling Nature loss in a way that aligns with the mitigation hierarchy. Organisations should seek to have these strategies verified by an independent third party to mitigate greenwashing and reputational risk.
- Should be transparent on the purpose of the credit purchase and use.

Suppliers:

- Should ensure that metrics are fully transparent and published in an easily accessible repository, including metadata and biodiversity datasets, respecting confidentiality and sensitivity (for example, protecting threatened species, personal and private information).

Enablers:

- **Governments** should maintain a publicly available list of approved methodologies and a registry of projects.
- **Standard bodies** should establish an accreditation system for buyers.

Case study

Implementation scale: Global. **Market actor:** Buyer

The **International Finance Corporation's Performance Standards** (IFC, 2012) provide guidance on how clients can identify risks and impacts. They are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including disclosure obligations in relation to project-level activities. Performance Standard 6 demonstrates how financial institutions can drive demand for biodiversity conservation and potentially biodiversity credits through their lending practices and mandates the application of the mitigation hierarchy (avoid, minimise, restore, compensate) for managing biodiversity risks.

Case study

Implementation scale: National. **Implementation location:** USA.
Market actor: Enabler

An example of where steps have been taken to ensure financial transparency is the **Commodity Futures Trading Commission**. As part of their trader accreditation, firms and individuals involved in trading commodity futures, options and other derivatives are required to be registered. The registration process, conducted by the National Futures Association under the Commodity Futures Trading Commission's supervision, ensures that market actors meet specific standards of financial integrity and transparency.

Case study

Implementation scale: Global. **Market actor:** Enabler

Ocean-based biodiversity certification provides certification for marine biodiversity projects. The certification system seeks to ensure that projects meet strict ecological, social and financial criteria. It explains that by integrating rigorous verification processes, it supports transparency, accountability and trust in the market, reducing the risk of greenwashing.

Accountability

Accountability is another aspect of the good governance of biodiversity credit systems. It enables all parties to be held to account for their actions, decisions and claims relating to biodiversity credits, and ensures that all those involved are meeting their obligations.

Data sovereignty **(HLP 19)** is crucial in good market governance as it establishes clear rights and responsibilities for data creators and users. Data accountability is a prerequisite for ethical business practices, particularly in relation to IPs and LCs, who must be involved in the co-creation of biodiversity credit markets. To support this, IPs and LCs' right to access to relevant data must be recognised. IAPB notes that digital sequence information on genetic resources is being discussed by parties under the Convention on Biological Diversity and anticipates this will provide useful additional guidance to market actors in relation to data sovereignty.

A further barrier to accountability is the failure by organisations to set Nature-positive institutional targets that are aligned with the goals set out in the GBF **(HLP 20)**, instead choosing to prioritise short-term financial gains over long-term environmental sustainability and business resilience. As IAPB's Demand Working Group has emphasised, to close the corporate accountability gap on Nature, businesses should transform their business models and contribute to halting and reversing impacts on Nature, by divesting from harmful activities and redirecting financial flows towards innovative solutions that promote the restoration, maintenance and sustainable use of Nature.

Corporates' disclosure of their framework-aligned approaches can help drive wider sectoral change and build market integrity.

Finally, IAPB is not looking at trading of credits **(HLP 21)** in the near term. To the extent it is happening there needs to be accountability, with safeguards in place to govern trade among market actors, prevent double counting and ensure transparency, including by compiling all information into a publicly available registry.

Guidance

Buyers:

- Should conduct TNFD and Science Based Targets Network-aligned Nature risk assessments to identify where Nature-related risks, opportunities, impacts and dependencies are located in relation to both their operations and supply chains.
- Should link biodiversity credit purchases to Nature risks and opportunities arising from impact and dependency assessments, Nature strategies, and targets to create coherence across market guidance and best practices.

Suppliers:

- Should implement goal-driven and objective-based projects, aligned to existing and emerging disclosures, targets, and scientific standards and frameworks, particularly TNFD, the Science Based Targets Network, the EU Corporate Sustainability Reporting Directive, and the GBF's targets for 2030 and 2050 Goals.
- Should ensure projects support the data sovereignty of Indigenous Peoples. Projects should ensure that Indigenous Peoples have access to any data collected on Indigenous lands. This includes data pertaining to Indigenous Peoples' ways of life, knowledge systems, customs or lands, waters, seas, and territories.

Enablers:

- **Governments** should introduce mandatory reporting of Nature-related impacts and dependencies on Nature, aligning with Target 15 of the GBF, as well as TNFD.
- **Governments** should align national and sub-national biodiversity policies and goals (National Biodiversity Strategy and Action Plans and National Biodiversity Finance Plans, among others) with the targets of the GBF to build an enabling environment for project financing. This could include policy drivers such as compliance schemes or other mandatory requirements for investment in Nature conservation, restoration or sustainable management activities.
- **Governments** should ensure that perverse incentives, such as speculative land investments, arising from policies are avoided and minimised.
- **Standards bodies** should ensure that available information is compliant with recognised standards such as the FAIR (findable, accessible, interoperable and reusable) principles and IP and LC relevant CARE (collective benefit, authority to control, responsibility and ethics) principles for biodiversity data.

Case study

Implementation scale: National. **Implementation location:** Colombia (and being considered for adoption in other countries). **Market actor:** Supplier

The **Savimbo Biodiversity Methodology** (Savimbo, no date) was developed with input from leaders of 18 Indigenous communities and hundreds of small farmers in the Colombian Amazon with the aim of placing methods and processes developed by IPs and LCs at the heart of emerging biodiversity credit markets. The approach uses distributed ledger technology, creating an immutable ledger that records every transaction and action in the conservation process in order to ensure tamper-proof data accessible to all stakeholders.

Case study

Implementation scale: Global. **Market actor:** Buyer

TNFD (TNFD, 2023a) has developed a comprehensive framework for managing and reporting Nature-related risks, opportunities, impacts and dependencies. TNFD has established a core set of indicators and metrics for Nature-related dependencies, impacts, risks and opportunities, providing organisations with reportable measures of their dependencies, risks and impacts on biodiversity. Frameworks like this are making it easier for organisations to align their activities with global Nature goals and to develop Nature-positive strategies including investments such as biodiversity credits.

Pilot projects

As biodiversity is a complex subject, with particular emphasis on the importance of locality and the interactions between Nature, climate and social dynamics, there cannot be a one-size-fits-all solution to the design of high integrity biodiversity credits. Project design and implementation require many considerations. These include adapting to local needs, accounting for the challenges of ecosystem diversity, involving a range of actors and understanding the variety of credit types and use cases, as well as the opportunities and constraints that each entail.

IAPB is keen to showcase a suite of pilot projects that gives stakeholders useful examples of the state of development of different markets, the ongoing challenges facing market actors, and solutions designed to address them. Some of these pilots are highlighted below and the full list is in the Annex.[10] Several are developing biodiversity credits already, while others are undertaking projects that can provide insights and lessons for the development of biodiversity credits.

A wide range of entities are delivering conservation and restoration of biodiversity worldwide – from Conservation NGOs (Wildlife Conservation Society in Mozambique, Terrasos in Colombia, Fauna & Flora in South Africa and Noé in Republic of Congo) to private corporations (EDF in France and ENGIE in the United Arab Emirates). Many of these projects also rely on support from development banks (KfW, AFD and Inter-American Development Bank), which are integral in providing technical assistance including on governance.

Some companies, such as L'OCCITANE en Provence undertaking shea butter production in Burkina Faso, Illycaffè investing to reduce the risks of the coffee supply chain in Brazil and promoting actions for the adaptation of coffee cultivation to climate change, or Kering supporting sustainable cashmere production in Mongolia, are using insetting approaches to address biodiversity impact and dependencies which in turn is offering them insights on the potential for biodiversity credit projects.

A central aspect of project integrity is equity and inclusion in respect of IPs and LCs. Some projects do this by integrating IP and LC perspectives into their design and delivery. Others co-design the projects with communities (IP and LC-founded Savimbo, ECOTRUST with its Gender Action Learning System protocol or Fundación Cataruben). Some, like AWE for Nature Foundation, have adopted innovative approaches to land management, offering a response to emerging land grabbing risks.

10 Any errors here or in the Annex are IAPB's and not of the organisations that have been profiled.

It is important to stress that projects aiming to issue biodiversity credits can cover all types of ecosystems, both terrestrial and marine. This can include forests (Reforest'Action regenerating the forests of China's Ghizhou region), savanna (EarthAcre Inc. in the Maasai Mara's ecosystem), agricultural land (Amarenco in Europe), woodland (CDC Biodiversité), as well as coastal and marine ecosystems (Conservation International's restoration of a coral site in the Philippines or the Association of Coastal Ecosystem Services restoring seagrass meadows in Kenya). It should be noted that the marine environment presents specific complexities in terms of measurement of outcomes and ensuring that tenure and resource rights are respected.

The opportunity to deliver biodiversity outcomes has also been highlighted as a lever to support an increase in quality and integrity of the carbon credit markets through the development of credits with co-benefits. Examples include WWF France's work restoring temperate forest by delivering biodiversity credits with carbon co-benefits, or Generali adding biodiversity outcomes to a carbon compensation project of reforestation of degraded farmland area. Examples of projects that bundle or stack credits, such as CreditNature on the Scottish Isle of Aran and Mikro-Tek Inc. in the Canadian boreal forest, are on the rise. There are several challenges facing this type of credit, not least surrounding the need for robust measurement, avoiding double counting and showing clear additionality.

This broad selection of projects worldwide aims to highlight the diversity of potential projects and credits, with their own specificities and solutions across a diversity of ecosystems and use cases. It does not pretend to cover the whole range of possible ecosystems or financial options. By working with these projects, IAPB aims to support the scaling of equitable and impactful markets for biodiversity credits through a community of practice. These pilots can be a critical part of enabling the Framework to iterate in the months and years ahead and benefit from the essential lessons learned from these projects.

Acronyms

This is a list of acronyms which are used frequently in the Framework.

Acronym	Description
BCA	Biodiversity Credit Alliance
CARE	Collective benefit, authority to control, responsibility and ethics
CBD	Convention on Biological Diversity
DLT	Distributed ledger technology
FAIR	Findable, accessible, interoperable and reusable
FPIC	Free, prior and informed consent
GBF	Kunming-Montreal Global Biodiversity Framework
HLP	High-Level Principle
IAPB	International Advisory Panel on Biodiversity Credits
IFC	International Finance Corporation
IPs and LCs	Indigenous Peoples and local communities
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature
KfW	German state-owned investment and development bank
NBSAP	National Biodiversity Strategies and Action Plans
NGO	Non-governmental organisation
SBTN	Science Based Targets Network
TNFD	Taskforce on Nature-related Financial Disclosures
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
VCMI	Voluntary Carbon Markets Integrity Initiative
WEF	World Economic Forum
WWF	World Wide Fund for Nature

Glossary

Term	Definition
Additionality	Additionality means a requirement that credits can only be assigned to biodiversity outcomes that are attributable to the project intervention, and would not have otherwise happened (BCA, 2024a). IAPB considers that the project design and implementation, especially measurement, verification and assurance of commitments, actions and outcomes, must be proportionate and appropriate to the circumstances and objectives of specific projects. Therefore, demonstration of additionality must include ecological additionality – whether mitigating threats of degradation or working towards restoration – and could also include social or financial additionality aspects, for example to specifically recognise and value stewardship activities. In the case of maintenance activities by Indigenous Peoples and local communities, it should not be assumed that they will provide those maintenance activities in perpetuity and without finance – the absence of finance may be deemed to be a threat of degradation.
Assurance	An engagement in which a practitioner seeks sufficient appropriate evidence to express a conclusion designed to enhance the degree of confidence of the intended users other than the responsible party about the subject matter information provided (ISAE 3000, 2020).
Avoided loss	The prevention of decline in biodiversity resulting from project interventions such as preservation or land designation indicated by the prevention of changed structure, composition and function of the target ecosystem or species populations, or prevention of increase in threat measures. Avoided loss projects will typically have demonstrable, imminent threats to biodiversity (BCA, 2024a).
Biodiversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems (CBD Article 2, 1992).
Biodiversity certificate	A validated proof that management actions (inputs) are implemented, or biodiversity benefits (outputs) are achieved.

Term	Definition
Biodiversity credit	A biodiversity credit is a certificate that represents a measured and evidence-based unit of positive biodiversity outcome that is durable and additional to what would have otherwise occurred (BCA, 2024a).
Compensation	IAPB is referring to compensation as a use case for biodiversity credits that provides measurable conservation and restoration outcomes, resulting from actions that compensate for significant, unavoidable residual negative impacts on biodiversity from development activities. In this context, the use of biodiversity credits must follow the mitigation hierarchy to first avoid, then minimise, restore, and only then compensate as a last resort. Compensation must be local-to-local and like-for-like.
Conservation	An action taken to promote the persistence of ecosystems and biodiversity (TNFD, 2023d).
Distributed ledger technology (DLT), including blockchain	Distributed ledger technology (with blockchain being a type of DLT) enables data capture, analysis and auditability, allowing credits to be represented as universally unique data entities in a digital end-to-end environment. DLT makes it possible to verify a credit's provenance and track its exchange without the need for centralised intermediaries (WEF, 2023).
Indigenous Peoples	The UN Declaration on the Rights of Indigenous Peoples does not include a definition of Indigenous Peoples, and self-identification as Indigenous is considered a fundamental criterion. Nevertheless, it can be helpful to consider Indigenous Peoples as inheritors and practitioners of unique cultures and ways of relating to people and the environment, and have retained social, cultural, economic and political characteristics that are distinct from those of the dominant societies in which they live. Adapted from the United Nations Department of Environmental and Social Affairs (no date).
Local communities	Non-Indigenous communities with historical linkages to places and livelihoods characterised by long-term relationships with the natural environment, often over generations (IPBES, 2020).

Term	Definition
Maintenance	The maintenance of intact biodiversity through project interventions such as implementation of conservation management plans, effective recognition and protection of Indigenous rights and customary uses aligned with conservation objectives, conservation designations and sustainable financing of conservation, indicated by the prevention of changed structure, composition and function of the target ecosystem or species populations, or prevention of increase in threat. In maintenance projects, biodiversity will be threatened by medium- or long-term threats (BCA, 2024a).
Markets	IAPB is referring to markets in the context of a project financing market, rather than a liquid financial instrument traded on an exchange. That means that each project will be funded based on its specific characteristics and conservation outcomes.
Market integrity	Participants enjoy equal access to markets, practices are fair, and high standards of governance are met. Adapted from World Federation of Exchanges (2019).
Mitigation hierarchy	A hierarchy of actions to mitigate negative impacts on biodiversity: avoidance of biodiversity loss in development plans, minimisation in project design, mitigation to restore damaged habitats, and offsets to restore or create them to compensate for residual loss (TNC, 2021).
Nature	The natural world with an emphasis on its living components. Within the context of western science, it includes categories such as biodiversity, ecosystems (both structure and functioning), evolution, the biosphere, humankind's shared evolutionary heritage, and biocultural diversity. Within the context of other knowledge systems, it includes categories such as Mother Earth and systems of life, and it is often viewed as inextricably linked to humans, not as a separate entity. Adapted from IPBES (2019).
Nature market	A system composed of transactions between separate buyers and sellers, in which the transacted goods or services specifically reflect a stock of ecosystem assets or a flow of ecosystem services from terrestrial or aquatic ecosystems (Taskforce in Nature Markets, 2022).
Net gain delivery	A type of measure taken to not only offset residual losses of, or permanent damage to, ecological features, but further ensure percentage-based gains (TNC, 2021).

Term	Definition
No net loss	The outcome of biodiversity losses offset by commensurate gains (TNC, 2021).
Offsetting	IAPB uses the term compensation instead of offsetting (see the definition of compensation).
Payments for ecosystem services	Payments for ecosystem services occur when the beneficiaries or users of an ecosystem service make payments to the providers of that service. In practice, this may take the form of a series of payments in return for receiving a flow of benefits or ecosystem services. The basic idea is that whoever provides a service should be paid for doing so (CIFOR, 2014).
Restoration	Any intentional activities that initiate or accelerate the recovery of an ecosystem from a degraded state (IPBES, 2019).
Stacked, stapled or bundled credits	‘Stacked’ refers to credits sold separately from a single project. ‘Stapled’ refers to credits sold together from different projects. ‘Bundled’ refers to credits sold together from a single project.
Stewardship	The activity or job of protecting and being responsible for something (IPBES, 2016).

References

Biodiversity Credit Alliance (BCA) (2024a), Definition of a Biodiversity Credit. Issue paper No. 3.
Available at: **www.biodiversitycreditalliance.org/wp-content/uploads/2024/05/Definition-of-a-Biodiversity-Credit-Rev-220524.pdf**

BCA (2024b), Review Mechanisms for Supply-side Quality and Integrity in the Biodiversity Credit Market. Issue Paper No. 2.
Available at: **www.biodiversitycreditalliance.org/wp-content/uploads/2024/05/Review_Mechanisms_for_Supply-side_Quality_and_Integrity_in_the_Biodiversity_Credit_Market_Rev-260424_v2.pdf**

Carbone 4 (2024) [forthcoming], Biodiversity certificates: Risks and opportunities.

CDC Biodiversité (2024), Bridging finance and nature: the role of BIA-GBS and GBSFI in measuring biodiversity-related financial risks.
Available at: **www.cdc-biodiversite.fr/publications/2024-dossier50_bridging-finance-and-nature-the-role-of-the-global-biodiversity-score**

Center for International Forestry Research (2014), Payments for Ecosystem Services (PES). A practical guide to assessing the feasibility of PES projects.
Available at: **www.cifor-icraf.org/publications/pdf_files/Books/BFripp1401.pdf**

Conservation International (2024), Nature Positive: Conservation International's Position on Nature Credit Markets.
Available at: **www.conservation.org/projects/nature-credit-markets**

Convention on Biological Diversity Article 2 (CBD) (1992), in: Convention on Biological Diversity. Text and Annexes.
Available at: **www.cbd.int/doc/legal/cbd-en.pdf**

Dasgupta, P. (2021), The Economics of Biodiversity: The Dasgupta Review. London, HM Treasury.
Available at: **www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review**

Department for Environment, Food and Rural Affairs (Defra) (2024), Understanding biodiversity net gain. Guidance. UK Government.
Available at: **www.gov.uk/guidance/understanding-biodiversity-net-gain**

Environment Bank (no date), Biodiversity (BNG) Units.
Available at: **www.environmentbank.com/biodiversity-units**

European Commission (2024), High-Level Expert Group on scaling up sustainable finance in low- and middle-income countries. Final recommendations.

European Union Taxonomy (2020), Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.
Available at: **www.data.europa.eu/eli/reg/2020/852/oj**

Financial Stability Board (2024), Stocktake on Nature-related Risks: Supervisory and regulatory approaches and perspectives on financial risk.
Available at: **www.fsb.org/uploads/P180724.pdf**

Forest Stewardship Council (FSC) (2022), Policy for Association. Version 3.
Available at: **www.connect.fsc.org/document-centre/documents/resource/368**

Forest Trends (2023), The legal structure for biodiversity benefits-sharing already exists in Brazil. Here's how it can serve communities.
Available at: **www.forest-trends.org/blog/the-legal-structure-for-biodiversity-benefits-sharing-already-exists-in-brazil-heres-how-it-can-serve-communities/**

Global Environment Facility and International Institute for Environment and Development, (2023), Innovative Finance for Nature and People: Opportunities and Challenges for Biodiversity-Positive Carbon Credits and Nature Certificates.
Available at: **www.thegef.org/sites/default/files/documents/2023-03/GEF_IIED_Innovative_Finance_Nature_People_EN_Summary_2023_03.pdf**

Gonzalez, A., Vihervaara, P., Balvanera, P. et al. (2023), A global biodiversity observing system to unite monitoring and guide action. Nature Ecology & Evolution.
Available at: **www.nature.com/articles/s41559-023-02171-0**

Government of Canada (2024), At a glance – Evaluation of Environment and Climate Change Canada's Indigenous Guardians Initiative.
Available at: **www.canada.ca/en/environment-climate-change/corporate/transparency/priorities-management/evaluations/evaluation-eccc-indigenous-guardians-initiative-2024/at-a-glance.html**

Integrity Council for the Voluntary Carbon Market (2024), Core Carbon Principles Assessment Framework and Procedure.
Available at: **www.icvcm.org/assessment-framework**

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (2016), The assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on pollinators, pollination and food production.
Available at: **www.zenodo.org/records/3402857**

IPBES (2019), Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.
Available at: **www.ipbes.net/global-assessment**

IPBES (2022), Foundations of the nature futures framework.
Extracted from IPBES/9/14. Annex VI to decision IPBES-9/1.
Available at: **www.ipbes.net/document-library-catalogue/foundations-nature-futures-framework**

International Advisory Panel on Biodiversity Credits (IAPB) (2024a),
Call for Views Analysis Report.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024b), Consultation on Archetypes Analysis Report.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024c), Governance and stewardship of biodiversity credit markets.
Governance and Stewardship Working Group report.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024d), Landscape analysis of biodiversity credits projects:
Results from the Supply Working Group project developers' survey.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024e), Recommendations for high integrity supply of biodiversity credits.
Supply Working Group report.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024f), Recommendations for high integrity demand for biodiversity credits.
Demand Working Group report.
Available at: **www.iapbiocredits.org/resources**

IAPB (2024g), Design criteria for high integrity measurement of biodiversity credits.
Measurement Working Group report.
Available at: **www.iapbiocredits.org/resources**

International Finance Corporation (IFC) (2012), IFC Performance Standards
on Environmental and Social Sustainability.
Available at: **www.ifc.org/content/dam/ifc/doc/mgrt/ifc-performance-standards.pdf**

International Standard on Assurance Engagements 3000 (ISAE) (2020), International standard on assurance engagement (UK) 3000 (July 2020): Assurance engagements other than audits or reviews of historical financial information.
Available at: **www.media.frc.org.uk/documents/IASE_UK_3000_Jul_2020.pdf**

International Union for Conservation of Nature (IUCN) (2023),
Measuring Nature-Positive approach consultation.
Available at: **www.iucn.org/sites/default/files/2023-11/iucn-nature-positive-contribution-v1.0.pdf**

Milner-Gulland et al. (2021), Four steps for the Earth: mainstreaming the post-2020 global biodiversity framework. One Earth.
Available at: **www.cell.com/one-earth/fulltext/S2590-3322(20)30657-6**

Mirova (2024), Environmental Market Instruments. Position Paper.
Available at: **www.mirova.com/sites/default/files/2024-03/environmental-market-instruments-position-paper.pdf**

NatureFinance (2024a), G20 High-Level Principles on Bioeconomy.
A roadmap for action.

NatureFinance (2024b), Investing in Africa: Investing in Nature. Summary brochure.
Available at: **www.naturefinance.net/resources-tools/investing-in-africa-investing-in-nature**

NatureFinance and Carbone 4 (2023), Harnessing Biodiversity Credits for People and Planet.
Available at: **www.naturefinance.net/wp-content/uploads/2023/06/HarnessingBiodiversityCreditsForPeopleAndPlanet.pdf**

Organisation for Economic Co-operation and Development (2024), Scaling Up Biodiversity-Positive Incentives. Workshop proceedings.
Available at: **www.oecd.org/en/topics/sub-issues/finance-and-investment-for-biodiversity.html**

Organization for Biodiversity Certificates (2022), Towards biodiversity certificates: proposal for a methodological framework.
Available at: **www.obiocert.com/wp-content/uploads/2022/11/Towards_biodiversity_certificates_proposal_for_a_methodological_framework.pdf**

Plan Vivo (2023), PV Nature Methodology.
Available at: **www.planvivo.org/Handlers/Download.ashx?IDMF=edb7e81a-6a08-44b5-88bf-2a7b4e547d80**

Plan Vivo, Good Carbon, Blue Marine Foundation (2024), Credit Where Credit's Due: identifying the core principles for a high integrity biodiversity credit market.
Available at: **www.planvivo.org/Handlers/Download.ashx?IDMF=ff7562f8-4b7d-4a53-813f-82a0e2d9a5e3**

Pollination (2023), State of Voluntary Biodiversity Credit Markets: a global review of biodiversity credit schemes.
Available at: **www.pollinationgroup.com/wp-content/uploads/2023/10/Global-Review-of-Biodiversity-Credit-Schemes-Pollination-October-2023.pdf**

PwC (2023), Managing nature risks: From understanding to action.
Available at: **www.pwc.com/gx/en/strategy-and-business/content/sbpwc-2023-04-19-Managing-nature-risks-v2.pdf**

Savimbo (no date), Introduction to the biodiversity credit methodology.
Available at: **www.isbm.savimbo.com/introduction**

Science Based Targets Network (SBTN) (2024), Take action.
Setting science-based targets for nature: a step-by-step guide.
Available at: **www.sciencebasedtargetsnetwork.org/companies/take-action**

Taskforce in Nature Markets (2022), Nature in an era of crises.
Available at: **www.naturefinance.net/wp-content/uploads/2022/09/TNMNatureInAnEraOfCrises.pdf**

Taskforce on Nature-related Financial Disclosures (TNFD) (2023a),
Recommendations of the Taskforce on Nature-related Financial Disclosures.
Available at: **www.tnfd.global/recommendations-of-the-tnfd**

TNFD (2023b), Sector Guidance: Additional Guidance for Financial Institutions,
Version 1.0.
Available at: **www.tnfd.global/wp-content/uploads/2023/08/Guidance_for_Financial_Institutions_v1.pdf?v=1695215983**

TNFD (2023c), Guidance on the identification and assessment of nature-related dependencies, impacts, risks and opportunities: The LEAP approach, Version 1.0.
Available at: **www.tnfd.global/publication/additional-guidance-on-assessment-of-nature-related-issues-the-leap-approach**

TNFD (2023d), Glossary of Key Terms.
Available at: **www.tnfd.global/wp-content/uploads/2023/09/Glossary_of_key_terms_v1.pdf?v=1695138274**

The Biodiversity Consultancy (no date), Net positive and the mitigation hierarchy.
Available at: **www.thebiodiversityconsultancy.com/services/site-level-advisory/mitigation-hierarchy**

The Biodiversity Futures Initiative (no date), Approach:
Peer Review Underpins the Scientific Process.
Available at: **www.biodiversityfuturesinitiative.com/approach**

The Nature Conservancy (2021), Biodiversity Net Gain in England:
Developing Effective Market Mechanisms. A Discussion Paper.
Available at: **www.nature.org/content/dam/tnc/nature/en/documents/TNC_BiodiversityNetGain_England.pdf**

The Network for Greening the Financial System (2024),
Conceptual Framework for nature-related financial risks.
Available at: **www.ngfs.net/sites/default/files/medias/documents/ngfs_conceptual-framework-on-nature-related-risks.pdf**

United Nations Department of Environmental and Social Affairs (no date),
Indigenous Peoples.
Available at: **www.social.desa.un.org/issues/indigenous-peoples**

United Nations Environment Programme (UNEP) (2023), State of Finance for Nature 2023: The Big Nature Turnaround – Repurposing $7 Trillion to Combat Nature Loss. Available at: **www.wedocs.unep.org/20.500.11822/44278**

United Nations Environment Programme Finance Initiative (UNEP FI) (2023), Principles for Responsible Banking: Guidance for banks. Available at: **www.unepfi.org/wordpress/wp-content/uploads/2023/11/PRB-Nature-Target-Setting-Guidance_2023.pdf**

United Nations Framework Convention on Climate Change (UNFCCC) (2024), User Manual for National Focal Points of the NMA Platform. Version 1.2. Available at: **www.unfccc.int/documents/638334**

Verra (no date), Climate, community and biodiversity standards. Program overview. Available at: **www.verra.org/programs/ccbs**

Verra (2023), SD VISta Nature Framework. Version 0.1. Available at: **www.verra.org/wp-content/uploads/2023/09/SD-VISta-Nature-Framework-v0.1-for-Public-Consultation.pdf**

Verra (2024), Nature Framework 2023 Public Consultation: Summary of Comments and Verra Responses. Available at: **www.verra.org/wp-content/uploads/2024/05/Summary-of-Comments-and-Verra-Responses-Nature-Framework-v0.1-Public-Consultation-.pdf**

Voluntary Carbon Markets Integrity Initiative (2024), Claims code of practice. Building integrity in voluntary carbon markets. Available at: **www.vcmintegrity.org/wp-content/uploads/2024/08/VCMI-Claims-Code-v1.10.pdf**

World Bank (2021), The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways. Washington, DC. Available at: **www.openknowledge.worldbank.org/entities/publication/fcc11682-c752-51c4-a59f-0ab5cd40dc6f**

World Economic Forum (WEF) (2023), Biodiversity Credits: Demand Analysis and Market Outlook. Geneva, Switzerland. 45 pages. Available at: **www3.weforum.org/docs/WEF_2023_Biodiversity_Credits_Demand_Analysis_and_Market_Outlook.pdf**

WEF (2024a), Global Risks Report 2024. WEF, Geneva, Switzerland. Available at: **www.weforum.org/publications/global-risks-report-2024**

WEF (2024b), Biodiversity Credits: Demystifying Metrics for Nature Credits. WEF, Geneva, Switzerland. Available at: **www3.weforum.org/docs/WEF_Biodiversity_Credits_2024.pdf**

WEF (2024c), Biodiversity Credits: A guide to Identify High-Integrity Projects. WEF, Geneva, Switzerland.
Available at: **www3.weforum.org/docs/WEF_Biodiversity_Credits_A_Guide_to_Identify_High-Integrity_Projects_2024.pdf**

World Federation of Exchanges (2019), The World Federation of Exchanges 2018 Full Year Market Highlights.
Available at: **www.focus.world-exchanges.org/storage/app/media/uploaded-files/WFE%202018%20FY%20Market%20Highlights%20FINAL%20PDF%20VERSION%2012.02.19.pdf**

World Wide Fund for Nature (WWF) (2022), Living Planet Report 2022. Building a nature-positive society. Almond, R.E.A., Grooten, M., Juffe Bignoli, D. and Petersen, T. (Eds). WWF, Gland, Switzerland. 60 pages.
Available at: **www.wwf.org.uk/sites/default/files/2023-05/WWF-Living-Planet-Report-2022.pdf**

Available at: **www.openknowledge.worldbank.org/entities/publication/fcc11682-c752-51c4-a59f-0ab5cd40dc6f**

World Economic Forum (WEF) (2023), Biodiversity Credits: Demand Analysis and Market Outlook. Geneva, Switzerland. 45 pages.
Available at: **www3.weforum.org/docs/WEF_2023_Biodiversity_Credits_Demand_Analysis_and_Market_Outlook.pdf**

WEF (2024a), Global Risks Report 2024. WEF, Geneva, Switzerland.
Available at: **www.weforum.org/publications/global-risks-report-2024**

WEF (2024b), Biodiversity Credits: Demystifying Metrics for Nature Credits. WEF, Geneva, Switzerland.
Available at: **www3.weforum.org/docs/WEF_Biodiversity_Credits_2024.pdf**

WEF (2024c), Biodiversity Credits: A guide to Identify High-Integrity Projects. WEF, Geneva, Switzerland.
Available at: **www3.weforum.org/docs/WEF_Biodiversity_Credits_A_Guide_to_Identify_High-Integrity_Projects_2024.pdf**

World Federation of Exchanges (2019), The World Federation of Exchanges 2018 Full Year Market Highlights.
Available at: **www.focus.world-exchanges.org/storage/app/media/uploaded-files/WFE%202018%20FY%20Market%20Highlights%20FINAL%20PDF%20VERSION%2012.02.19.pdf**

World Wide Fund for Nature (WWF) (2022), Living Planet Report 2022. Building a nature-positive society. Almond, R.E.A., Grooten, M., Juffe Bignoli, D. and Petersen, T. (Eds). WWF, Gland, Switzerland. 60 pages.
Available at: **www.wwf.org.uk/sites/default/files/2023-05/WWF-Living-Planet-Report-2022.pdf**

Annex: Biodiversity credit pilot projects

IAPB is showcasing a suite of pilot projects, alongside its Framework, which provide a tangible demonstration of the current state of the market and its development prospects (Table 2).

IAPB's role is not to provide project finance or to act as an accelerator facility for projects. But it is keen to be a platform for exchanges of best practices among actors, as well as to see its principles put to the test on the ground.

Several are developing biodiversity credits already, while others are undertaking projects that can provide insights and lessons for the development of biodiversity credits that can support and inspire the ongoing development of biodiversity credits and credit markets.

Table 2: IAPB's pilot projects

Organisation	Project
AFD / KFW / WWF	Wildlife credit
Amarenco	Echo Regen
Association for Coastal Ecosystem Services	Vanga Seagrass project
AWE for Nature Foundation	Chewore South
CDC Biodiversité Project	Natural sites of compensation, restoration and renaturation (sites naturels de compensation de restauration et de renaturation – SNCRR) – Sainte-Maxime
Conservation International	Tubbataha Reefs Natural Park
	Shark Bay restoration
Consortium Ministry of Ecology, Seine Normandy water agency, CINEA-Green Assist (EU)	Experimentation of biodiversity credits in wetlands
CreditNature	Drumadoon rewilding
EarthAcre Inc.	Ol Kinyei
Earthly	Voluntary biodiversity credits
Ecotrust	Bugoma-Budongo Corridor Restoration Program
EDF and La Belle Forêt	Chambord Forest adaptation
ENGIE	Blue Carbon Project in Abu Dhabi
Fauna & Flora, Grootbos Foundation	Fynbos conservation in the Cape Floristic Region

Country	Ecosystem / biome
Namibia	Threatened key wildlife (elephant, rhino, lion)
Europe	Restoring degraded land's ecosystem (land, former quarries), transitioning to agroecology
Kenya	Seagrass
Zimbabwe	Lowland dry savannah
France	Woodland/ forestry site
Philippines	Reef and marine
Australia	Seagrass
France	Wetland
Isle of Arran, United Kingdom	Celtic rainforest/temperate broadleaf and mixed forests
Kenya	Savannah grasslands
United Kingdom	Degraded agricultural land will be transformed into native broadleaf woodland, species-rich grassland meadow and floodplain grazing marsh.
Uganda	Albertine Rift Tropical High Forests
France	Moors, ponds, wetlands, meadows, temperate forest, wild fauna
United Arab Emirates	Mangroves
South Africa	Fynbos biome

Organisation	Project
Fundación Cataruben	Destination Paraver
Generali – Gruppo Leone Alto	GENERALI FUTURE RADICI
Illycaffè	Illycaffè supply chain
Kering	Regenerative cashmere in Mongolia
L'OCCITANE en Provence	Resist program
	Agroecology and Fair Trade
Mikro-Tek	Missinaibi Boreal Biodiversity and Carbon Project
Noé	Binder Lere Complex of Protected Areas (Zah-Soo National Park)
Reforest'Action	Guizhou
Restore	Parque Nacional Sierra del Divisor Conservation Program
Savimbo	Villagarzón
	Chandia Na'en
Terrasos	Alto Río San Juan Habitat Bank – Yerrecuy
Wadappt	Wadappt Nature Certificate Platform
WCS	Blue Future
WWF France	Nature Impact

Country	Ecosystem / biome
Colombia	Tropical dry forest
Italy	Implementing temperate boreal (Mediterranean region) forests and woodlands on former intensive land use systems
Brazil	Transitioning to regenerative agroecology, increasing diversity of species
Mongolia	Various types of rangelands, including desert steppes, forest steppes, and mountainous areas.
Burkina Faso	Sustainable shea trees harvesting
France	Agricultural lands (lavender)
Canada	Canadian Boreal Forest
Republic of Congo	Forest, savannah, wetland, agriculture
China	Reforesting land degraded through intensive farming
Peru	Rainforest
Colombia	Tropical Andean biodiversity hotspot, bush dog
Ecuador	
Colombia	Tropical forest
Africa	Desert, forest, grassland, savannah, thicket, wildlife
Mozambique	Savannah, coastal woodland, dry coastal forest, coral rag thicket, seashore vegetation, tropical zone estuary, mangrove, coral reefs, seagrass
France	Temperate forests

Image credits

Front cover

Background: Catching fish in nipa palm jungle, Vietnam / Pham Hung
Tropical fish and turtle / vlad61
Woman from Hamer tribe carrying her baby, Ethiopia, Africa / hadynyah
Harvest of grapes, France / tomazl

Pages

Page 6: Aerial view of the black volcanic beach in Iceland / Eloi_Omella
Page 11: African woman from Maasai tribe collecting water, Kenya / Bartosz Hadyniak
Page 17: Masai warrior at sunset, Tanzania / jocrebbin
Page 19, top: Blue Footed Boobies Perching On A Rock / EyeEm Mobile GmbH
Page 19, bottom: Red squirrel / Clayton images
Page 25: Mangrove trees along the turquoise green water in the stream, USA / bAlllIAd
Page 26: Close-up of tender care from mother and calf humpback whales in clear blue ocean / Philip Thurston
Page 27: Pink Flamingoes in Mexico / Jonathan Ross
Page 41: Giant clam on coral reef, Mauritius / Zocha_K
Page 47: Old woman carrying basket in Himalayas / hadynyah
Page 51: Mediterranean fish underwater with sea grass / Damocean
Page 59: Farmer Feeding the Sheep, UK / SolStock
Page 60: Women picking tea in the mountains / Rawpixel
Page 62: African nomad man / yoh4nn
Page 73: Mycena haematopus fungi, Woodland UK / Rixipix
Page 76: Sunrise and dramatic clouds over Lavender Field / valio84sl
Page 82: Atacama Desert in Chile / Igor Alecsander
Page 90: Aerial view of mangrove forest in Gambia / mariusz_prusaczyk
Page 91: Baby koala on a tree, Australia / undefined undefined

Back cover

Background: Catching fish in nipa palm jungle, Vietnam / Pham Hung
Wassú tribe / FG Trade
Green tree growing in desert, Africa / CCeliaPhoto
Bank Vole on branch with berries / Adrian Coleman
Red-eyed Tree Frog facing camera, Costa Rica / pilesasmiles