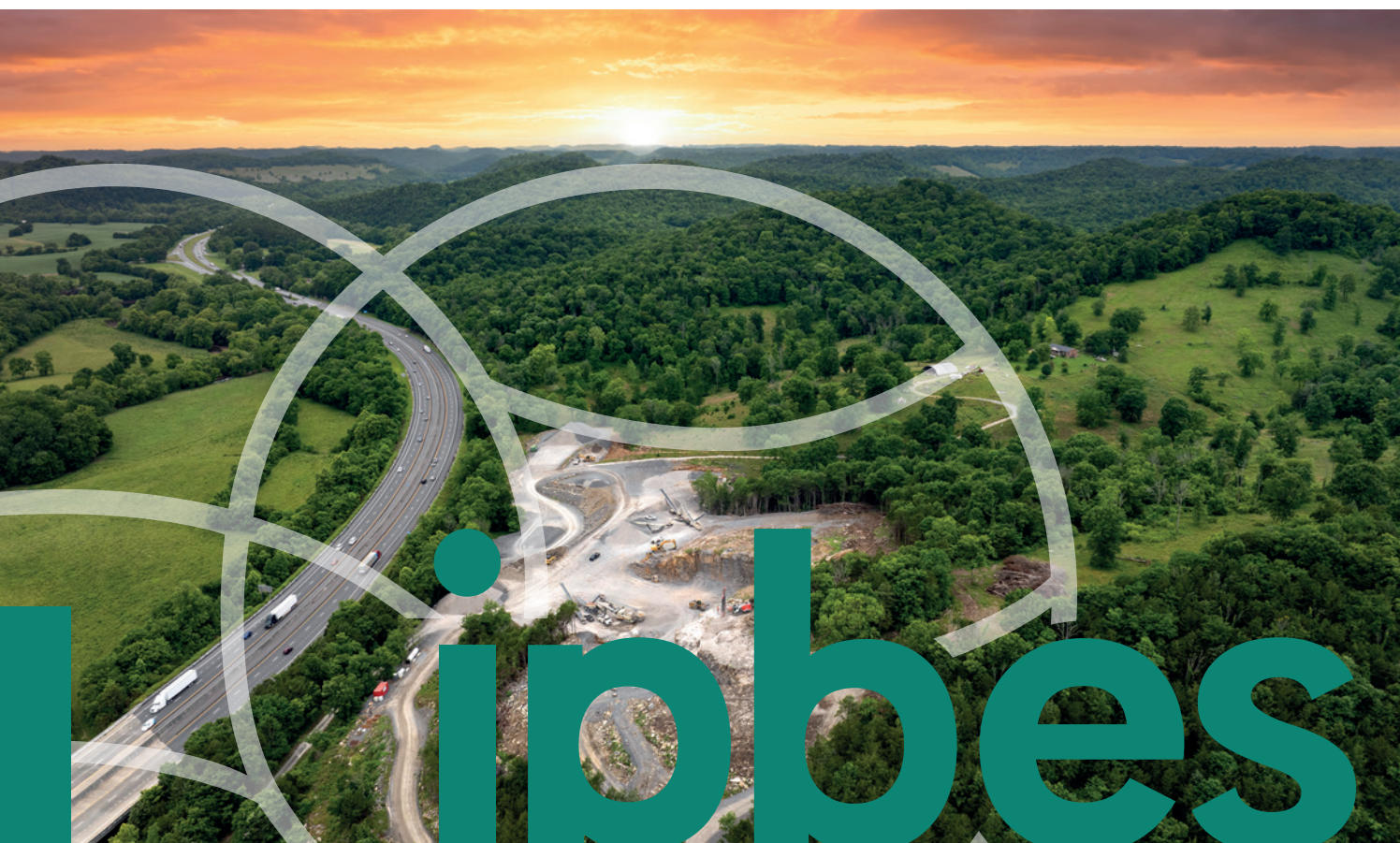




The methodological assessment report on

THE IMPACT AND DEPENDENCE OF BUSINESS ON BIODIVERSITY AND NATURE'S CONTRIBUTIONS TO PEOPLE

SUMMARY FOR POLICYMAKERS



SUMMARY FOR POLICYMAKERS OF THE METHODOLOGICAL ASSESSMENT OF THE IMPACT AND DEPENDENCE OF BUSINESS ON BIODIVERSITY AND NATURE'S CONTRIBUTIONS TO PEOPLE (BUSINESS AND BIODIVERSITY ASSESSMENT)

Copyright © 2026, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

Reproduction

This publication may be reproduced in whole or in part and in any form for educational or non-profit services without special permission from the copyright holder, provided acknowledgement of the source is made. The IPBES secretariat would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or any other commercial purpose whatsoever without prior permission in writing from the IPBES secretariat. Applications for such permission, with a statement of the purpose and extent of the reproduction, should be addressed to the IPBES secretariat. The use of information from this publication concerning proprietary products for publicity or advertising is not permitted.

Traceable accounts

The chapter references enclosed in curly brackets (e.g. {2.3.1, 2.3.1.2, 2.3.1.3}) are traceable accounts and refer to sections of the chapters of this IPBES Assessment. A traceable account is a guide to the section in the chapters that contains the evidence supporting a given message and reflecting the evaluation of the type, amount, quality and consistency of evidence and the degree of agreement for that statement or key finding.

Disclaimer

The designations employed and the presentation of material on the maps used in the assessment do not imply the expression of any opinion whatsoever on the part of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. These maps have been prepared or used for the sole purpose of facilitating the assessment of the broad biogeographical areas represented therein.

For further information, please contact

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
IPBES Secretariat, UN Campus
Platz der Vereinten Nationen 1, 53113 Bonn, Germany
Phone: +49 (0) 228 815 0570
Email: mea-ipbes-secretariat@un.org
Website: www.ipbes.net

Photo credits

Cover: iStock | Bilanol ■ iStock | bluebeat76 ■ iStock | tongpatong ■ iStock | Nigel Harris ■ iStock | Trung Pham
P. 3: IISD | Anastasia Rodopoulou
P. 4-5: UNEP (*I. Andersen*) ■ FAO/G. Carotenuto (*Dr Qu Dongyu*) ■ CBD Secretariat (*A. Schomaker*) ■ UNESCO/C. Alix (*K. El-Enany*) ■ UNDP (*A. De Croo*)
P. 7: IISD | Anastasia Rodopoulou
P. 11-12: iStock | Shea Stadium
P. 24-25: iStock | Fred Froese
P. 46-47: iStock | R.M. Nunes

Technical support unit

Orlando Vargas Rayo (Head)
Olena Tarasova-Krasiieva
Alina Vera Paz

Graphic design

Maro Haas, art direction and layout
Yuka Estrada, SPM figures and tables

SUGGESTED CITATION

IPBES (2026). *Summary for Policymakers of the Methodological Assessment Report on the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People*. Jones, M., Polasky, S., Rueda, X., Brooks, S., Carter Ingram, J., Egoh, B.N., von Hase, A., Kohsaka, R., Kulak, M., Leach, K., Loyola, R., Mandle, L., Rodriguez Osuna, V., Schaafsma, M. and Sonter, L.J. (eds.). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.15369060>.

MEMBERS OF THE IPBES MANAGEMENT COMMITTEE WHO PROVIDED GUIDANCE FOR THE PRODUCTION OF THIS ASSESSMENT

Germán Andrade, Christopher Gordon, Erik Grigoryan, Floyd Homer

OVERALL REVIEW EDITORS

Olga Barbosa, Edson Gandiwa, Sasha Gennet, Rachel Haug Fossbakk, Habiba Iliyasu Atta, Angelica F. Resende, Jonty Rowllins, Michel Trommetter, Michael Vardon

This report in the form of a PDF can be viewed and downloaded at www.ipbes.net

The IPBES Business and Biodiversity Assessment was made possible thanks to many generous contributions, including non-earmarked contributions to the IPBES trust fund from Governments (Australia, Austria, Belgium, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Estonia, European Union, Finland, France, Germany, Ireland, Japan, Latvia, Luxembourg, Malta, Monaco, Kingdom of the Netherlands, New Zealand, Norway, Portugal, Republic of Korea, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America); and in-kind contributions targeted at the assessment. All donors are listed on the IPBES website: www.ipbes.net/donors

The methodological assessment report on

THE IMPACT AND DEPENDENCE OF BUSINESS ON BIODIVERSITY AND NATURE'S CONTRIBUTIONS TO PEOPLE

SUMMARY FOR POLICYMAKERS

AUTHORS:¹

Matt Jones (Co-Chair, United Kingdom of Great Britain and Northern Ireland), Stephen Polasky (Co-Chair, United States of America), Ximena Rueda (Co-Chair, Colombia).

Sharon Brooks (United Kingdom of Great Britain and Northern Ireland), Jane Carter Ingram (United States of America), Benis Nchine Egoh (Cameroon), Amrei von Hase (South Africa), Ryo Kohsaka (Japan), Michal Kulak (Poland/Switzerland), Katie Leach (United Kingdom of Great Britain and Northern Ireland), Rafael Loyola (Brazil), Lisa Mandle (United States of America), Vanesa Rodriguez Osuna (Plurinational State of Bolivia/Germany), Marije Schaafsma (Kingdom of the Netherlands), Laura Jane Sonter (Australia).

1. Authors are listed with, in parentheses, their country or countries of citizenship, separated by a comma when they have more than one; and, following a slash, their country of affiliation, if different from that or those of their citizenship, or their organization, if they belong to an international organization. The countries and organizations having nominated the experts are listed on the IPBES website.

FOREWORD

We stand at a pivotal moment for business and nature! Businesses and financial institutions – alongside governments and civil society – have both the opportunity and the responsibility to lead the transition

toward a more just and sustainable global economy. For too long, economic growth has come at the expense of biodiversity, eroding the very foundations of human wellbeing, financial stability and long-term prosperity. This trajectory presents not only an environmental crisis, but a profound systemic risk to economies and societies worldwide. Yet, current conditions continue to reinforce business-as-usual approaches, falling short of the transformative change urgently needed to halt and reverse biodiversity loss.

The Report on the Methodological Assessment of the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People (Business and Biodiversity Assessment) marks a critical turning point. As the first assessment of its kind, this landmark report will help businesses and other actors recognize the central value of biodiversity in the long-term sustainability of businesses and society. It is a vital contribution to global efforts to achieve the goals of the Kunming-Montreal Global Biodiversity Framework (KMGBF), the Sustainable Development Goals, and the Paris Agreement on Climate Change. While offering specific insights into the implementation of the KMGBF Target 15 – which calls on businesses to measure, report and reduce their impacts on biodiversity – the report ultimately serves society as a whole. The assessment acknowledges the critical role businesses have played in reducing poverty, improving health and human wellbeing worldwide. These contributions have, however, come at a huge cost to biodiversity, which has declined at unprecedented levels in the last fifty years.

Developed by nearly 80 authors and 43 contributing authors from 35 countries, this assessment demonstrates

IPBES is an independent intergovernmental body comprising more than 150 member Governments. Established by Governments in 2012, IPBES provides policymakers with objective scientific assessments about the state of knowledge regarding nature and the contributions it provides to people, as well as options for actions to protect and sustainably use these vital natural assets.

The Business and Biodiversity Assessment was initiated by the IPBES Plenary in decision IPBES-9/1 and is based on the scoping report set out in annex I to the same decision. The assessment was produced in accordance with the procedures for the preparation of Platform deliverables set out in annex I to decision IPBES-3/3.

The Business and Biodiversity Assessment was considered by the Plenary at its twelfth session (IPBES 12, Manchester, United Kingdom of Great Britain and Northern Ireland, 2026). The Plenary approved its summary for policymakers and accepted its chapters. All material can be found here: <https://www.ipbes.net/business-impact>



that all companies, regardless of sector, scale or context, are connected to biodiversity, whether directly or indirectly through complex value chains. Drawing on more than 5,000 references, it synthesizes a vast body of knowledge, methods and data to guide decision-making across portfolios, corporations, value chains and operations. It provides a strong foundation for aligning what is good for business with what is good for nature. Crucially, it also highlights the importance of engaging not only with scientific knowledge, but with Indigenous and local knowledge to improve how impacts and dependencies are understood and managed.

The assessment highlights that aligning profitability with biodiversity will require fundamental shifts. It identifies more than 100 concrete actions for governments, financial actors, businesses, Indigenous Peoples and local communities, and civil society. These actions recognize diverse national and sectoral contexts, while calling for immediate efforts to recognize dependencies, reduce impacts and reshape the systems that govern economic activity.

Achieving global goals for biodiversity and people demands coordinated action across policy, legal and regulatory frameworks; economic and financial systems; social values and cultural norms; technology and data; and capacity and knowledge. We already possess the methods, knowledge and data needed to act. What is required now is collective will and coordinated effort to create the conditions that incentivize and enable businesses to become active agents of positive change.

As Chair and Executive Secretary of IPBES, we extend our sincere gratitude to all the experts who have contributed to this landmark assessment. Their work is a compelling call for collaboration and accelerated action. We wish to express our particular appreciation to the co-chairs, Matt Jones (United Kingdom), Stephen Polasky (United States of America) and Ximena Rueda (Colombia) for their outstanding leadership. We also acknowledge the dedication of the coordinating lead

authors, lead authors, review editors, fellows, contributing authors and external reviewers. Their collective efforts have ensured the timely delivery of a rigorous and forward-looking assessment which we are confident will be a valuable resource for a wide range of actors who are driving positive action for biodiversity in both the private and public sectors.

We also acknowledge the Alexander von Humboldt Biological Resources Research Institute in Colombia and UNEP-WCMC in the United Kingdom, which jointly hosted the Technical Support Unit for the assessment, including the invaluable contributions of Orlando Vargas Rayo, Olena Tarasova-Krasiieva and Alina Vera Paz, whose commitment underpinned the successful completion of this report. We also extend our sincere appreciation to the members of the Multidisciplinary Expert Panel and the Bureau, the IPBES secretariat, and all governments and institutions that have provided financial and in-kind support for this work.

This assessment provides a powerful foundation for action. It demonstrates that businesses and financial actors, together with governments and society, can drive systemic change needed to reduce negative impacts on biodiversity, enhance positive contributions, manage nature-related risks, and advance sustainable production and consumption. It also underscores that global progress must translate into meaningful change at the local level.

We are confident that the Business and Biodiversity Assessment will help catalyze the transformative changes needed to secure a resilient, just and sustainable future for both people and nature.

David Obura

Chair of IPBES

Luthando Dziba

Executive Secretary of IPBES

STATEMENTS FROM KEY PARTNERS



“Nature remains one of the most undervalued foundations of our global economy, despite underpinning food systems, supply chains, and long-term prosperity. At a time when some may question the role of science, IPBES continues to lead the way and provide independent, authoritative evidence – because science-based decision-making is not optional, it is essential.

The first-ever Business and Biodiversity Assessment reinforces this role. It will give decision-makers clear evidence of how businesses depend on nature, how they impact it, and what this means for risk, resilience, and long-term value. By identifying risks early, we can help prevent escalating costs - higher food prices, rising insurance premiums, and economic instability - affecting families and communities worldwide.

Time is not on our side, but this Assessment offers a clear pathway on how we can align economic decision-making with environmental reality, delivering lasting benefits for people and for the planet.”

Inger Andersen
Executive Director
United Nations Environment
Programme (UNEP)



“Businesses across the agrifood systems both depend on and significantly impact biodiversity.

To build a resilient future, we need to transform these systems to ensure the Four Betters: better production, better nutrition, a better environment, and a better life, leaving no one behind.

By effectively assessing and managing their relationship with nature, businesses can strengthen their resilience, drive innovation, and establish themselves as leaders in the global economy.

Every business along the value chain has a role in advancing sustainable practices that support biodiversity.

Key actions include scaling up investments in innovative, biodiversity-friendly technologies across production, processing, distribution and consumption, as well as implementing robust systems to monitor and report the impacts of their business operations. As a UN Collaborative Partner of IPBES, FAO supports agrifood businesses in enhancing their biodiversity performance, meeting recognized standards, and conducting risk-based due diligence.

This new IPBES assessment offers a timely analysis of such measures, providing crucial data for decision-makers dedicated to building agrifood systems that are more efficient, more inclusive, more resilient and more sustainable.”

QU Dongyu
Director-General,
Food and Agriculture Organization of the
United Nations (FAO)



“The IPBES Business and Biodiversity Report is a crucial contribution to the implementation of the Kunming-Montreal Global Biodiversity Framework, particularly its Target 15, which is about businesses assessing and disclosing biodiversity-related risks and impacts. This is key not only to a better understanding of the centrality of biodiversity to value chains, but also to taking action to change business models, reduce negative and increase positive biodiversity impacts.

All businesses depend on nature. Some are very obviously exposed to risks stemming from resource depletion or environmental degradation; others may need to dig deeper to understand the breadth of their dependencies and impacts on biodiversity. Hidden risks can range from breaching regulatory frameworks to damaging the company's brand.

In any case, biodiversity is never a marginal issue. It lies at the crux of what makes companies thrive or flounder: value chain resilience.

In too many boardrooms and offices around the world, there is still a dearth of awareness of biodiversity protection as a business investment. And too often, public policy still incentivises behaviour that drives biodiversity loss.

Transformative change is both necessary and possible. With the right business mindset supported by the right incentives, thriving in harmony with nature is within reach.

Congratulations to IPBES on showing the way.”

Astrid Schomaker
Executive Secretary
Convention on Biological Diversity (CBD)



“Businesses are inseparable from the ecosystems they operate in: they both depend on them and profoundly impact them. As significant drivers of today’s planetary crises, businesses have contributed to climate change, biodiversity loss and cultural erosion. At the same time, they have a critical role to play in advancing more sustainable solutions, a role already reflected in a growing number of initiatives.

UNESCO’s World Network of Biosphere Reserves is a strong example. These sites serve as living laboratories where biodiversity conservation, resilient livelihoods, cultural diversity and human wellbeing can reinforce one another. Through this network, UNESCO contributes in a concrete way to the implementation of the Kunming–Montreal Global Biodiversity Framework, by promoting solutions rooted in places, communities and long-term balance between people and nature.

UNESCO is particularly proud to have contributed to this assessment by supporting the inclusion of Indigenous and local knowledge. Indigenous Peoples and local communities are often among the first to experience the impacts of unsustainable and extractive business practices, and frequently bear disproportionate social, cultural and ecological costs. At the same time, their knowledge, values and governance systems offer important insights into economic models that prioritize balance, reciprocity and long-term stewardship of nature. Recognizing and respecting these knowledge systems is a necessary condition for building sustainable, inclusive and effective responses to the biodiversity crisis worldwide.

In this context, UNESCO warmly welcomes this new IPBES assessment as an important contribution to advancing our shared understanding and collective action for biodiversity..



Khaled El-Enany

Director-General,
United Nations Educational,
Scientific and Cultural Organization (UNESCO)



“Biodiversity underpins every economy and every society. It generates jobs and income, regulates the climate, and sustains food, water, and health systems. Yet its very dependability hides the scale of our reliance on its continued stability. Too often, biodiversity is an invisible and expendable asset on a balance sheet. That is changing. Awareness is now accelerating of the risks to development if biodiversity fails – and of the economic opportunities and future prosperity that emerge where it thrives.

This IPBES Business and Biodiversity Assessment makes a vital contribution to exposing and explaining how business, economies, and development ambitions depend on biodiversity. Through our Nature Pledge, the United Nations Development Programme (UNDP) works alongside countries and our many partners to align economic progress with the protection and restoration of Nature. Our initiatives such as the Biodiversity Finance Initiative (BIOFIN) and our work supporting the Taskforce on Nature-related Financial Disclosures reveal growing investor and policymaker demand for actionable information. UNDP therefore strongly welcomes the assessment’s focus on advancing categorization, methodologies, standardization, and other dimensions essential to scaling the value and integration of biodiversity into decision-making.

Nature-positive business transformation – aligned with global biodiversity commitments and strengthened through collaboration with governments, local communities, and Indigenous Peoples – is a fast-track to resilient, inclusive, and sustainable development. This approach is now far from optional. It is essential to our collective future.”

Alexander De Croo

Administrator,
United Nations Development Programme
(UNDP)

Table of Contents

FOREWORD

page 2

STATEMENTS FROM KEY PARTNERS

page 4

ACKNOWLEDGEMENTS

page 6

PREFACE

page 8

SUMMARY FOR POLICYMAKERS

page 12

Key messages

Background messages:

page 26

A. Understanding the relationship between business and biodiversity

page 30

B. Options for action by businesses, including financial institutions and other financial actors, and Governments and other actors

page 38

C. Measuring businesses' impacts and dependencies on biodiversity and nature's contributions to people

page 48

APPENDIX

Communication of the degree of confidence

Actions to build an enabling environment that aligns what is good for businesses with what is good for biodiversity require governments, financial actors, business and financial institutions and other actors. As co-chairs of the IPBES Business and Biodiversity Assessment we would like to acknowledge and express our enormous gratitude to the many people, representing many of these actor groups, whose expertise and support have made this assessment possible.

The assessment addresses one of the defining challenges of our time: how business, finance, governments and society can better understand, manage and transform the relationships between businesses actions and biodiversity. It has brought together evidence from across disciplines, sectors and knowledge systems to examine how businesses depend on, impact and can contribute to the recovery of biodiversity and its contributions to people. Producing this major report would not have been possible without the hard work of 79 experts from across the globe, who provided their voluntary time and efforts to deliver this product with the conviction to contribute to a better future for all.

We are first and foremost grateful to the coordinating lead authors, fellows and review editors, who gave their time, knowledge and energy to this assessment. Furthermore, we are grateful to the contributing authors whose contributions were essential to enrich the contents of this assessment. Their commitment to scientific rigour, policy relevance and constructive collaboration has been central to the development of the report. We deeply appreciate the generosity with which experts from different disciplines, regions and professional backgrounds worked together to assess a complex and rapidly evolving field.

We would like to express our sincere appreciation to the Technical Support Unit and the institutions that supported the assessment process. The assessment would not have been possible without their professionalism and tireless work. We are particularly grateful to the Alexander von Humboldt Biological Resources Research Institute in Colombia and UNEP-WCMC in the United Kingdom, which jointly hosted the Technical Support Unit for the assessment. Their support, commitment and hospitality were instrumental in sustaining the coordination, collaboration and careful work required to deliver an assessment of this scale and complexity.

We are indebted to the IPBES secretariat, especially the Executive Secretary and the wider secretariat team, for their continued guidance, support and commitment throughout the assessment. We also thank the IPBES Bureau, the Multidisciplinary Expert Panel and the Management Committee for their strategic advice, oversight and support. Their guidance

ACKNOWLEDGEMENTS

helped ensure that the assessment remained firmly grounded in the IPBES mandate and responsive to the needs of governments and other users of the assessment.

We gratefully acknowledge the IPBES task forces and technical support units that contributed to the assessment, including those working on knowledge and data, Indigenous and local knowledge, capacity-building, policy tools and methodologies, and scenarios and models. Their support helped strengthen the assessment's treatment of data, evidence, knowledge systems, methodological approaches and policy relevance.

We are also grateful to the many representatives of Indigenous Peoples and local communities, business and financial sector actors, policymakers, civil society organizations and knowledge holders who contributed throughout the assessment process. Their contributions helped ensure that the assessment reflects the diversity of ways in which biodiversity is understood, valued, affected and managed across different contexts.

We extend our gratitude to the organizations that hosted our workshops, dialogues and other events during the assessment process, namely Senckenberg Biodiversity and Climate Research Centre, UNEP-WCMC and the Alexander von Humboldt Biological Resources Research Institute. The meetings they hosted were essential for building a shared understanding among authors, advancing the assessment and strengthening collaboration across regions and disciplines.

We sincerely thank the States members of IPBES and IPBES National Focal Points for their engagement in the development and approval of the assessment and its summary for policymakers. Their consideration of the findings of the



assessment has been essential to ensuring that the assessment is both scientifically credible and policy relevant. We also thank the Government of the United Kingdom of Great Britain and Northern Ireland that hosted the twelfth session of the IPBES Plenary, as well as the working group co-chairs, Floyd Homer (Trinidad and Tobago) and Eeva Primmer (Finland), who supported the successful consideration and approval of the summary for policymakers.

Finally, we would like to thank the families, friends and colleagues of everyone involved in this assessment. Producing an IPBES assessment requires a substantial commitment of time, energy and care. We are deeply grateful for the support, patience and encouragement that made this work possible.

The Business and Biodiversity Assessment is the result of a collective effort. We hope that it will help all actors become agents of positive change to create an enabling environment in which businesses contribute to a just and sustainable future for all.

Ximena Rueda Fajardo, Matt Jones and Stephen Polasky
Co-Chairs

WE ARE GRATEFUL TO THE FOLLOWING PEOPLE WHO CONTRIBUTED TO THE IPBES BUSINESS AND BIODIVERSITY ASSESSMENT:

The coordinating lead authors, lead authors and fellows:

Jane Carter Ingram, Vanesa Eliana Rodríguez Osuna, Benis Nchine Egoh, Marije Schaafsma, Lisa Mandle, Ryo Kohsaka, Michal Adam Kulak, Sharon Brooks, Amrei von Hase, Laura J. Sonter, Katie Leach, Rafael Loyola, Anouska Perram, Edgar Amistoso de Jesus, Elikana Kalumanga Ngallaba, Gabriella Teren, Indah Budiani, Jay P Shimshack, Lisen Schultz, Luis Inostroza, Hongxia Duan, Hristina Prodanova, Ivan Paspaldzhiev, Jacob Hochard, Louise Willemen, Sofía López Cubillos, Wooyeong Joo, Beatrice Irene Crona, Claudia Romero, Joseph Bull, Kishaylin Chetty, Mark Aidan Johnston, Nicholas Otienoh Oguce, Rajat Panwar, Bruna Fátiche Pavani, Clément Feger, Ederson Augusto Zanetti, Francesca Veronesi, Heera Lee, Mark van Oorschot, Stephan Pfister, Angelica F. Resende, Divya Narain, Felicia Permata Sari Lasmana, Hishmi Jamil Husain, Jacolette Adam, Marie-Hélène Enrici, Natalia Lutti Hummel Wicher, Pippa Howard, Steven Dickinson, Thao Fabregas, Anthony Chatwin, Caroline van Leenders, Evonne Yiu, Inonge Mukumbuta Guillemin, Mi Sun Park, Syed Mohazri Syed Hazari, Priya Priyadarshini, Raphael Anammasiya Ayambire, Niak Sian Koh, Tuija Lankia, Daniel Itzamna Avila Ortega, Sharon Chelangat, David Nemecek, Jacob Bedford, Tuan Nguyen, Klaudia Prodani, Gabriela Rabeschini

The review editors:

Olga Barbosa, Edson Gandiwa, Sasha Gennet, Rachel Haug Fossbakk, Habiba Ilyasu Atta, Angelica F. Resende, Jonty Rowllins, Michel Trommether, Michael Vardon

The management committee for the Business and Biodiversity Assessment:

Germán Andrade, Christopher Gordon, Erik Grigoryan, Floyd Homer

PREFACE

The Methodological Assessment of the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People (Business and Biodiversity Assessment)² comes at a time when urgent action is needed to halt and reverse biodiversity loss and when there is increasing recognition of the central role of businesses in creating transformative change for a just and sustainable future. Evidence shows that biodiversity and nature's contributions to people are declining across much of the globe.³ The Kunming-Montreal Global Biodiversity Framework sets out a commitment to a whole-of-government and whole-of-society approach to put biodiversity on a path to recovery for the benefit of people and the planet. Businesses⁴ have been key to driving the innovation and economic growth that have brought about rising standards of living, improved health outcomes, increased food security and reduced poverty, but these benefits have been unevenly distributed within and among countries.⁵ At the same time, unsustainable economic activity and a focus on growth as measured by gross domestic product have been drivers of the decline of biodiversity and nature's contributions to people and stand in the way of transformative change.⁶ Although it is a historically neglected phenomenon, awareness of biodiversity decline is now growing, as is the awareness of the increasing risks that further declines pose for society, the economy and businesses.

All businesses depend on and impact biodiversity and can act now on the basis of existing knowledge (Figure SPM.1). Improving the knowledge base would allow businesses to better measure and respond to their dependencies and

impacts. Biodiversity has multiple dimensions, from genes to species to ecosystems. Methods for analysing the impacts and dependencies of businesses on biodiversity exist, although tying specific business actions to biodiversity outcomes can be difficult. Different methods are appropriate for decision-making at different business levels, including the operations, value chain, corporate and portfolio levels. Information about impacts and dependencies can guide businesses and enable reporting, transparency, decision-making and actions to address risks and opportunities, which in turn can lead to improved outcomes for biodiversity and businesses. For businesses to play a central role in halting and reversing biodiversity loss, the conditions in which they operate need to be fundamentally changed to provide incentives for the conservation and sustainable use of biodiversity. The prevailing conditions affect businesses differently depending, for example, on their size, resources and influence. An enabling environment providing businesses with incentives for the conservation and sustainable use of biodiversity would need to include the following important dimensions: policy, legal and regulatory frameworks; economic and financial systems; social values, norms and culture; technology and data; and capacity and knowledge. Creating an effective enabling environment can help to closely align what is profitable for businesses with what is good for biodiversity and society. An enabling environment requires coordinated, collaborative action through a whole-of-government and whole-of-society approach.

This assessment reviews and critically evaluates approaches to the measurement of impacts and dependencies of businesses on biodiversity and discusses how such information can be used to improve outcomes for biodiversity and nature's contributions to people. The assessment also addresses the roles of multiple actors in creating an enabling environment. The primary audience includes Governments, businesses, and organizations in the financial system. In addition, the assessment is intended to benefit civil society and Indigenous Peoples and local communities.⁷ Businesses play a major role in delivering transformative change to implement global policy goals and frameworks, such as the goals and targets under the 2030 Agenda for Sustainable Development, the Convention on Biological Diversity, the Kunming-Montreal Global Biodiversity Framework, the United Nations Framework Convention on Climate Change and the Paris Agreement.

2. In this assessment, "business and biodiversity" refers to the interconnected relationships of businesses – both individually and collectively – with biodiversity and nature's contributions to people, on which they depend and have an impact.

3. IPBES (2019). *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Brondizio, E.S., Settele, J., Díaz, S., and Ngo, H.T. (eds). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.3831673>.

4. In this assessment, "businesses" refers to entities involved in the production, exchange and distribution of goods or services sold for currency, including for-profit businesses (companies and enterprises), state-owned enterprises, social enterprises and enterprises of Indigenous Peoples and local communities.

5. IPBES (2024). *Thematic Assessment Report on the Interlinkages among Biodiversity, Water, Food and Health of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Harrison, P.A., McElwee, P.D., and van Huysen, T.L. (eds.). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.13850054>.

6. IPBES (2024). *Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. O'Brien, K., Garibaldi, L., and Agrawal, A. (eds.). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.11382215>.

7. The term "Indigenous Peoples and local communities" is used in this assessment in accordance with the methodological guidance for recognizing and working with Indigenous and local knowledge in IPBES (version of 5 May 2022), available at <https://www.ipbes.net/modules-assessment-guide>.

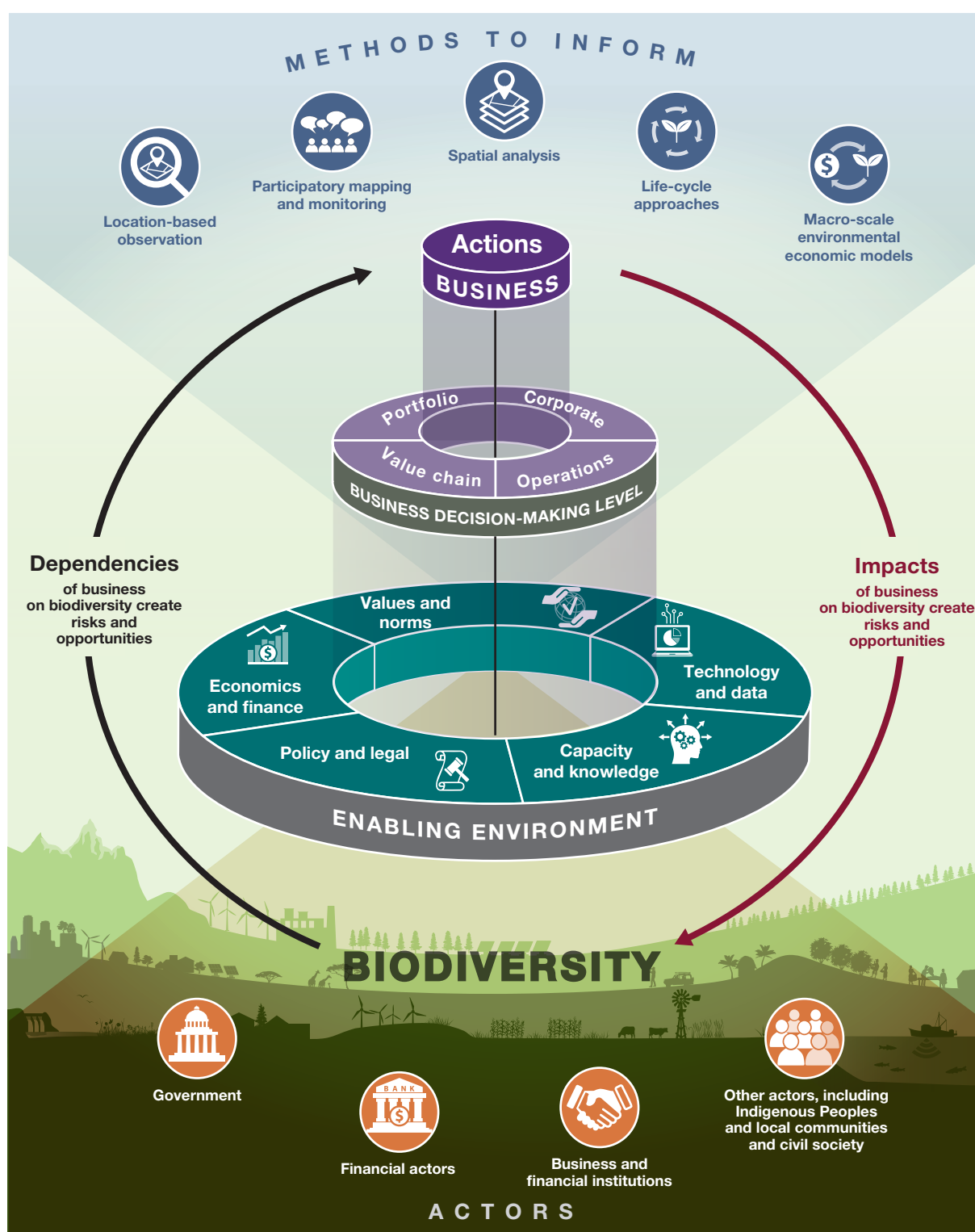


Figure SPM 1 **Overview of the business and biodiversity assessment. Businesses both depend on and impact biodiversity, creating risks and opportunities.**

Methods exist to measure business impacts and dependencies. These can be used to inform actions at all decision-making levels (i.e., portfolio, corporate, value chain and operations). Businesses, including financial institutions, working with Governments and financial and other actors, including civil society and Indigenous Peoples and local communities, can create an enabling environment. This can be achieved through changes in policy, legal and regulatory frameworks ("policy and legal"), economic and financial systems ("economics and finance"), social values, norms and culture ("values and norms"), technology and data, and capacity and knowledge (KM10).





KEY MESSAGES

KEY MESSAGES

KM1 All businesses depend on and impact biodiversity and can be agents of positive change {A1, A2, A4, A5, A6, A8, B7}.

Biodiversity and nature's contributions to people underpin the economy; all businesses therefore depend, directly or indirectly, on biodiversity. From 1820 to 2022, the global economy grew from \$1.18 trillion to \$130.11 trillion (measured in 2011 constant dollars). Businesses played a central role in that growth. However, the failure to account for nature and integrate its values into economic and financial systems has led to environmental degradation, unprecedented rates of biodiversity loss and associated changes in nature's contributions to people, including ecosystem services, with 14 out of 18 categories of contributions measured showing declines.⁸ The benefits to people and the decline in biodiversity have been unequally distributed among and within countries. The decline in biodiversity and nature's contributions to people has become a critical systemic risk to the economy, financial stability and human well-being, with implications for human rights. These systemic risks arising from biodiversity decline underscore the urgent need for transformative change. However, individual businesses often do not act to address their impacts and dependencies on biodiversity, or the resulting risks and opportunities, in part due to their lack of awareness. As businesses differ in size, sector, structure and relationship with biodiversity, informed action requires specific, context- and sector-dependent knowledge about impacts and dependencies. Because businesses are highly influential and can move quickly when motivated, informed and enabled to do so, they can be agents of positive change.

KM2 The current external conditions in which businesses operate are not always compatible with achieving a just and sustainable future and perpetuate systemic risks {A1, A2, A3, A5, B7, B13, C8}.

While some businesses take actions that are beneficial for biodiversity, inadequate or perverse incentives perpetuate business as usual and create barriers to businesses and others taking action that could halt and reverse biodiversity

loss and addressing its interconnection with climate change and pollution. The conditions under which different businesses operate vary and do not affect all sectors or businesses equally. Currently, the existing rewards and penalties are not adequate to drive sufficient action by businesses for the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits from the utilization of genetic resources and associated traditional knowledge. Businesses often fail to internalize the negative impacts of their actions on biodiversity. Many policies either encourage business activities that are harmful to biodiversity or prevent behaviour that is beneficial to it. For example, large subsidies are directed towards business activities that drive biodiversity loss, often with the support of lobbying by businesses and trade associations with vested interests. In 2023, global public and private financial flows with direct negative impacts on nature were estimated at \$7.3 trillion, including environmentally harmful public subsidies and private investment in high-impact sectors. Of that total, private finance accounted for around two thirds (\$4.9 trillion), while public spending on environmentally harmful subsidies made up the remaining \$2.4 trillion. By contrast, only around \$220 billion in public and private financial flows in 2023 were directed towards activities that contribute to the conservation and sustainable use of biodiversity. These figures highlight both the opportunity and the need to align financial flows to support biodiversity outcomes. Where compliance by businesses and enforcement efforts are lacking, the effective implementation of laws and regulations is undermined. Furthermore, because business disclosures are often voluntary and not widespread, businesses are usually not held accountable. Businesses often lack the data and knowledge to quantify their impacts and dependencies on biodiversity, and much of the relevant scientific literature is not written for a business audience. Lack of transparency across value chains, including with regard to the risks and opportunities related to the sustainability of resource extraction, use and reuse and waste management, is a further barrier to action. In addition, ecological processes such as ecosystem regeneration do not align with the time pressures on business decision-making and timescales for investment returns and reporting, which place heavy emphasis on quarterly earnings and annual reporting.

KM3 Collaboration, collective and individual actions are essential to creating an enabling environment in which businesses contribute to a just and sustainable future {B1, B2, B3, B4, B5, B6, B7, B8, B12}.

In an enabling environment, the conditions and incentives under which businesses operate allow them to align their interests with what is beneficial for biodiversity and society. Creating an enabling environment involves changes in policy, legal and regulatory frameworks; economic and financial systems; social values, norms and culture; technology

8. Global trends have shown declines over the past 50 years in virtually all regulating contributions (habitat; pollination and seed dispersal; air quality regulation; climate regulation; ocean acidification regulation; water quantity and flow regulation; water quality regulation; soil formation and protection; hazard regulation; pest regulation) and non-material contributions (learning and inspiration; experiences; identity; options), while some material contributions have shown increases (energy; food and feed; materials) (IPBES (2019). *Global Assessment Report on Biodiversity and Ecosystem Services*).

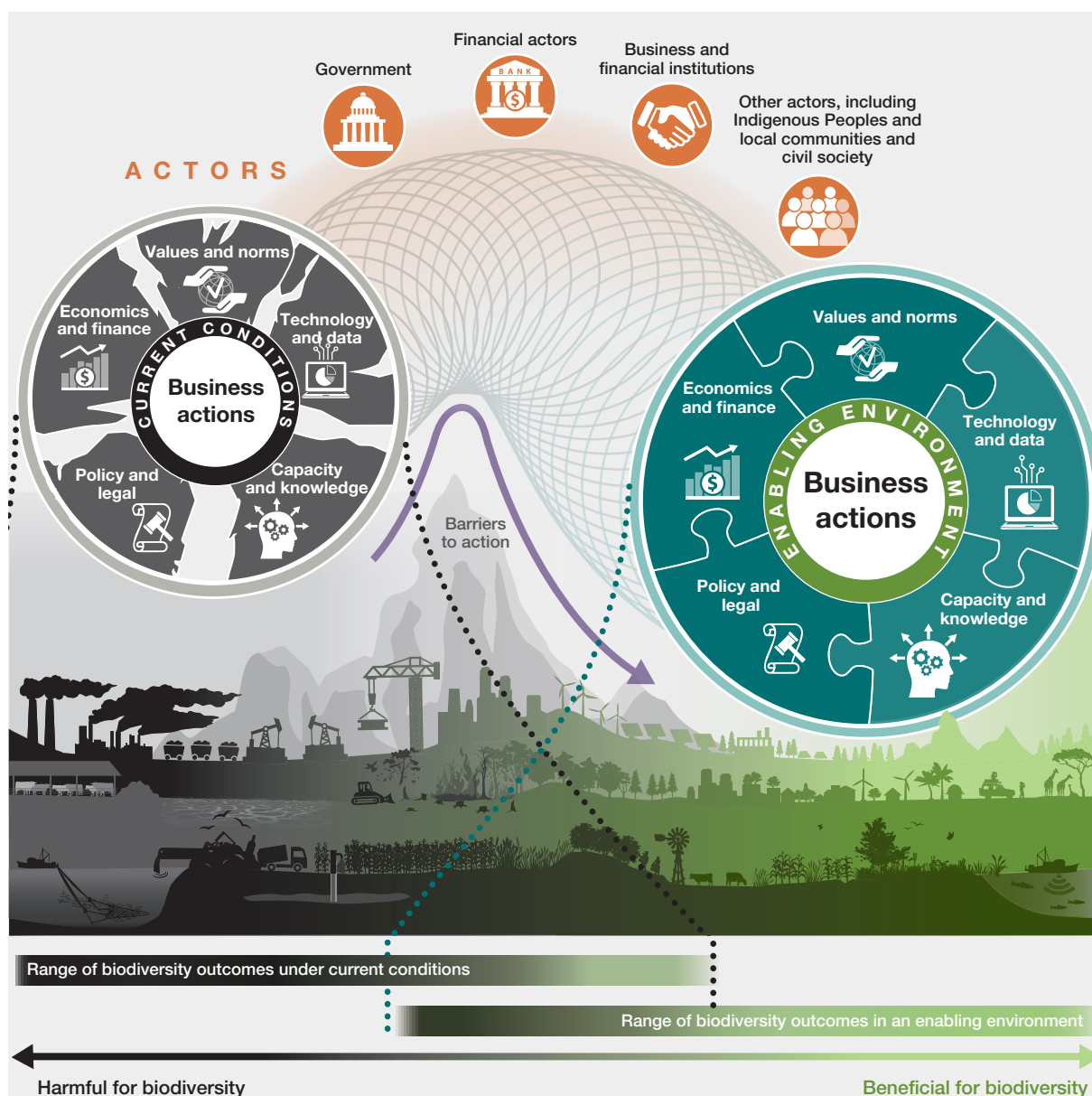


Figure SPM.2 Creating an enabling environment would align what is beneficial for businesses with what is beneficial for biodiversity and nature's contributions to people.

Business activities impacting biodiversity outcomes are influenced by policy, legal and regulatory frameworks; economic and financial systems; social values, norms and culture; technology and data; and capacity and knowledge. Current conditions often inhibit positive actions and even encourage negative actions by businesses, with harmful outcomes for biodiversity. Working collectively and individually, actors can overcome barriers to positive action.

and data; and capacity and knowledge (Figure SPM.2 and Table SPM.1). These changes can be achieved by accelerating collaboration and collective action at all levels by and among Governments, financial actors,⁹ other

actors,¹⁰ and businesses and financial institutions. Although collaboration is very important, individual actions can still contribute to creating an enabling environment.

9. In this assessment, financial institutions are those that provide financial goods and services to businesses and individuals in the form of loans, insurance and investments, and include, for example, banks, insurance companies, asset owners and managers, public development banks and investment funds. Financial actors include central banks, financial regulators and supervisors, and international financial institutions and standard-setting bodies which are financial institutions within

the broader financial system. The financial system encompasses both financial institutions and financial actors, as well as the legal frameworks, regulations and business practices that govern financial transactions.

10. In this assessment, "other actors" include civil society, Indigenous Peoples and local communities, consumers, non-governmental organizations, international organizations and academia.

Table SPM 1 Actions required to create an enabling environment.

Actions organized by Governments (A), financial actors (B), businesses and financial institutions (C), and other actors (D) in the five dimensions of the enabling environment. Different actors may have different starting points and priorities, and applicable actions may vary depending on evolving sectoral and national contexts, priorities and capacity, in accordance with national legislation.

(A) Governments

1. Policy and legal	2. Economics and finance	3. Values and norms	4. Technology and data	5. Capacity and knowledge
A.1.1 Set and enforce policy, legal and regulatory frameworks that incentivize or mandate actions by businesses and financial institutions for biodiversity conservation and sustainable use (B2) A.1.2 Ensure that policies are equitable, inclusive and aligned with international obligations and national capabilities (B2) A.1.3 Integrate biodiversity criteria into land/marine spatial planning, permit issuance, public procurement and corporate governance (B2) A.1.4 Develop and enforce environmental impact assessments, strategic environmental assessments and biodiversity strategies (B2) A.1.5 Engage in international and regional policy coordination to integrate biodiversity considerations into trade policies and value chains (B2) A.1.6 Incentivize or mandate corporate disclosure and reporting on biodiversity-related risks, dependencies and impacts (B2) A.1.7 Ensure regulatory coherence across government agencies, ministries and levels of governance, as well as across timelines, to mainstream biodiversity (B2) A.1.8 Implement controls on advertising to prevent greenwashing and combat misinformation (B2)	A.2.1 Align fiscal policies and financial flows with biodiversity and sustainability goals (B3) A.2.2 Through government agencies and central banks, coordinate with other financial actors to align incentives with positive biodiversity outcomes (B3) A.2.3 Design and implement economic and financial instruments that incentivize conservation and sustainable use of biodiversity (B3) A.2.4 Eliminate, phase out or reform harmful subsidies (B3) A.2.5 Support and enhance capacity in research, monitoring, education and nature-based solutions and/or ecosystem-based approaches (B3) A.2.6 Establish and support financial instruments such as green and blue bonds, conservation funds and public-private partnerships (B3) A.2.7 Collaborate with financial institutions and actors and with civil society to promote innovative and blended finance for biodiversity (B3)	A.3.1 Foster inclusive and equitable decision-making frameworks that respect free, prior and informed consent (B4) A.3.2 Promote ethical and sustainable business practices through the regulation of sustainability reporting, standards and incentives for sustainability adoption (B4) A.3.3 Support awareness and education initiatives that encourage cultural shifts towards sustainability, including sustainable consumption choices (B4) A.3.4 Promote the use of methods and metrics that allow the representation of nature's contributions to people, including ecosystem services (C1, C2)	A.4.1 Generate and provide robust biodiversity data using advanced technologies and other data-collection methods (B5) A.4.2 Develop and maintain decision-support systems (e.g., forecasting toolkits and national information systems) to help businesses assess their impacts and dependencies on biodiversity (B5) A.4.3 Facilitate biodiversity monitoring systems and provide regulatory incentives to encourage data-sharing frameworks that strengthen evidence-based decision-making (B5) A.4.4 Collaborate with businesses, financial institutions and civil society to develop business-relevant, trusted and streamlined data infrastructure and governance systems for biodiversity information (B5) A.4.5 Link biodiversity data to national economic accounts, through frameworks such as the United Nations System of Environmental-Economic Accounting, to integrate biodiversity considerations into policy and planning (B5) A.4.6 Promote the generation of practical and actionable information through standardized, transparent and interoperable approaches, including the need for common data standards and interoperability of data sets (B5)	A.5.1 Encourage national institutions and government agencies to coordinate intercultural education programmes to strengthen understanding between stakeholders (B3) A.5.2 Lead capacity-building efforts through education, training and public awareness campaigns focused on measuring business impacts and dependencies on biodiversity (B6) A.5.3 Support mutual learning and collaboration among actors, including businesses, financial institutions and civil society (B6) A.5.4 Foster research to address gaps in knowledge and its application at the intersection of business and biodiversity (B6) A.5.5 Develop sector-specific and landscape-/seascape-level training programmes to engage multiple sectors in biodiversity management (B6) A.5.6 Weave Indigenous Peoples' and local communities' knowledge into capacity-building frameworks, with due respect for their free, prior and informed consent, in accordance with national legislation (B6)

Table SPM 1

(A) Governments

1. Policy and legal	2. Economics and finance	3. Values and norms	4. Technology and data	5. Capacity and knowledge
A.1.9 Ensure fair and equitable benefit-sharing, particularly with Indigenous Peoples and local communities, in accordance with national legislation, e.g., for the use of genetic resources and traditional knowledge associated with genetic resources, and by facilitating appropriate access to genetic resources {B2}				

(B) Financial actors

1. Policy and legal	2. Economics and finance	3. Values and norms	4. Technology and data	5. Capacity and knowledge
B.1.1 Support consistent risk assessment frameworks for biodiversity-related financial decision-making {B2} B.1.2 Use regulatory and voluntary mechanisms to ensure that financial institutions account for biodiversity-related risks, dependencies and impacts {B3} B.1.3 Use biodiversity-related measures of impact and dependency to guide the allocation of loans, investments and insurance products {B3} B.1.4 Align fiscal policies and financial flows with biodiversity and sustainability goals {B3}	B.2.1 Drive systemic change in financial systems to minimize harm, address drivers of loss and align returns with positive outcomes for biodiversity and society {B3} B.2.2 Mobilize public and private capital towards biodiversity conservation, restoration and sustainable use projects {B3} B.2.3 Develop and use innovative financial instruments (e.g., green bonds, high-integrity biodiversity credits, conservation funds and sustainability-linked loans) to fund activities aligned with achieving global biodiversity goals {B3} B.2.4 For development banks and international financial institutions: provide technical assistance, conditional or concessional funding and promote blended finance approaches {B3}	B.3.1 Integrate societal and cultural values that promote the conservation and sustainable use of biodiversity into investment, lending and risk management decisions {B3} B.3.2 Promote responsible lending and investment practices aligned with social norms favouring biodiversity conservation {B3} B.3.3 Collaborate with civil society to increase transparency and accountability in financial activities and avoid financing harmful activities {B4} B.3.4 Engage in voluntary codes or standards that reflect societal expectations regarding ethical business conduct {B4}	B.4.1 Generate, use and leverage data and technology to support biodiversity-related impact assessments, risk analyses and financing strategies {B5} B.4.2 Develop and apply economic models, scenarios and decision-support tools that integrate biodiversity dependencies and impacts {B5} B.4.3 Participate in cross-sector data-sharing initiatives to align financial decision-making with biodiversity outcomes {B5} B.4.4 Use comparable biodiversity accounting methods to evaluate and disclose financial materiality and non-financial value creation, reflecting different ecological and regional contexts {B5} B.4.5 Support and invest in data infrastructure and digital tools that promote transparency and comparability in biodiversity-related reporting {B5}	B.5.1 Offer training programmes on biodiversity-related risk assessment and sustainable financing models {B6} B.5.2 Provide technical assistance, risk mitigation tools and fiscal instruments that build capacity for biodiversity-focused business strategies {B6} B.5.3 Foster collaboration between financial and non-financial actors to align capacity-building with biodiversity goals {B6} B.5.4 For development banks: lead by example by integrating biodiversity considerations into financial planning and investments {B6} B.5.5 For international financial institutions: support capacity-building through technical expertise, knowledge-sharing and regulatory guidance {B6}

Table SPM 1

(C) Businesses and financial institutions

 1. Policy and legal	 2. Economics and finance	 3. Values and norms	 4. Technology and data	 5. Capacity and knowledge
C.1.1 Engage responsibly in lobbying and advocacy to support ambitious biodiversity policies, avoiding and discouraging lobbying for unsustainable practices that drive biodiversity loss, such as harmful subsidies or incentives {B2} C.1.2 Publicly disclose lobbying activities to maintain transparency and trust {B2} C.1.3 Use established frameworks to report on biodiversity impacts, dependencies, risks and opportunities, including biodiversity accounting methods {B2} C.1.4 Develop and engage in voluntary codes or standards and biodiversity-related corporate governance practices {B2} C.1.5 Comply with biodiversity-related policies, laws and regulations {B2} C.1.6 Integrate biodiversity-related risks, opportunities, costs and benefits into business decision-making and financial planning {B9}	C.2.1 Participate in and benefit from economic instruments and financial incentives that promote biodiversity conservation {B3} C.2.2 Collaborate with Governments and financial institutions in innovative financing mechanisms such as green bonds or high-integrity biodiversity credits to fund activities aligned with achieving global biodiversity goals {B3} C.2.3 Advocate for inclusive policies and the dismantling of financial barriers, which is essential for promoting economic equity {B3} C.2.4 Embrace new economic models that align with the values of Indigenous Peoples and local communities {B3}	C.3.1 Advocate for and collaborate on coordinated biodiversity disclosure for consumer products {B4} C.3.2 Engage in partnerships with Indigenous Peoples and local communities, affected communities and young people to promote environmental stewardship and long-term sustainability {B4} C.3.3 Engage in responsible marketing and communication that supports sustainable consumption patterns {B4} C.3.4 Engage in voluntary codes or standards that reflect societal expectations regarding ethical business conduct {B4} C.3.5 Align business operations and strategies with social values, norms and culture, emphasizing sustainability, equity and inclusivity {B4} C.3.6 Ensure respect for Indigenous Peoples and local communities and for their respective rights in accordance with national legislation and the principle of free, prior and informed consent, and establish mechanisms for the participation of Indigenous Peoples and local communities in decision-making {B4} C.3.7 Where relevant, align business practices and processes with the concept of benefit-sharing and with benefit-sharing mechanisms {B9}	C.4.1 Adopt corporate data disclosure and transparency standards that capture dependencies and impacts on nature {B2} C.4.2 Generate, use and share biodiversity data to inform decision-making and risk management {B5} C.4.3 Drive innovation and leverage new technologies (e.g., bio-based products, monitoring tools and artificial intelligence-driven analyses) {B5} C.4.4 Collaborate with Governments, financial institutions and civil society to develop data governance systems and infrastructure to enable responsible data-sharing {B5} C.4.5 Engage with Indigenous Peoples and local communities in data collection and use processes, with due respect for free, prior and informed consent, in accordance with national legislation {B5, B9}	C.5.1 Build capacity by investing in education, research, training and knowledge exchange on biodiversity, including through industry associations {B6} C.5.2 Participate in and support training and capacity-building initiatives led by Governments, financial institutions and civil society {B6} C.5.3 Educate consumers on biodiversity-focused strategies informed by knowledge on biodiversity impacts to support sustainable choices {B6} C.5.4 Involve Indigenous Peoples and local communities in training and decision-making processes to enhance intercultural competencies {B6} C.5.5 Partner with academia and civil society to co-develop and implement training programmes and promote awareness with regard to biodiversity {B6}

Table SPM 1

(D) Other actors, including Indigenous Peoples and local communities, consumers, non-governmental organizations, international organizations and academia

1. Policy and legal	2. Economics and finance	3. Values and norms	4. Technology and data	5. Capacity and knowledge
D.1.1 Influence policy, legal and regulatory environments through advocacy, responsible and transparent lobbying, and participation in decision-making and electoral processes {B2} D.1.2 Promote equitable and inclusive policy design that respects rights, livelihoods and international obligations {B2} D.1.3 Engage in monitoring progress and holding Governments and businesses accountable for biodiversity-related policies and actions {B4}	D.2.1 Advocate for, monitor and hold businesses to account for the fair and equitable sharing of benefits from the utilization of genetic resources {B3, B4} D.2.2 Engage in partnerships and public-private initiatives to co-design and implement biodiversity-related financial instruments {B3} D.2.3 Participate in community-based finance or decentralized structures supporting conservation and sustainable use {B3}	D.3.1 Foster shifts in societal values and consumer choices and demand through education, awareness and advocacy campaigns promoting sustainable lifestyles and consumption {B4} D.3.2 Promote transparency, accountability and responsible advocacy {B4} D.3.3 Engage in voluntary disclosure and reporting frameworks to demonstrate alignment with biodiversity goals {B2, B4} D.3.4 Facilitate collaboration and partnerships among stakeholders to integrate social and environmental priorities {B4} D.3.5 Provide insights to a range of actors to encourage responsible business and financial practices to incorporate traditional ecological knowledge and relational values of nature {B4} D.3.6 Advocate for the recognition of rights and free, prior and informed consent in business and policy processes {B4} D.3.7 Advocate to overcome unequal power structures and ensure fair participation in business and decision-making activities {B4}	D.4.1 Lead and participate in biodiversity monitoring, participatory mapping, and reporting to enhance transparency and local empowerment {B5} D.4.2 Leverage technology for biodiversity monitoring, environmental impact assessment and legal advocacy {B5} D.4.3 Co-develop technological tools and open data repositories with different actors to improve access to biodiversity information {B5} D.4.4 Use campaigns and collaborations to promote responsible data use, combat misinformation and raise awareness of biodiversity issues {B5} D.4.5 Contribute Indigenous and local knowledge to biodiversity data systems, ensuring cultural and ecological relevance, and applying free, prior and informed consent, in accordance with national legislation {B4} D.4.6 Develop community-owned databases that safeguard traditional knowledge and respect intellectual property rights {B5} D.4.7 Advocate for equal access to technology and internet infrastructure to support participation in biodiversity monitoring and decision-making {B5} D.4.8 Collect data on the ground through bottom-up approaches, which include traditional methods {B5, C2}	D.5.1 Lead education and awareness campaigns for the public and consumers on biodiversity impacts and sustainable choices {B6} D.5.2 Act as a bridge between Governments, businesses and financial institutions to facilitate knowledge exchange and shared understanding {B6} D.5.3 Collaborate across civil society to strengthen biodiversity literacy and cross-sectoral engagement {B6} D.5.4 Design and deliver mutually supportive capacity-building programmes tailored to Indigenous Peoples and local communities {B6} D.5.5 Promote intercultural competence training and highlight the value of Indigenous knowledge systems {B6} D.5.6 Empower communities to participate in decision-making processes related to business and biodiversity {B6}

KM4 All businesses have a responsibility to address their impacts and dependencies {A3, B7, B8, B9, B10, B11, B12, B13, C1}.

There are many actions that businesses, including financial institutions, can take now to benefit businesses and biodiversity (Table SPM.2). The level of responsibility of individual businesses to act is a societal decision¹¹ that can be informed by the scale of their impacts and dependencies on biodiversity and nature's contributions to people, including ecosystem services. Methods exist for measuring businesses' impacts and dependencies (Table SPM.5). Impacts and dependencies can result in risks and opportunities for businesses. By understanding and managing their impacts and dependencies, businesses can reduce risks and deliver positive outcomes for both business and biodiversity. Understanding and managing

impacts can lead to changes in business dependencies, and understanding dependencies can support actions to address impacts. Historically, business actions to manage negative impacts have mostly been driven by regulation (Figure SPM.3).

Businesses, including financial institutions, can: (a) establish corporate governance and strategic frameworks to set directions and enable actions that improve biodiversity outcomes across their operations, value chains and portfolio; (b) implement actions in their operations to deliver positive outcomes for biodiversity at the site, landscape and seascape levels, including by applying the mitigation hierarchy to avoid, minimize, restore, and offset impacts; (c) implement actions for their value chain that address impacts and dependencies directly or by influencing others upstream (working with suppliers) and downstream (engaging distributors, retailers and consumers); and (d) in the case of financial institutions, shift finance in their portfolios away from harmful activities and

11. The term "societal decision", as used here, refers to a decision taken in relation to globally agreed goals and national contexts, including policy, laws and regulations.

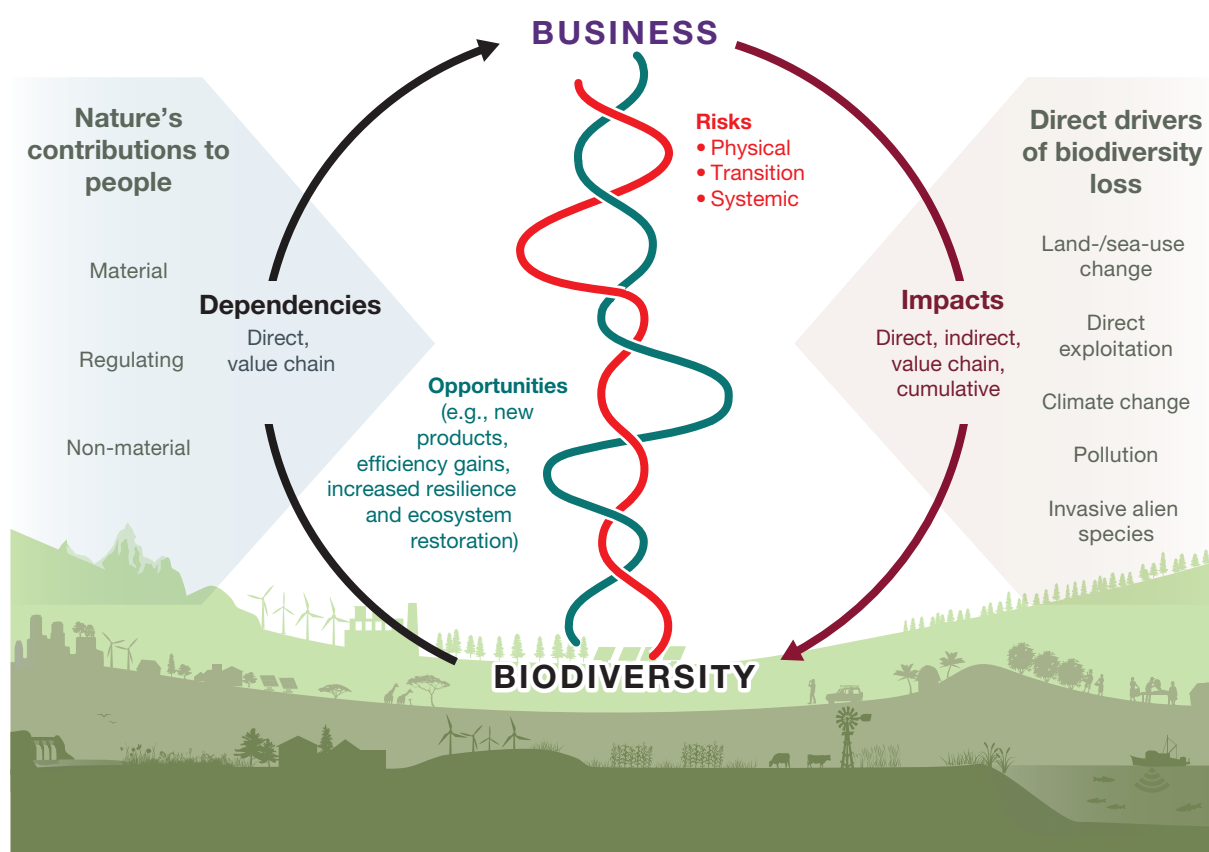


Figure SPM 3 **Impacts and dependencies of business on biodiversity and nature's contributions to people.**

Businesses have impacts that can be direct, indirect, through the value chain, or cumulative, and their activities contribute to the five direct drivers of biodiversity loss. Their dependencies can be direct or through the value chain and can arise from nature's material, non-material and regulating contributions to people. Risks can be physical, transitional or systemic. Opportunities for business include new products, efficiency gains and increased resilience. Risks and opportunities may interact, and risk management may create opportunities.

towards positive impacts. Through actions at these levels, businesses can contribute to an enabling environment and influence other actors to improve biodiversity outcomes. To avoid greenwashing, it is essential that businesses develop transparent and credible strategies based on an understanding of their impacts and dependencies and clearly demonstrate verifiable biodiversity outcomes (Table SPM.2).

KM5 **Methods, knowledge and data for measuring impacts and dependencies already exist and can further inform decisions and actions, directly and in the value chain {A5, B8, C1, C3}.**

The science base for understanding and measuring business impacts and dependencies is already being used to guide business actions. Some businesses already apply

Table SPM 2 **Actions that businesses can take now to address their impacts and dependencies.**

Close links exist between actions implemented across the four decision-making levels. For example, targets set at the corporate level drive actions and outcomes at the operations and value chain levels. Across all decision-making levels, actions can be taken individually or collectively, including through collaboration and partnerships.

Business decision-making level	Examples of actions businesses can take
Corporate {A3, B2, B9} 	• Comply with biodiversity-related policies, laws and regulations • Set ambitious commitments and targets and integrate biodiversity into corporate strategy • Integrate biodiversity-related risks, opportunities, costs and benefits into business decision-making and financial planning • Create policies, develop management systems and clarify requirements for engagement, measurement, monitoring, reporting, disclosures and assurance • Establish mechanisms for the participation of Indigenous Peoples and local communities in decision-making • Establish policies and standards to comply with access and benefit-sharing and consent mechanisms, including free, prior and informed consent, in accordance with national legislation • Weave Indigenous and local knowledge into operations, resource management and sustainability strategies • Build staff capacity and board-level environmental leadership • Establish auditing, monitoring and performance assessment • Transition the business, build capacity and ensure adequate resourcing to implement policies and achieve targets • Introduce innovative processes, products and services • Explore and adopt alternative business models Additional actions specifically for financial institutions {B12}: • Set requirements for clients to address impacts and dependencies • Commit resources to the use of instruments such as blended finance, green or sustainability-linked bonds, and impact investing
Operations {B11} 	• Conduct environmental and social impact assessments and develop management plans • Develop baselines and monitoring that recognize the multiple values of nature • Apply the mitigation hierarchy to achieve no net loss of biodiversity (or better) • Measure and monitor biodiversity impacts and outcomes of actions • Identify and meaningfully engage with stakeholders • Seek free, prior and informed consent, particularly from Indigenous Peoples and local communities, in accordance with national legislation • Go beyond impact mitigation to engage in landscape conservation, restoration and sustainable management
Value Chain {B10} 	• Map value chain actors and ensure traceability to prioritize and inform action • Use supplier management systems to set expectations, monitor performance and address non-compliance • Build relationships and partnerships to improve capacity and drive performance through training, knowledge exchange and innovation • Integrate communities into value creation activities, such as sourcing, production and distribution • Engage, educate and incentivize downstream customers, clients and consumers
Portfolio {B12} 	• Assess biodiversity impacts and dependencies • Engage with businesses within the portfolio to foster actions that improve performance in terms of biodiversity impacts and dependencies • Manage biodiversity risks and impacts, for example through stewardship, divestment and/or exclusion

existing methods, knowledge and data; as the science base improves, all businesses will be able to take action. The understanding of how to apply methods for impact assessment is more advanced than for assessments of dependencies. The availability of measurement approaches and underlying data varies by business sector, ecological realm and jurisdiction. The application and uptake of methods is low and uneven across and within business sectors and varies across regions and countries, reflecting differences in data availability and technical capacity.

Different knowledge communities offer credible methodologies that can be applied across diverse business contexts, each contributing distinct approaches to addressing impacts and dependencies. Many aspects of biodiversity and nature's contributions to people may be relevant to measuring business impacts and dependencies, including aspects at the genetic, species and ecosystem levels and the diverse benefits associated with nature's contributions to people. Which aspects should be measured depends on the context, location and action to be taken or the decision to be informed. As a result, a combination of methods or metrics, which may include scientific, Indigenous and local knowledge, will often be necessary to fully capture the impacts and dependencies of business on biodiversity and nature's contributions to people.

KM6 Different methods to measure and manage impacts and dependencies are needed for different sectors, decision-making levels and business purposes {A8, B8, C1, C2, C4, C7}.

No single method is suitable for all business decisions (Table SPM.3). Different methods and metrics are needed for distinct sectors, decision-making levels and purposes of measurement.

Decisions at the operations level require site-specific information and data, which may be gathered using bottom-up approaches,¹² including location-based observations, participatory mapping and monitoring, and spatial analysis built on the data from those sources. Such approaches can make use of data and metrics representing local values and the knowledge, rights and interests of other groups, including Indigenous Peoples and local communities. Bottom-up approaches can provide greater accuracy at local scales and can show how outcomes change in response to concrete actions or activities on the ground. Cumulative impacts, which arise from the aggregated effects of businesses and other actors at a location over time, are better assessed for an area such as a site, landscape or seascape than for a particular business.

Top-down methods¹³ include life-cycle approaches and macro-scale environmental economic models appropriate for decisions at the portfolio, corporate and value chain levels. Depending on the purpose of measurement, they can be conducted with lower-resolution spatial data but wider geographical scale. Portfolio-level decisions can be guided by globally comparable methods where there is sufficient resolution within sectors (e.g., differentiating according to geography or product type). Corporate-level decisions can be informed by methods that use company-specific information. Value chain-level decisions can make use of life-cycle approaches that assess potential impacts of value chains, although they are less relevant for assessing dependencies. Top-down methods provide an assessment of potential impacts and dependencies and inform decisions through screening and comparing options. However, those methods may have limited ability to track progress resulting from specific business actions. Top-down approaches using coarse-resolution data often fail to reflect local ecological values and are less able to represent the diverse values of nature, including the values and interests of Indigenous Peoples and local communities.

As a result, important areas for the future development of top-down approaches include higher-resolution spatial and temporal data and better interweaving with diverse values of nature for understanding dependencies, impacts, risks and opportunities.

KM7 Appropriate methods to measure and manage business impacts and dependencies can be selected on the basis of coverage, accuracy and responsiveness {C1, C2, C4}.

Methods can be assessed as fit for purpose against three overarching characteristics: coverage, accuracy and responsiveness. Coverage refers to both the geographical scale as well as the extent of impacts and dependencies included. To be fit for purpose, a method or combination of methods needs to cover the impacts and dependencies of the activities of a business at the relevant geographical scale. Accuracy is the degree to which the results correctly describe what they are designed to measure. The accuracy necessary for a method to be considered fit for purpose varies by both decision-making level and purpose of measurement. Responsiveness refers to the ability of the method to detect changes that can be attributed to the actions and activities of the business. To be fit for purpose, a method needs to clearly link changes in biodiversity and nature's contributions to people to specific interventions.

Currently available methods do not always satisfy the criteria of coverage, accuracy and responsiveness for all business

12. Bottom-up methods start from site-level, species-level or asset-level observations and build biodiversity measures from the ground up. They are characterized by high precision and low coverage.

13. Top-down methods start from aggregate, system-level signals (e.g., for sectors or regions) and infer biodiversity outcomes or pressures from above. They are characterized by wide coverage and low precision.

applications. Where methods do not meet the necessary requirements, they may not be entirely fit for purpose. They can, however, still produce useful information on which businesses can act. Such limitations need to be understood by businesses. Different methods also require different levels

of expertise, resources and costs, presenting particular challenges for small and medium-sized enterprises. While recognizing constraints, businesses can start using methods and improve their capabilities over time.

Table SPM 3 **Suitability of methods for assessing impacts and dependencies by decision-making level and purpose of measurement.**

The categories of methods are not mutually exclusive and represent a continuum rather than strictly delineated categories. At each decision-making level, methods can be applied for different purposes. The icons indicate the extent to which methods within each category are currently available and applicable, can be applied given sufficient accuracy, coverage and responsiveness ("Proceed with caution"), or are currently not feasible or applicable.

		Method categories				
		Location-based observation	Participatory mapping and monitoring	Spatial analysis	Life-cycle approaches	Macro-scale environmental economic models
Business decision-making level	Purpose of measurement					
		Involves using direct measurements at specific locations, including field observations and remote sensing	Involves collaboration with external stakeholders, rights holders or communities, including Indigenous Peoples and local communities	Includes overlays of spatial data layers, and ecological and hydrological modelling	Includes full life-cycle assessments and various forms of environmental footprinting	Includes qualitative and quantitative approaches
Operations Business operations carried out at sites under the direct control of the business entity		→→	→→	→→	→→	×
		→→	→→	→→	→→	×
		→→	→→	→→	→→	×
		→→	→→	→→	×	×
Value chain Activities beyond the direct control of an individual business entity, involving suppliers, manufacturers, distributors, retailers and customers		×→	×→	→→	→→	×
		×→	×→	→→	→→	×
		→→	→→	→→	→→	×
		→→	→→	→→	×	×
Corporate A business or group of business entities, typically within an industry, governed as a single organization		×→	×→	→→	→→	→→
		×→	×→	→→	→→	→→
		×→	×→	→→	→→	×
		×→	×→	×→	×	×

Table SPM 3

Business decision-making level	Purpose of measurement	Method categories				
		Location-based observation	Participatory mapping and monitoring	Spatial analysis	Life-cycle approaches	Macro-scale environmental economic models
		 Involves using direct measurements at specific locations, including field observations and remote sensing	 Involves collaboration with external stakeholders, rights holders or communities, including Indigenous Peoples and local communities	 Includes overlays of spatial data layers, and ecological and hydrological modelling	 Includes full life-cycle assessments and various forms of environmental footprinting	 Includes qualitative and quantitative approaches
Portfolio  A group of investments owned by a financial institution, or a group of business units owned by a conglomerate						
						
						
						

Purpose of measurement

-  **Screening:** identifying priorities requiring further analysis or action
-  **Comparing options:** evaluating potential impacts and dependencies of business activities relative to alternatives
-  **Tracking potential changes in impacts/dependencies:** measuring change in pressures over time as part of an impact assessment, or the change in reliance of business activities on nature's contributions to people over time as part of a dependency assessment
-  **Observing change in biodiversity:** showing positive or negative changes in biodiversity and nature's contributions to people that can be attributed or linked to business activities or action on biodiversity

Level of applicability

-  **Available and applicable**
-  **Proceed with caution:** methods can be applied provided sufficient accuracy, coverage and responsiveness
-  **Not currently feasible**
-  **Not applicable**

KM8 Businesses could better measure and manage their impacts and dependencies by appropriately engaging with science and Indigenous and local knowledge, methods and practices {A5, A7, B5, B6, B10, C3, C4, C7, C8}.

Data and knowledge on the impacts and dependencies of business on biodiversity and nature's contributions to people exist within the scientific community, among Indigenous Peoples and local communities, and within businesses, but are often siloed and not effectively considered by businesses in decision-making. Scientific literature is not written for businesses, and a lack of translation and attention to the needs of businesses has slowed uptake of scientific findings. Among businesses, there is often limited understanding of the role of Indigenous Peoples

and local communities as stewards of biodiversity and holders of knowledge on its conservation, restoration and sustainable use. Better understanding could improve business decision-making. Indigenous Peoples and local communities often find themselves inadequately represented in research and decision-making processes, further undermining their contributions and weakening their voices, which may result in businesses failing to learn from them. This may have implications for the ability of businesses to comply with access and benefit-sharing mechanisms and approaches. While examples of interweaving Indigenous and local knowledge with scientific methods exist, businesses lack the experience of working with Indigenous Peoples and local communities needed to ensure that their knowledge is represented and their values are considered in decision-making. Due diligence by businesses involves

consent mechanisms, including the free, prior and informed consent of Indigenous Peoples and local communities, in accordance with national legislation. Structured collaboration resulting in the sharing and better use of data and information, scientific insights and Indigenous and local knowledge on business impacts and dependencies can translate into better management of business risks and the realization of opportunities.

KM9 The existing knowledge base needs to be strengthened by addressing important gaps in knowledge and its application {A5, A7, B5, B6, B13, C3, C4, C5, C6, C7, C8}.

Businesses can act now on the basis of existing knowledge; however, limitations remain in the currently available knowledge base and guidance. A paucity of quantitative, standardized and comparable estimates of the impacts of different businesses hinders the ability of all actors to fully understand and effectively manage business activities. This restricts the ability of financial institutions to choose investments that minimize negative or maximize positive impacts. Needs differ according to context, scale and sector, and consistent methodological approaches need to be developed and disseminated that produce accurate results, particularly for decision-making contexts in which the ability to compare or aggregate data across sites, value chains or businesses is important. Existing methods have yet to produce a comprehensive and comparable attribution of impacts across all sectors or businesses. The ability of assessments to inform action is hampered by their limited integration into business accounts and processes. Clear gaps in knowledge and its application exist in relation to: (a) business-relevant data; (b) completeness of evidence; (c) applicability of methods; (d) data accessibility and transparency; and (e) adoption of methods.

Addressing these gaps would contribute to significantly improving the ability of businesses to measure their impacts and dependencies, with implications for their understanding of risks and opportunities. Better understanding could help to accelerate actions that benefit both businesses and biodiversity. Priority actions to address gaps can include:

- (a) Facilitating greater uptake by businesses of existing methods and knowledge and their integration into business accounting and management systems;
- (b) Collecting and sharing comparable information, including through disclosure mechanisms, on the activities and locations of businesses, their operations and value chains;
- (c) Providing scenarios that support the assessment of performance against agreed goals and targets;

- (d) Providing actionable guidance for businesses to select methods appropriate to their context and needs;
- (e) Co-creating actions based on methods and knowledge built with participatory approaches involving Indigenous Peoples and local communities.

Information that is easily understandable, standardized, transparent, interoperable, practical and actionable provides the foundation on which businesses and financial institutions can choose actions that are beneficial for biodiversity and society. Turning disclosure and awareness into informed action across the whole of society requires specific, context-dependent knowledge about business impacts and dependencies on biodiversity and nature's contributions to people. In the case of dependencies, mandatory or voluntary disclosure could support scientific advances in order to accurately measure nature's non-material and regulating contributions to people, which are currently underrepresented in tools and approaches. Examples include recreation, learning and inspiration, supporting identities, regulation of pollutants, climate regulation and pollination.

KM10 Creating an enabling environment can incentivize actions that are beneficial for businesses, biodiversity and society for a just and sustainable future {A8, B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13}.

Under current conditions, what is profitable for businesses often results in loss of biodiversity, and what is good for biodiversity and society is often not profitable. Businesses are motivated to focus on financial materiality in order to meet short-term objectives and achieve profitability. This undermines their ability to take actions that address long-term outcomes with system-level implications. To address this problem, efforts have been made to require businesses to consider not only what is financially material but also what is material for biodiversity and society. While this can encourage businesses and financial institutions to consider multiple dimensions when taking decisions, it perpetuates a system built on the idea of trade-offs between profitability and biodiversity. Creating an enabling environment that provides incentives for the conservation and sustainable use of biodiversity and nature's contributions to people could align what is profitable with what is good for biodiversity and society. It would result in businesses and financial institutions being positive agents of change in transforming to a just and sustainable economic system by addressing their impacts on biodiversity loss, climate change and pollution, which are interconnected.





**BACK-
GROUND**

BACKGROUND MESSAGES

A. Understanding the relationship between business and biodiversity

A1 Businesses depend on biodiversity, but business actions continue to drive declines in biodiversity and nature's contributions to people (*well established*).

Biodiversity provides goods and services that are essential to the economy and business activities. For example, biodiversity provides raw materials and energy and regulates environmental conditions, including by modulating water flows to reduce flooding during wet seasons and by providing water during dry seasons. Biodiversity also underpins genetic diversity, which can inform research and innovation and contributes to science, education and cultural and spiritual values (*well established*) {2.2.1}. Despite its importance, the loss of biodiversity and nature's contributions to people has accelerated since the industrial revolution due to rapid economic growth and changes in production and consumption patterns (*well established*) {1.1.2, 1.1.3}. Economic activity and global trade have increased at a faster pace than human population growth (*well established*) {1.1.2}. The transformative change assessment¹⁴ identified three underlying causes of biodiversity loss: disconnection from nature, concentration of power and wealth, and prioritization of short-term individual and material gains (*well established*) {1.1.4}. Business activities are shaped by and contribute to these socioeconomic trends and their underlying causes, often in complex and unpredictable ways (*well established*) {3.2.1}. The growing economy continues to contribute to the direct drivers of biodiversity loss (i.e., land- and sea-use change, unsustainable direct exploitation of organisms, climate change, pollution, and invasive alien species, among others), placing increasing pressure on biodiversity and nature's contributions to people (*well established*) {1.1.4}. Measures of biodiversity and nature's contributions to people have shown declines for decades (*well established*) {1.1.1, 1.1.2, 1.1.3, 1.1.4}. Since 1992, human-produced capital (e.g., buildings and machinery) that improves economic productivity has increased by approximately 100 per cent per capita on average, with wide disparities among countries, while stocks of natural capital (i.e., ecosystems and natural resources) have been reduced by nearly 40 per cent (*well established*) {1.1.2}.

A2 Biodiversity losses caused by economic activity put the future of businesses, the economy and global society at risk (*well established*).

The loss of biodiversity and nature's contributions to people, including stocks of natural resources, resulting from unsustainable use threatens the ability of businesses, local economies and entire sectors to function (*well established*) {1.2.9}. The first global assessment of biodiversity and ecosystem services¹⁵ shows that, while biodiversity and nature's contributions to people are providing more food, energy and materials than at any other point in human history, doing so often comes at the expense of rapid biodiversity decline, diminished ecosystem function and reductions in many of nature's contributions to people (*well established*) {1.1.2, 1.3}. Because biodiversity loss is driven in large part by economic activity and by systemic failures to internalize nature's values, the resulting degradation of ecosystems generates physical risks for the very businesses and economic systems that depend on them (*well established*) {1.1.2, 1.3, 1.2.9}. This situation creates pervasive systemic risk that affects the stability of the financial system and the global economy (*well established*) {1.2.9}. Risks associated with biodiversity loss and ecosystem collapse, along with extreme weather events, critical changes to Earth systems,¹⁶ and natural resource shortages and pollution, are expected to be among the highest-ranked global risks over the next 10 years (*well established*) {1.4.2}. Climate- and biodiversity-related risks may interact to amplify social and economic impacts (*well established*) {1.4.2, 3.5.2}. Such risks affect some sectors directly (e.g., agriculture, tourism and insurance) and all sectors indirectly (*established but incomplete*) {2.5.1, 2.5.5}. Those risks may have disproportionate impacts on developing countries, whose economies are more reliant on biodiversity and have less technical and financial capacity to absorb shocks (*well established*) {1.2.9, 3.5.2}.

15. IPBES (2024). Global Assessment Report on Biodiversity and Ecosystem Services (see footnote 3).

16. As defined in World Economic Forum, *Global Risks Report 2025* (Geneva, 2025).

14. IPBES (2024). *Transformative Change Assessment* (see footnote 6).

A3 Current conditions perpetuate business as usual and do not support the transformative change required to halt and reverse biodiversity loss (*well established*).

Business governance, strategies and structures have evolved in response to economic, financial, political and social systems that have commonly ignored or undervalued biodiversity, creating tension between business actions and the conservation and sustainable use of biodiversity (*well established*) {1.1.2, 1.1.4}. For example, time pressures on decision-making and timescales for investment returns and reporting by businesses – with emphasis on quarterly earnings and annual reporting – are shorter than many ecological processes, such as ecosystem regeneration (*established but incomplete*) {5.3.2}. As a result, the loss of biodiversity is not adequately internalized in business decision-making, making it difficult for businesses to justify action under traditional interpretations of fiduciary duty, which typically prioritize short-term shareholder returns (*established but incomplete*) {5.1}.

Markets fail to adequately price or value biodiversity and many of nature's contributions to people, such as the filtration of pollutants, climate regulation and pollination (*well established*) {1.1.2}. Therefore, businesses bear little or no financial cost for negative impacts and may not generate revenue from positive impacts on biodiversity (*well established*) {1.1.2}. As a result, there are insufficient incentives for businesses to take action in order to conserve, restore or sustainably use biodiversity (*well established*) {1.1.2, 5.1, 5.3.2}.

Public policy can further accelerate biodiversity decline (*well established*) {5.3.2}. In 2023, global public and private financial flows with direct negative impacts on nature, including environmentally harmful public subsidies and private investment in high-impact sectors, were estimated at \$7.3 trillion. Of that total, private finance accounted for around two thirds (\$4.9 trillion), while public spending on environmentally harmful subsidies to economic sectors responsible for biodiversity loss and nature's decline totalled approximately \$2.4 trillion. There are considerable differences between business sectors.¹⁷ By contrast, only around \$220 billion in public and private financial flows in 2023 were directed towards activities that contribute to the conservation and sustainable use of biodiversity (*well established*) {5.3.2}. Some subsidies are positive for biodiversity outcomes (*well established*) {1.1.2}. Far lower and fewer subsidies are provided to businesses for the conservation, restoration or sustainable use of

biodiversity (*well established*) {5.3.2}. Public subsidies that support harmful activities and distort trade can have significant economic repercussions for all countries, especially for developing countries, and in some cases may have implications for the capacity of businesses to invest in sustainable activities and practices. Incorporating biodiversity considerations into trade policies is an important lever to create an enabling environment (*established but incomplete*) {1.1.2, 6.1.4}. Some business actions intended to conserve and sustainably use biodiversity and nature's contributions to people, such as modes of sustainable production and consumption (e.g., waste reduction or circular economy approaches), can be profitable under the current conditions. This explains why some businesses already take some actions that have a positive impact on biodiversity (*established but incomplete*) {5.3.1}; however, those actions alone are not enough to halt and reverse the loss of biodiversity at a global scale (*well established*) {5.1, 5.2.2}.

A4 All businesses across all sectors depend on biodiversity and nature's contributions to people (*well established*).

Business dependencies can result from: (a) material inputs to processes and products, such as genetic resources, raw materials and energy; (b) regulation of the environmental conditions in which the businesses operate, such as modulation of water flows and control of erosion; and (c) non-material contributions, such as recreational, educational and spiritual, cultural and aesthetic values (*well established*) {2.2.1, 2.5.2, 2.5.4, 2.9}. Dependencies on material inputs can result in negative impacts on other actors and on the business itself when extraction exceeds levels of sustainable use (*well established*) {2.2.1}. In managing their dependencies, businesses have to navigate complex trade-offs and consider broader societal needs (*established but incomplete*) {2.8}. The magnitude of the dependence and the availability and stability of the supply of nature's contributions to people determines the associated type and level of risk to the business (*established but incomplete*) {2.2.4, 2.5.5}. Dependencies are not always obvious; for example, while grocery stores and restaurants have little direct dependence on biodiversity, they are part of the agricultural value chain that begins with primary agricultural producers (*well established*) {2.2.1}. Similarly, waste management can depend on microbial communities for efficient solid waste processing (*well established*) {2.2.1}. Dependencies on biodiversity may span long distances (e.g., consumption of traded goods far from the place of production) and long periods of time (e.g., timber harvests) (*well established*) {2.2.1}. Many Indigenous Peoples and local communities and their businesses are especially dependent on biodiversity for their livelihoods and well-being. Upstream smallholder producers, including women and girls, may have limited capacity to absorb or adapt to

17. Information on specific sectors with figures on financial flows can be found in section 5.3.2 of the assessment report, as well as in: United Nations Environment Programme, *State of Finance for Nature 2026: Nature in the Red – Powering the Trillion Dollar Nature Transition Economy* (Nairobi, 2026).

negative impacts compared to businesses downstream in the value chain (*established but incomplete*) {1.2.3, 1.2.9, 2.2.4, 2.5.5, 2.7, 3.2.4}.

A5 Understanding of business dependencies on biodiversity and nature's contributions to people across sectors and scales is incomplete and uneven (*well established*).

Sectors with high and direct dependence on biodiversity, such as agriculture or extractive industries, tend to have financial incentives to consider and measure dependencies because they use or produce raw materials (*well established*) {2.5.1, 3.5}. There is relatively limited consideration of dependencies and associated risks in the value chain and for non-material and regulating contributions. Studies of business dependencies have focused mainly on biophysical data in directly dependent sectors such as agriculture, fisheries, pharmaceuticals and tourism and on readily apparent inputs such as pollination and water (*established but incomplete*) {2.5}. Fewer studies have translated dependencies into monetary valuation (*established but incomplete*) {2.3, 2.4}. Businesses may also be dependent on Indigenous and local knowledge and could learn from Indigenous Peoples and local communities and the ways in which their businesses conserve and sustainably use biodiversity (*established but incomplete*) {2.7}. In most regions of the world, there is less understanding of the magnitude of business dependencies than of business impacts (*well established*) {2.5, 3.4, 4.5.2}. More evidence is available for Europe, the Americas and Asia than for Africa and Oceania (*established but incomplete*) {2.8}. Better understanding of the magnitude of business impacts and dependencies and associated risks and opportunities could help to accelerate actions that benefit both businesses and biodiversity (*established but incomplete*) {2.6, 2.8, 5.3.2}.

A6 All businesses across all sectors have impacts on biodiversity and nature's contributions to people, including through their value chains (*well established*).

The impacts of business on biodiversity can be negative or positive, direct or indirect (through the value chain), and can operate through a range of drivers that vary by location and sector, as well as within sectors (*well established*) {1.4.1, 3.2}. Business activities can affect all dimensions of biodiversity (e.g., genes, species and ecosystems) and nature's contributions to people (i.e., material, non-material and regulating contributions) (*well established*) {3.2, 3.4}. Impacts from multiple businesses can have cumulative effects that can lead to ecological tipping points being crossed, causing potentially irreversible biodiversity loss with far-reaching economic, social and ecological consequences (*well established*) {1.2.9}. The form, magnitude and reversibility of a business's impacts vary according to the

type, scale (spatial and temporal), magnitude, frequency, location and sector of its activities (*well established*) {3.2}. A business's size does not always reflect the magnitude of its impacts (*well established*) {3.2}. To date, business impacts have been predominantly negative, and many positive outcomes claimed would be more accurately described as reductions in negative impacts (*well established*) {3.2, 3.5}. While existing methods do not yet provide a comprehensive and comparable attribution of impacts across all sectors, available estimates identify agriculture, forestry and fishing; electricity and energy; mining and quarrying; construction; and transportation and storage as sectors with relatively high quantified direct impacts (*established but incomplete*) {3.4}. Because the activities of primary sectors are driven by demand from other sectors, businesses and consumers further along the value chain also contribute to those impacts (*well established*) {3.2, 3.4}. Business impacts are frequently assessed using metrics of biodiversity, such as changes in forest cover or mean species abundance. These biodiversity metrics are not necessarily good proxies for the impact on nature's contributions to people, including ecosystem services (*well established*) {3.2.1, 3.4}. Fewer studies include the impacts of businesses on nature's contributions to people; as a result, the consequences of business activities for human well-being, including intergenerational impacts, are often ignored (*well established*) {3.3, 3.4}.

A7 Business impacts on biodiversity and nature's contributions to people have profound impacts on human health and well-being, particularly among Indigenous Peoples and local communities (*well established*).

Business impacts on biodiversity can negatively influence the interrelationships between people and nature, with potentially long-lasting economic, social and cultural implications (*well established*) {3.2.4}. Women and girls, young people, rural communities and Indigenous Peoples and local communities are especially susceptible to negative impacts from businesses (*well established*) {3.2.4, 3.4.4, 3.5.4}. There is growing recognition that, when assessing their impacts on nature, businesses should include social and human rights considerations {1.4.2}. Industrial development threatens approximately 60 per cent of Indigenous lands globally, and nearly one quarter of Indigenous territories are under high pressure from resource exploitation (*established but incomplete*) {2.7}. The same issues affect local communities {3.2.1}. Demand for minerals vital to the energy transition has elevated these risks, with mining projects frequently being developed in Indigenous and local territories (*established but incomplete*) {2.7}. Some businesses led by Indigenous Peoples and local communities share communal objectives and draw on place-based knowledge, characteristics that make them more likely to have positive impacts (*established but*

incomplete) {1.2.3, 2.7.2}. Indigenous and local knowledge offers valuable lessons for businesses, including different ways of conceptualizing and understanding businesses, traditional practices, business principles and ways of operating. Community-based monitoring approaches that interweave Indigenous and local knowledge with scientific methods exist; however, uptake of these approaches by businesses is low (*well established*) {4.3.1}.

A8 Business impacts and dependencies create both risks and opportunities for businesses (*well established*).

Biodiversity loss creates risks for businesses that may be physical (e.g., flood damage to facilities), transitional (e.g., new regulations) and systemic (e.g., macroeconomic and financial shocks). These biodiversity-related risks can interact, creating larger risks for businesses (*well*

established) (**Figure SPM.4**) {1.4.2, 3.5.2, 3.5.4}. Biodiversity-related risks can have legal and financial consequences for businesses and financial institutions (*well established*) {1.2.9}. The extent to which specific businesses are exposed to risks arising from their dependencies remains understudied (*established but incomplete*) {2.5.5}. Biodiversity-related opportunities can be created by avoiding harm to biodiversity, mitigating negative impacts, delivering positive impacts and managing dependencies sustainably, including through restoration, nature-based solutions and/or ecosystem-based approaches (*well established*) {1.4.2, 2.2.4, 3.5.3}. For example, businesses may find opportunities to meet the demand for monitoring and reporting of biodiversity outcomes {3.5.3}. Such opportunities can be commercially viable and deliver positive outcomes for biodiversity and businesses and other stakeholders, such as the

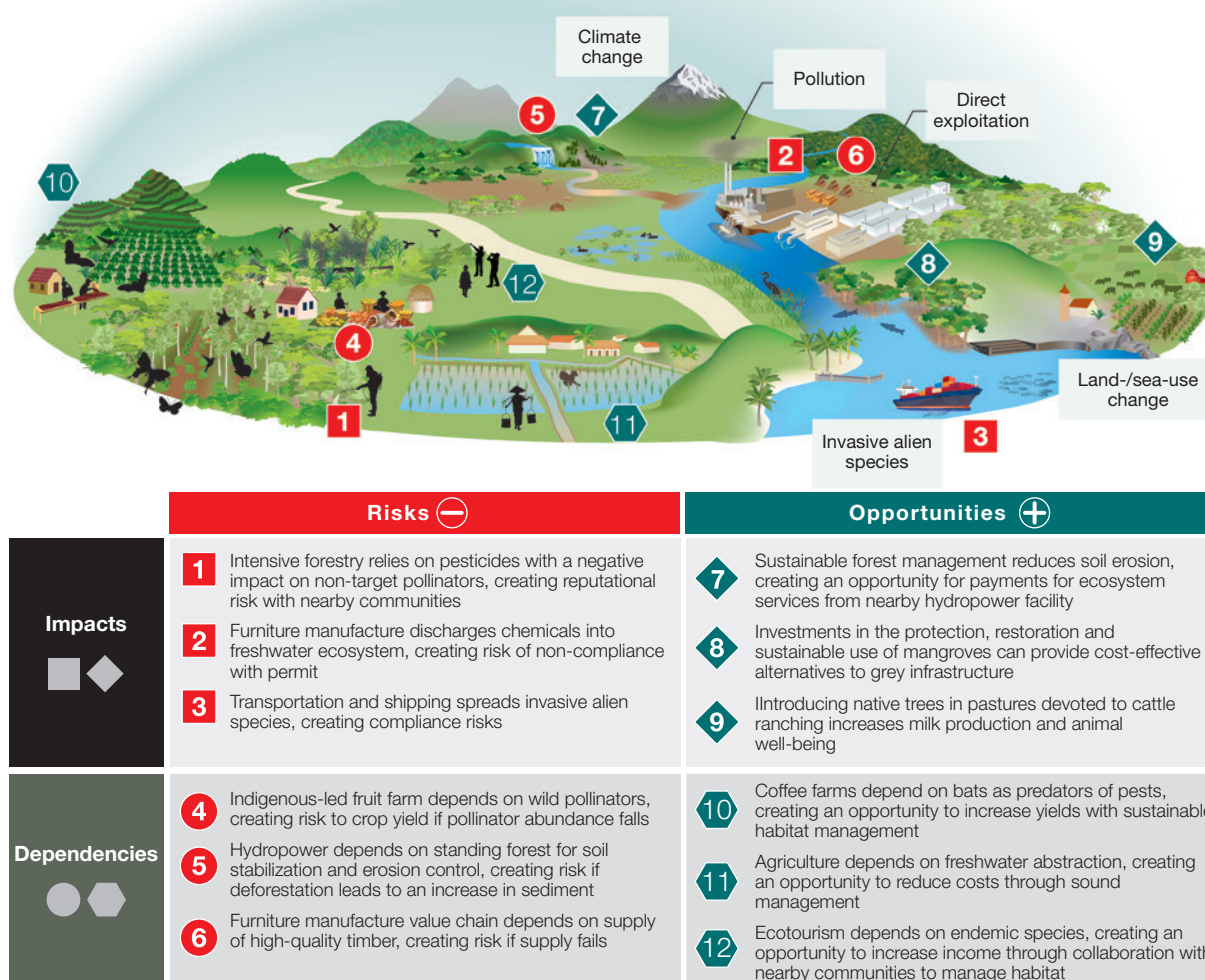


Figure SPM **4** **Examples of the intersections between impacts, dependencies, risks and opportunities**

opportunities arising from sustainable land management, the value of which is projected to quadruple to \$737 billion by 2050 (*established but incomplete*) {1.2.10}. When businesses avoid, reduce or otherwise mitigate biodiversity-related risks, the risks can turn into opportunities (*well established*) {3.5.3}. Addressing systemic risks and taking advantage of the significant opportunities that arise with transformative change require coordinated actions that go beyond what individual businesses have incentives or resources to accomplish alone (*well established*) {1.2.6, 5.7.3, 6.1.3}. The lack of quantitative assessments of opportunities contributes to low uptake of positive actions

(*established but incomplete*) {3.4.3, 5.3.2}. With information and proper incentives, businesses can address biodiversity-related impacts, dependencies, risks and opportunities and contribute to positive outcomes (*well established*) {1.4.2, 3.5.2, 3.5.3, 3.5.4, 5.6.2, 5.6.3, 5.6.4, 5.7.1}. Understanding of risks and opportunities has increased with the publication of influential global reports, such as the first Global Assessment of Biodiversity and Ecosystem Services (2019), which have contributed to the recognition of the loss of biodiversity and nature's contributions to people as a major risk to the global economy (*well established*) {1.1.2, 1.4.2, 2.4.5}.

B. Options for action by businesses, including financial institutions and other financial actors, and Governments and other actors

B1 Creating an enabling environment for transformative change requires collaborative action by Governments, financial actors, other actors and businesses themselves (*well established*).

Current conditions are sufficient to drive some actions by some businesses, but they are not sufficient to achieve the transformative change necessary to halt and reverse biodiversity loss (*established but incomplete*) {5.1, 5.3.1, 6.1.3}. Businesses influence and are influenced by conditions created through policy, legal and regulatory frameworks, economic and financial systems, social values, norms and culture, technology and data, and capacity and knowledge (*well established*) {5.3, 5.7}. Changing these conditions, including through alternative models and measures of economic welfare, such as bioeconomy, circular economy, degrowth, post-growth, inclusive wealth and decoupling, can enable transformational action by businesses to address the underlying causes of biodiversity loss (*well established*) {5.3, 5.4, 5.6, 5.7, 6.1.2, 6.1.3}. Such an enabling environment can be created by accelerating, at all levels, individual and collaborative actions by Governments, financial institutions and other actors,¹⁸ and by businesses themselves, through a whole-of-government and whole-of-society approach (*well established*) {5.6, 5.7, 6.1.3, 6.1.4}.

Along with changes in social values and norms, changes promoted by Governments through public policies and financial incentives could align what is considered financially material to businesses with what is considered material to biodiversity and society (*well established*) {5.3, 6.3}.

Changes in conditions to create an enabling environment will impact businesses differently depending on their scale (i.e., size of business or footprint), structure, sector, maturity and relationship with biodiversity. Informal business sectors and small, medium-sized and micro-enterprises may be resource-constrained, requiring additional support to accomplish biodiversity-related objectives (*established but incomplete*) {5.3.2}. Businesses in developing countries face additional and specific challenges, such as structural barriers, fiscal and financial constraints, the influence of vested interests, a lack of institutional frameworks, technologies and technology transfer, and the need for capacity-building, undermining their capacity to invest in the technological development and educational initiatives needed to support transformative change (*established but incomplete*) {5.3.2, 6.1.5}.

B2 Policies, laws and regulations set by Governments and financial actors can influence businesses to take actions that contribute to the conservation and sustainable use of biodiversity (*well established*).

Governments and financial actors establish the policy, legal and regulatory environment in which businesses operate, including mandatory rules (i.e., laws and regulations) and voluntary incentives for businesses to take actions that contribute to the conservation and sustainable use of biodiversity (*well established*) {6.1, 6.2.1, 6.2.2}. Financial institutions can support the implementation of these mandatory rules and voluntary incentives (*well established*) {5.3.1, 6.3.1}. Policies, laws and regulations designed in an equitable and inclusive manner, taking into account existing international obligations and differing capabilities and levels of development, while avoiding unintended impacts on

18. Including civil society, Indigenous Peoples and local communities, consumers, non-governmental organizations, international organizations and academia.

livelihoods, are essential to supporting the conservation and sustainable use of biodiversity (*well established*) {6.3.1}. Lobbying, advocacy and engagement carried out by businesses, civil society, trade associations and Indigenous Peoples and local communities, along with electoral processes, can influence the policy, legal and regulatory environment (*well established*) {5.7.2, 6.3}.

Measures of business impacts and dependencies can be used to provide evidence for decision-making and can support policy design (*well established*) {6.3.1.1}. Types of policies that influence business actions include fiscal policies (e.g., subsidies and taxes), land-use and marine spatial planning and zoning, the issuance of permits for business activities on the basis of biodiversity criteria (including environmental impact assessments, strategic environmental assessments and national biodiversity strategies and action plans), public procurement policy, controls on advertising, the creation of standards to prevent greenwashing, the development of voluntary standards, and rules on corporate governance and disclosure (*well established*) {5.3.1, 6.3.1}. Since business activity extends beyond national borders through international value chains and global trade, regional and international policies and regulations may also be necessary (*well established*) {6.2.1}.

Governments can also promote beneficial outcomes for biodiversity and Indigenous Peoples and local communities through access and benefit-sharing arrangements (e.g., under the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity) (*well established*) {6.3.1.5}. Patent-protected products based on biochemical substances from plants used for traditional medicine have historically generated significant revenue in the pharmaceutical and natural product industries but have not typically resulted in revenues for Indigenous Peoples and local communities, who are stewards of the knowledge associated with those genetic resources (*established but incomplete*) {6.3.1.5}.

Many current policies, such as subsidies for environmentally harmful activities, have negative impacts on biodiversity (*well established*) {5.3.2, 6.2, 6.3.1}. Businesses often lobby to keep them in place. Responsible engagement by businesses individually and collectively for ambitious biodiversity policies can help to drive systemic change, whereas lobbying against such changes to public policy can perpetuate business as usual. Public disclosure of lobbying activities is crucial for maintaining trust in the integrity of businesses (*established but incomplete*) {5.7.2, 5.7.3, 5.7.4}. Regulatory coherence across ministries and at all levels of governance is needed if harmful incentives are to be removed and biodiversity is to be addressed in sectoral policies (*well established*) {6.4.3}.

Public disclosure of business impacts and dependencies can drive greater transparency, build trust and help Governments and financial actors to enforce current laws and regulations (*established but incomplete*) {5.7.4, 6.3.1.4}. Governments and financial actors can develop consistent risk assessment frameworks and standardized reporting and promote or mandate the establishment of disclosure requirements for biodiversity-related impacts, dependencies, risks and opportunities (*well established*) {6.3.1}. The world views and approaches to materiality that underpin reporting and disclosure standards have implications for how businesses are held accountable. Integrating diverse social values can make standards more effective (*well established*) {4.6, 5.2.2, 6.3.1, 6.3.3}. Voluntary policies and business-led guidance and initiatives, such as financing principles and policies set by trade associations and commodity round tables, can supplement formal rules and help to create a level playing field across geographies, sectors and value chains (*well established*) {5.4, 5.7.2, 5.7.3, 6.3.1}.

B3 Effective economic and financial instruments can create incentives for businesses to consider the risks, opportunities, costs and benefits of their impacts and dependencies on biodiversity (*well established*).

Financial and economic instruments can help to align returns for businesses with positive outcomes for biodiversity and society (*established but incomplete*) {5.3.1, 6.1, 6.2, 6.3.2}. Alignment requires eliminating, phasing out or reforming the financial incentives underlying biodiversity loss and scaling up positive incentives for the conservation, restoration and sustainable use of biodiversity (*well established*) {5.3.2, 6.3.2}. Governments, central banks, financial regulators and supervisors, public development banks and international financial institutions can encourage financial institutions to allocate financial services (i.e., loans, investments, insurance policies) in ways that incentivize conservation and sustainable practices while discouraging harmful activities (*well established*) {5.6.4, 6.3.2}.

Governments can promote action through economic instruments such as taxes, subsidies, payments for ecosystem services, environmental markets, and multilateral benefit-sharing mechanisms such as the Cali Fund for the Fair and Equitable Sharing of Benefits from the Use of Digital Sequence Information on Genetic Resources (*well established*) {6.3.1, 6.3.2}. Governments can reform fiscal policies by eliminating, phasing out or reforming harmful subsidies and fostering positive incentives (*well established*) {6.3.2}. Public funding can be allocated to research on and monitoring of biodiversity and nature's contributions to people, education and capacity-building, targeted actions for nature-based solutions and/or ecosystem-based approaches, and the conservation, restoration and sustainable use of biodiversity (*well established*) {6.3.2}.

Governments can promote, and financial institutions can implement, innovative instruments to finance biodiversity projects, such as green bonds, payments for ecosystem services, high-integrity biodiversity credit systems, conservation funds, and sustainability-linked loans, where appropriate (*well established*) {5.6.4, 6.3.2}. Central banks and supervisors can help to drive transparency with biodiversity-inclusive financial regulations and risk management (*established but incomplete*) {6.3.2}. Public development banks can promote investments in restoration projects through blended finance, while international financial institutions can provide technical assistance and conditional funding (*established but incomplete*) {6.3.2}. Individually and collaboratively, financial institutions have a pivotal role in mobilizing finance and reforming global and national financial systems to enable businesses to take transformative actions (*established but incomplete*) {5.6.4, 6.3.2}.

Existing financial structures often disadvantage Indigenous Peoples and local communities, creating economic and social disparities (*established but incomplete*) {6.3.2.3}. Businesses can advocate for inclusive policies and the dismantling of financial barriers, which is essential for promoting economic equity (*established but incomplete*) {6.3.2.3}. Furthermore, businesses can embrace new economic models that align with the values of Indigenous Peoples and local communities (*established but incomplete*) {6.3.2.3}.

B4 Social values and norms that shape consumer preferences and determine acceptable business behaviour can help to drive transformative change (*well established*).

Social values, norms and culture help to determine acceptable business behaviours and play an important role in fostering transformative change (*established but incomplete*) {5.3, 6.1}. All actors play a vital role by fostering inclusivity and equity, thereby ensuring that Indigenous Peoples and local communities are involved in decision-making processes that respect free, prior and informed consent (*established but incomplete*) {5.2.2, 6.1, 6.2, 6.3.3}. Governments can promote ethical practices by regulating sustainability reporting, establishing standards, supporting compliance with access and benefit-sharing arrangements and providing incentives for businesses to adopt sustainable practices (*established but incomplete*) {5.3.1, 6.3.1, 6.3.3}.

Civil society can promote shifts in social values and consumer behaviour through education and awareness-raising, advocacy, accountability and collaboration (*established but incomplete*) {6.2}. Advocacy campaigns can raise awareness, foster sustainable consumption habits and encourage businesses to align operations with biodiversity goals (*established but incomplete*)

{6.3.3.2}. By facilitating partnerships, civil society ensures that environmental and societal needs are considered (*established but incomplete*) {6.3.3.1}. Civil society and non-governmental organizations can increase transparency and accountability (*established but incomplete*) {6.3.1}. Civil society also plays a key role in developing effective monitoring strategies and verification systems (*established but incomplete*) {6.3.4.1}. For example, campaigns can support widespread responsible business, lending and investment practices by pressuring financial institutions to improve their engagement strategies and avoid financing harmful activities (*established but incomplete*) {6.3.1, 6.3.3}. Businesses can use social signalling to influence consumer choices and social norms (*established but incomplete*) {5.4.4}. All actors have a role to play in promoting sufficiency and shifting away from unsustainable consumption patterns towards sustainable lifestyles and business models (*established but incomplete*) {5.6.1}.

In many countries, mechanisms for Indigenous Peoples and local communities to overcome unequal power structures, engage in policy advocacy and participate fairly in business activities are currently insufficient to ensure that businesses follow the communities' procedures of collective governance (*established but incomplete*) {5.3.2, 6.2, 6.3.3}. Businesses that depend on or impact biodiversity within the territories of Indigenous Peoples and local communities can adopt policies that guarantee that their decision-making processes are inclusive (*established but incomplete*) {5.6.1, 5.6.2, 6.3.3.1, 6.4.7}. Such mechanisms would allow the concerns of Indigenous Peoples and local communities in relation to potential business impacts and dependencies to be incorporated into business targets and strategies (*established but incomplete*) {2.7.2, 5.6.1, 6.3.3.1}.

All stakeholders, including businesses, can benefit from aligning their operations with social values, norms and culture by respecting cultural traditions and emphasizing stewardship of biodiversity (*established but incomplete*) {5.3.1, 6.3.3}. Engaging with Indigenous Peoples and local communities allows businesses to interweave Indigenous and local knowledge into their operations, fostering mutual respect and supporting positive outcomes (*established but incomplete*) {6.3.3}. Partnerships with Indigenous Peoples and local communities can emphasize the relational values of nature and highlight the long-term impacts of current management decisions (*established but incomplete*) {5.7.3, 6.3.3.1}.

B5 The generation, use and sharing of data and the leveraging of technology can create new opportunities for businesses to act (*well established*).

Governments can conduct biodiversity monitoring and collect and provide access to robust biodiversity data, including by leveraging multiple available technologies

such as Earth observation and artificial intelligence, while accounting for the methodological limitations of those technologies (*established but incomplete*) {1.5.4, 5.3.2, 6.3.4.1}. Within the legal frameworks in which they operate, Governments can also facilitate biodiversity monitoring and intelligence systems, such as the biodiversity forecasting toolkit implemented in New South Wales, Australia, or the biodiversity information system implemented in Malaysia (*well established*) {5.6.2, 6.3.4.3}. The leveraging of technology and sharing of data by Governments can support the implementation of multilateral agreements, such as the Convention on Biological Diversity (*well established*) {6.3.1}.

Governments, businesses, financial institutions and other actors, such as academia and non-governmental organizations, can collaborate to develop trusted and streamlined data governance and infrastructure that enable data-sharing across value chains and with financial institutions. In this context, businesses can play a catalytic role by making biodiversity data and tools publicly accessible as shared resources, including through pre-competitive collaboration on technology and data (*established but incomplete*) {5.7.2, 5.7.3, 6.1}. Businesses and financial institutions can generate, use and share data and leverage technology to support impact assessments, and they can generate and use models that integrate biodiversity and nature's contributions to people into economic and financial approaches (*established but incomplete*) {5.6.4, 5.7, 6.3.4.4}. Standard-setting bodies can use data and technology to promote transparency and consistency across sectors and countries by guiding businesses to disclose biodiversity impacts, for example by developing comparable accounting methods and disclosure frameworks that reflect different ecological and regional contexts and go beyond profit and financial materiality (*established but incomplete*) {5.4, 5.7.3, 6.3.4.2}. Civil society can drive transparency through biodiversity monitoring and reporting. Campaigns and collaborations can raise awareness and combat misinformation while promoting responsible biodiversity practices through accessible data resources (*established but incomplete*) {6.3.4.1}. Many of these approaches are already being implemented through existing tools, initiatives and experiences (*well established*) {1.4.1, 5.6, 5.7, 6.3}.

Indigenous Peoples' and local communities' deep-rooted knowledge of local ecosystems and the development of modern data collection and analysis tools can enable a dynamic system for monitoring biodiversity (*established but incomplete*) {6.2, 6.3.4.1}. Access to technology can also help Indigenous Peoples and local communities to monitor environmental changes, conduct environmental impact assessments of business activities on their territories, participate in the analysis of risks and opportunities and

support greater accountability by asserting their rights and claims (*established but incomplete*) {6.2.2, 6.3.1, 6.3.2, 6.3.3, 6.3.4}. Civil society plays an important role in generating data, knowledge and capacity, for example through citizen-based approaches, recognized in some countries as citizen science (*well established*) {1.5.5 6.2.2.4}.

B6 Enhanced capacity and knowledge across actors can support the measurement of impacts and dependencies by businesses and guide business actions (*well established*).

Governments and businesses can play a pivotal role in facilitating capacity-building (i.e., education, training programmes and public awareness campaigns) tailored to specific audiences and geographical contexts. They can also stimulate access to measurement tools and facilitate open-source and location-specific data on biodiversity (*well established*) {6.3.5.1}.

Civil society and academic institutions can enhance capacity by fostering education and can provide diverse perspectives to bridge the gap between businesses, Governments and various groups, such as young people and Indigenous Peoples and local communities, to ensure mutual understanding and engagement (*established but incomplete*) {6.3.5.1, 6.3.5.2}. Public awareness campaigns aimed at consumers can provide information to support sustainable patterns of consumption (*established but incomplete*) {6.3.3}.

Financial actors and financial institutions can complement capacity-building efforts through technical assistance programmes, risk mitigation tools and fiscal instruments (*established but incomplete*) {6.3.5.1}. In addition, public development banks could lead by example, supporting strategies and planning initiatives that mainstream biodiversity considerations into financial policies and investments, effectively building the capacity of financial institutions and businesses to act sustainably (*well established*) {6.3.5.1}.

Education and capacity-building programmes for businesses, communities and civil society can be tailored to the needs, realities and knowledge systems of Indigenous Peoples and local communities (*well established*) {6.3.5.3}. Establishing such programmes can raise awareness of Indigenous and local knowledge and empower individuals and communities to engage in decision-making processes related to business activities (*well established*) {6.3.5.3}. Indigenous Peoples and local communities are vital actors with regard to intercultural competencies; businesses can therefore benefit from involving these communities in their training programmes (*well established*) {6.3.5.2}.

B7 All businesses have a responsibility to act and can take further action within an enabling environment (*well established*).

Transformative change requires action by all businesses (*well established*) {1.1.2, 5.1, 6.1.2, 6.1.4}. The responsibility of individual businesses to act can be determined by reference to globally agreed goals, national contexts (including policies, laws and regulations) and the impacts and dependencies of business on biodiversity. Globally agreed goals, such as target 15 of the Kunming-Montreal Global Biodiversity Framework, include specific requirements for large and transnational businesses and financial institutions to act. Those requirements reflect the fact that responsibility is not evenly shared among businesses (*established but incomplete*) {5.2.2}. The current level of business action is insufficient for transformative change, in part because the enabling environment is missing (*well established*) {5.1, 6.1.5}. An effective enabling environment would set clear expectations about who must act, where action is required and at which locations, and which biodiversity outcomes need to be achieved {1.5, 6.3}. While these conditions are not yet fully in place, some businesses are taking incremental action, motivated by a range of factors (*well established*) {5.1, 5.5, 5.6}.

Businesses' motivations to act include intrinsic factors, such as moral norms, in their internal culture and leadership, and instrumental factors, such as attracting and retaining their workforce and the internal imperative to respond to their biodiversity-related risks and opportunities (*established but incomplete*) {5.3.1}. Whether such motivations exist depends on the socioecological context in which businesses operate (*well established*) {2.2.3, 2.2.4, 5.3}. Minor changes in context, such as changes in the cost of raw materials, the regulatory regime, the state of biodiversity or in the availability of or access to information, can change the motivations for business actions (*established but incomplete*) {5.3.1}. Transformative change under an appropriate enabling environment would align profitable business actions with what is good for biodiversity and society (*well established*) {1.5, 6.1.2, 6.1.3}. Creating this enabling environment would result in businesses and financial institutions being positive agents of change in transforming to a just and sustainable economic system (*well established*) {1.5, 5.3.2, 6.1.4}.

B8 Businesses can take actions to address their impacts and dependencies, contribute to an enabling environment and influence others (*well established*).

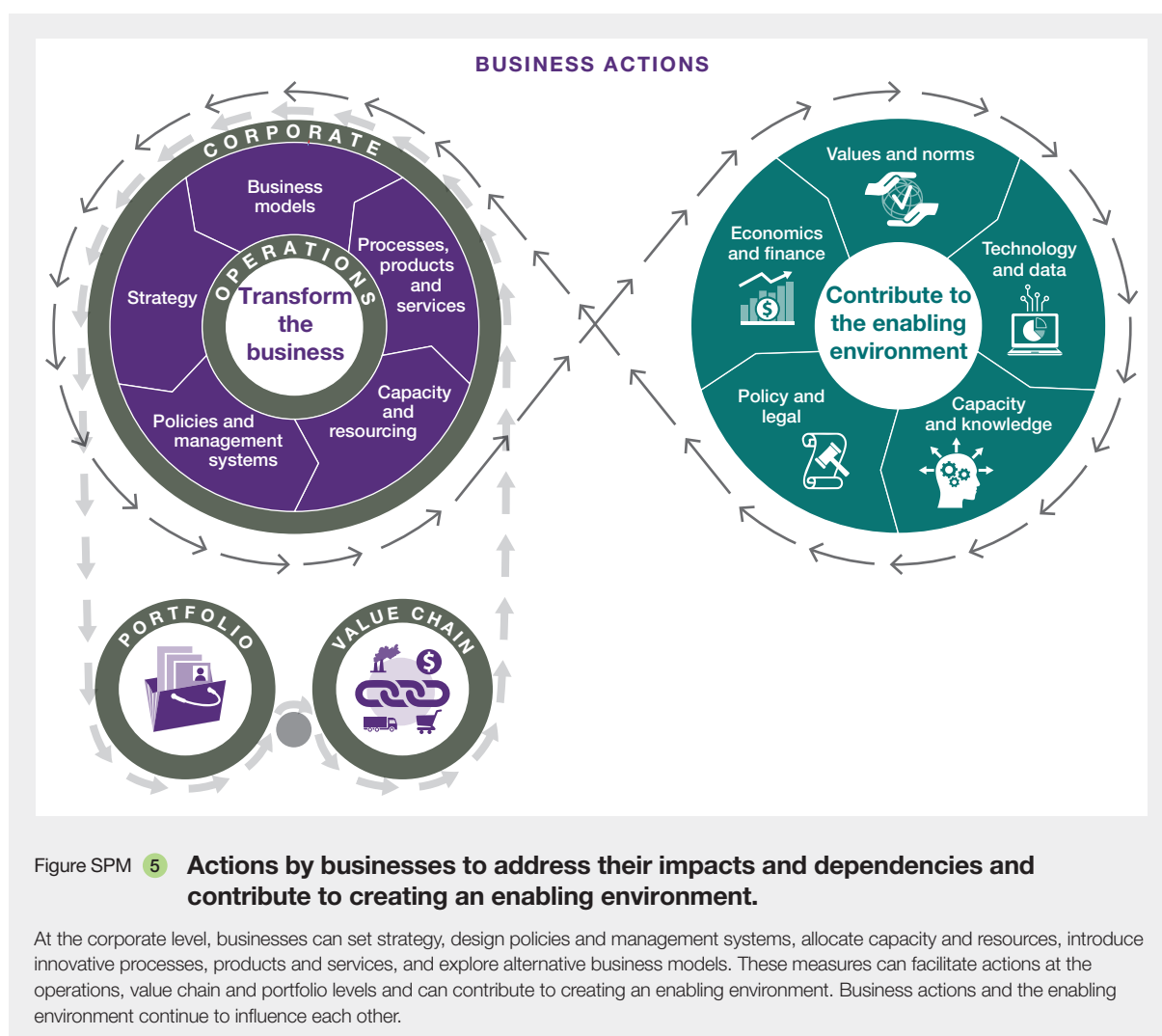
Actions are needed by all businesses, including private financial institutions. Priorities differ according to a business's size, sector, structure, relationship with biodiversity, location where outcomes can be achieved most effectively, and degree of control and influence over

stakeholders (*established but incomplete*) {5.2, 5.6, 5.7}. Signalling to inspire others requires businesses to provide robust, transparent and credible reporting of actions and outcomes (*well established*) {5.7.4}.

Actions can be pursued across the four decision-making levels at which biodiversity impacts and dependencies are measured: corporate, operations, value chain and portfolio (*well established*) {5.5, 5.6, 5.7}. Close links exist between actions implemented across decision-making levels; for example, targets set at the corporate level drive actions and outcomes at the operations and value chain levels (*well established*) {5.6, 5.7}. Across all decision-making levels, actions can be taken individually or collectively, including through partnerships (e.g., public-private partnerships) (*established but incomplete*) {5.7.2, 5.7.3} (**Figure SPM.5**).

B9 Corporate-level action sets directions, aligns governance and resources with ambitions and enables implementation and outcomes across operations and value chains (*well established*).

Businesses can establish ambitious, outcome-oriented biodiversity commitments and targets and integrate them into corporate strategy (*well established*) {5.6.1}. Biodiversity targets are more effective when their development and implementation take into consideration a business's impacts and dependencies on biodiversity and nature's contributions to people, and when they are aligned with national and global biodiversity objectives (including the three objectives of the Convention on Biological Diversity, as well as the 2050 Vision for Biodiversity) (*established but incomplete*) {2.8, 5.6.1}. Businesses can also create and revise internal policies and standards, including on procurement, incentives, investment, access and benefit-sharing, product and service design and use, marketing, stakeholder engagement and grievance mechanisms, and management systems for biodiversity measurement, monitoring, reporting and disclosure. Policies can support corporate accountability more effectively when they are paired with accounting frameworks that integrate biodiversity, alongside standardized disclosure mechanisms for businesses to report their impacts, dependencies, risks and opportunities (*established but incomplete*) {4.6.1, 5.6.1, 5.7}. Effective delivery requires shifts in corporate governance and resourcing – which have typically prioritized financial returns and profit maximization for shareholders – towards purpose-oriented models that broaden accountability to other stakeholders. Those shifts depend on aligning shareholder and societal interests, providing appropriate incentives for directors and managers, and adequate resource allocation (*established but incomplete*) {5.6.1}. The adoption of innovations and new technologies that address business impacts and dependencies – in products, processes and services – can improve outcomes for biodiversity across operations and value chains. Examples include circular



economy approaches focused on product durability and extension of product lifespans (*well established*) {5.6.1}. In addition, businesses can adopt policies to facilitate investment in biodiversity beyond their operations and value chains, including through high-integrity biodiversity credits. Finally, businesses can explore alternative business models that align with global biodiversity goals and targets and contribute towards a just and sustainable future. This can be done, for example, by shifting ownership to non-investor stakeholders, changing governance rights and decision-making power, or adopting legal forms that establish accountability for stakeholders (*established but incomplete*) {5.6.1}.

Corporate-level actions can benefit from being informed by data generated through the measurement of biodiversity and nature's contributions to people (*established but incomplete*) {4.6.1, 5.6.1}. While such information can guide and improve outcomes, many corporate-level actions can also be implemented immediately, despite incomplete data, especially when designed and implemented through

meaningful engagement with internal and external stakeholders (*established but incomplete*) {5.5, 5.6.1}. Such engagement supports knowledge acquisition, democratic environmental governance and improved corporate legitimacy. Engagement can build staff capacity and board-level environmental leadership, gather diverse perspectives on biodiversity values and actions, and provide input on strategy, target-setting and the assessment of impacts and dependencies. It can also establish requirements and commitments with regard to auditing, monitoring and performance assessment (*established but incomplete*) {2.8, 4.6.1, 5.5, 5.6.1}.

B10 Improving transparency, traceability and collaborative action in the value chain can help businesses to address impacts and dependencies (*well established*).

For many businesses, especially those that rely on raw materials, significant impacts and dependencies on biodiversity and nature's contributions to people accrue

across value chains (*well established*) {2.2.3, 3.2.2}. Businesses can adopt approaches that emphasize integration across value chains and can collaborate with suppliers and customers (*established but incomplete*) {5.6.3}. Businesses can start by mapping value chains (considering actors and inputs) and improving traceability by linking products and materials to specific suppliers, locations and impacts. Doing so can help them to identify risks and prioritize actions, although mapping beyond direct suppliers often remains challenging (*established but incomplete*) {5.6.3}. Examples at the corporate and value chain levels exist, such as companies in the chocolate industry that have made advances in recording biodiversity dependencies to improve business decisions through full traceability of materials and improved supplier control mechanisms (*established but incomplete*) {5.6.3}.

Once value chains are mapped, businesses can communicate expectations to suppliers, monitor performance and exercise due diligence, including addressing non-compliance (*established but incomplete*) {5.6.3}. Approaches that incentivize environmental performance and build long-term relationships and supplier capacity through training, knowledge exchange and innovation are often effective at improving outcomes and can be particularly critical for small businesses with limited resources (*established but incomplete*) {5.6.3, 5.7.3}. Effective value chain management requires businesses to go beyond procurement requirements, data collection and due diligence and engage in close, sustained collaboration and capacity-building with suppliers. This may include Indigenous Peoples and local communities, smallholder producers, and small and medium-sized enterprises, which often face limited institutional capacity and resources. Integrating communities into value-creation activities such as sourcing, production and distribution has been identified as a success factor in sustainable value chain management (*established but incomplete*) {5.6.3}. Consumer-facing strategies such as product labelling, education, incentives and post-purchase engagement can shape behaviour and improve transparency, but their effectiveness is constrained by consumer scepticism, certification costs and business models that rely on unsustainable consumption (*established but incomplete*) {5.6.3, 5.7}.

B11 Businesses can act at the operations level to address impacts and dependencies of their activities (*well established*).

Businesses can use robust environmental and social impact assessments and management plans at ecologically meaningful scales to inform decisions on where to locate and how to manage operations. Those assessments can be supported by credible monitoring of both business actions and biodiversity outcomes within an adaptive management cycle (*well established*) {4.4, 5.6.2}. To

deliver lasting outcomes on the ground, businesses can apply the mitigation hierarchy: first avoiding harm to biodiversity, then minimizing harm, restoring biodiversity, and offsetting residual impacts to achieve “no net loss” – and preferably a net gain – in biodiversity and nature’s contributions to people. Later-stage measures such as restoration and offsetting are typically more costly and uncertain, and less effective at returning biodiversity to baseline conditions, reinforcing the need to prioritize early-stage avoidance and minimization (*well established*) {5.6.2}. Although the mitigation hierarchy is recognized as leading practice, adoption remains incomplete, in part because many business activities and impacts fall outside regulatory requirements (*well established*) {5.6.2}. Very few operations have achieved “no net loss” or shown that they have the capacity to do so (*well established*) {5.6.2}. Monitoring requires sector-specific metrics linked to targets; yet reporting often lacks data for independent verification (*well established*) {5.6.2}. Analyses should also consider displacement (or “leakage”) of impacts, where actions at one operation shift pressures on biodiversity elsewhere (*well established*) {5.6.2}. In addition, opportunities at the operations level exist for businesses to go beyond impact mitigation to engage in landscape conservation, restoration and sustainable management (*established but incomplete*) {5.5, 5.7.1, 5.7.2}.

Meaningful engagement of stakeholders and Indigenous Peoples and local communities before, throughout and after the closure of business activities is essential to building trust, aligning actions with local and national priorities and recognizing applicable rights (*well established*) {5.6.2.4}. For example, when establishing or significantly changing their activities, businesses should recognize and respect the free, prior and informed consent of Indigenous Peoples and local communities, along with their respective rights in accordance with national legislation.

Indigenous and local knowledge can inform baselines and monitoring, recognize the multiple values of nature and improve the design of mitigation measures and business practices, with long-term socioeconomic and environmental benefits. However, such integration remains rare in practice (*established but incomplete*) {2.7.2, 3.3.1, 4.6.2, 5.6.2}.

B12 Financial institutions can shift finance away from harmful activities and towards business activities with positive impacts on biodiversity (*well established*).

In addition to actions that apply to all businesses, financial institutions can play a pivotal role in fostering business transitions to align with biodiversity goals. The actions and their influence on biodiversity outcomes vary across financial institutions (i.e., lenders, investors and insurers), but all have a role in redirecting financial flows to support biodiversity outcomes. Through “financing green” and “greening

finance” approaches, financial institutions can, respectively, shift capital flows towards business activities with positive impacts and away from businesses with negative impacts on biodiversity and nature’s contributions to people (*established but incomplete*) {5.6.4}.

Financial institutions can establish and communicate the criteria for their decisions to lend to, invest in and insure businesses (*well established*) {5.6.1, 5.6.4}. Decisions taken on the basis of these criteria benefit from information provided by the specific and robust measurement and disclosure of impacts, dependencies, risks and opportunities (*well established*) {4.4.1, 4.4.2, 5.6.4}.

Financial institutions can influence actions across their entire portfolio through capital allocation and stewardship strategies by engaging with clients to align practices with biodiversity targets, exercising voting rights and excluding or divesting from harmful activities (*well established*) {4.1.2, 4.4.1, 5.6.4}. Recognizing the need to support business activities, financial institutions can also engage with businesses to foster actions that improve performance or support the transition of their activities. This is particularly true for places and activities in which both upfront investments and risks are substantial, such as in small- and medium-sized enterprises working towards the conservation and sustainable use of biodiversity (*well established*) {6.4.3}.

In addition to shifting financial flows away from negative activities, financial institutions can deploy instruments and

strategies, such as blended finance, impact investing and green or sustainability-linked bonds, to provide capital to businesses engaged in conserving, restoring or sustainably using biodiversity. Financial institutions can also make contributions to initiatives such as the Global Biodiversity Framework Fund (*established but incomplete*) {5.6.4.5, 5.6.4.6, 5.6.4.7}.

B13 Barriers to businesses and others taking action persist, with considerable variation across national and sectoral contexts (*well established*).

Barriers to action exist for all groups of actors (**Table SPM.4**). These barriers do not affect all actors equally and may disproportionately affect small and medium-sized enterprises and financial institutions in developing countries (*well established*) {5.3.2, 5.4, 5.6}. Action is limited by systemic barriers such as profit-driven business models, as well as economic systems that measure progress in gross domestic product, weak policy incentives, limited access to financial resources, and data or knowledge gaps, including a lack of quantitative and comparable measurements of business impacts (*well established*) {3.6.3, 5.3.2}. Business-led initiatives have emerged to address some of these barriers, but they tend to focus on large companies and may emphasize disclosure over the need to deliver tangible biodiversity outcomes. Unclear and uncertain expectations from consumers, investors and Governments hinder consistent and credible business contributions to global biodiversity goals and targets (*well established*) {5.3.2}.

Table SPM 4 **Examples of barriers to action across components of the enabling environment.**

Component of enabling environment	Barriers to action
Policy and legal 	• Weak or inconsistent biodiversity policies or political will (e.g., lack of ambition or specificity to guide business action) • Lack of regulations mandating the disclosure of biodiversity-related impacts, risks and opportunities • Regulatory fragmentation across jurisdictions • Contradictory regulatory injunctions • Lack of regulations to address nature-related risks in the financial sector • Weak enforcement of rules • Undue influence of negative corporate lobbying • Corruption and illegal activity • Pressure to deliver quick results • Absence of a level playing field
Economics and finance 	• Short-term profit orientation and limited financial incentives to take actions with long-term outcomes • Fiduciary duty limitations – executive mandates that do not include environmental and social considerations • Perverse incentives that do not internalize impacts on biodiversity • Weak or absent penalties for causing biodiversity decline (i.e., no obligation to restore, recover or reverse damage caused) • Limited financial resources for investments to improve outcomes for biodiversity, especially for small- and medium-sized enterprises • Weak capacity to assess the stock and flow of natural capital and to assess the various values (including economic) of ecosystem services • Failure to take negative externalities into account

Table SPM 4

Component of enabling environment	Barriers to action
Values and norms 	• Conflicting priorities of groups in civil society • Weak societal pressure on businesses to provide positive actions for biodiversity or reduce harm to biodiversity • Unclear expectations of business among consumers, investors and Governments • Entrenched organizational culture and fragmented accountability for biodiversity within businesses • Limited custodianship and recognition of the rights of Indigenous Peoples and local communities • Power imbalances that limit or compromise the potential for cooperation among multiple actors
Technology and data 	• Lack of access to technology, data, models and scenarios, knowledge regarding their use and incentives and regulation to increase their uptake • Poor data quality • Inconsistent metrics and proliferation of guidance that creates confusion • Weak data-tracking systems within businesses • Lack of access to scientific information • Absence of methods for businesses to disaggregate global biodiversity goals at a resolution sufficient to support effective decision-making and to enable businesses to act
Capacity and knowledge 	• Limited awareness of impacts and dependencies of businesses on biodiversity (e.g., investor knowledge gaps) • Limited capacity, knowledge and skills for taking effective action • Low uptake of tools by businesses • Lack of visibility and transparency in the operations of businesses and across value chains • Limited information about links between business actions and biodiversity outcomes

Traceability {1.1.2, 1.3, 1.5.2, 2.5.5, 4.5.3, 5.2.2, 5.3.1, 5.3.2, 5.4, 5.6, 6.3, 6.4}

C. Measuring businesses' impacts and dependencies on biodiversity and nature's contributions to people

C1 Many different methods and metrics are available. This diversity is needed to measure the impacts and dependencies of businesses on biodiversity and nature's contributions to people (*well established*).

Different aspects of biodiversity and nature's contributions to people require different metrics and methods of measurement: no single metric or method can be used to measure all impacts and dependencies across all sectors and locations (*well established*) {2.3, 2.4, 3.3, 4.1, 4.2, 4.4}. Methods vary in their ability to capture impacts and dependencies by location, within sectors and along the value chain, and to account for cumulative impacts (**Table SPM.5**) (*well established*) {2.3, 2.4, 3.3}. Methods can be grouped into categories of macro-scale environmental economic models, life-cycle approaches, spatial analysis, participatory mapping and monitoring, and location-based observations (*well established*) {2.3, 3.3, 4.2}. These approaches use different types of metrics for impacts and dependencies, including metrics for assessing the condition and significance of a location in terms of biodiversity (for both species and ecosystems) and metrics for assessing the potential and actual flow of nature's contributions to people and human well-being, reflecting

different values of nature (*well established*) {3.3, 4.2}. Monetary and quantitative and qualitative non-monetary valuation methods, including sociocultural valuation, can be applied in order to understand the consequences of impacts and dependencies for aspects of human well-being (*well established*) {2.3.4, 2.3.5, 3.3, 4.6.1}. Methods are frequently used in combination to improve the accuracy or extend the coverage of measurements (*well established*) {2.4.1, 3.3, 4.2.3}. The choice of methods and metrics used has implications for representing the diverse values of nature (*well established*) {2.3, 2.4, 3.3, 4.3.2, 4.6}.

Methods need to be selected carefully, ensuring their fitness for the individual business purpose for which they are being applied (*established but incomplete*) {4.2, 4.4}. Fitness for purpose depends on coverage, accuracy and responsiveness (*well established*) {2.3, 2.4, 3.3, 4.4}.

The coverage of a method refers both to its geographical coverage and to the extent to which it includes impacts and dependencies on biodiversity and nature's contributions to people (*established but incomplete*) {4.2.1}. To be considered fit for purpose, a method needs to cover all relevant pressure types and impacts and dependencies of a

Table SPM 5 **Examples of applications of methods for assessing business dependencies and impacts.**

Sociocultural and monetary valuation methods, integrated approaches and accounting frameworks can also support assessment of dependencies and impacts (Table 2.2, Table 3.1, 4.6).

Method categories	Dependency assessment examples {Table 2.2}	Impact assessment examples {Table 3.1}
Location-based observations 	Primary data from smallholder farms in South America was used to assess how natural pollination affects coffee fruit set. 	Satellite imagery was used to quantify the direct and indirect impacts of industrial mines on deforestation across the global tropics. 
	Small-scale farmers and fishers used visual surveys to gauge the richness, evenness and relative dominance of species. 	Field sampling was used to measure the abundance and diversity of birds, plants, insects and spiders across crop fields of varying sizes in North America. 
Participatory monitoring and mapping 	Local fishing communities in West Africa, as key stakeholders representing Indigenous Peoples and local communities, collaborated with researchers to map and assess fisheries, revealing how artisanal fishing businesses depend on healthy coastal and mangrove habitats. 	Participatory mapping identified potential impacts of offshore wind farms on local fisheries and marine biodiversity in South America. 
	In South-East Asia, Indigenous Peoples and local communities and a mariculture enterprise co-mapped marine nature's essential contributions to people in order to demonstrate their shared reliance on healthy reefs and mangroves, guiding more inclusive and sustainable resource management. 	Community monitors and scientists collaborated to assess water pollution and its impacts downstream of a coal mine in Southern Africa. 
Spatial analysis 	The acreage of medicinal plant resources in North-East Asia was identified and classified to illustrate industry dependence on specific plant habitats and ecosystem productivity. 	Different potential power line routes were overlaid with environmental and social data layers to measure the routes' impacts on ecologically sensitive and socially complex areas in Southern Africa. 
	Machine-learning models project shifting areas for grape cultivation in Central and Western Europe, highlighting the wine sector's reliance on biodiversity-driven climatic and soil conditions. 	Global modelling of biodiversity and nature's contributions to people was combined with asset locations to quantify the direct impacts of corporate assets from over 2,000 businesses. 
Life-cycle approaches 	Dependency of rice production systems on water provisioning, as well as dependencies on carbon sequestration, water quality and air quality regulation in South Asia, North-East Asia and North America. 	Life-cycle assessment and environmentally extended multi-regional input-output models were combined to estimate biodiversity impacts across a global set of 3,000 businesses. 
		Life-cycle assessment was integrated with spatial modelling to assess the impacts of alternative feedstock sources for bioplastics from South and North America on biodiversity and nature's contributions to people. 
Macro-scale environmental economic models 	Agricultural dependency on pollination was estimated to outweigh the abatement costs of several measures to protect pollinators in Central and Western Europe. 	Nested multi-regional input-output models were used to quantify the impacts of beef production on threatened animal species in Oceania through local and global supply chains. 

Purpose of measurement

 **Screening:** identifying priorities requiring further analysis or action.

 **Tracking potential changes in impacts/dependencies:** measuring change in pressures over time as part of an impact assessment, or the change in reliance of business activities on nature's contributions to people over time as part of a dependency assessment.

 **Comparing options:** evaluating potential impacts and dependencies of business activities relative to alternatives.

 **Observing change in nature:** showing positive or negative changes in biodiversity and nature's contributions to people that can be attributed or linked to business activity or action on biodiversity

business on biodiversity and nature's contributions to people at relevant geographical and temporal scales (*established but incomplete*) {4.2.1}.

Accuracy is the degree to which results correctly describe what they are designed to measure (*established but incomplete*) {4.2.1}. The accuracy necessary for a method to be considered fit for purpose varies by application (*established but incomplete*) {4.2.1}. Many business decisions do not require highly accurate results, provided that the results are directionally correct (*well established*) {4.4}. For example, if a method provides adequate information on the relative biodiversity impacts of two raw materials, it can enable a decision on the choice of one material over the other. Methods based on modelling approaches (e.g., multi-regional input-output modelling, life-cycle approaches and spatial modelling) can sometimes provide a false sense of accuracy not supported by the level of detail of the underlying data or models; these shortcomings can be addressed by the use of data generated through bottom-up methods (e.g., location-based observations and participatory mapping and monitoring) (*well established*) {4.4}. Understanding the limitations of the results of different methods would assist decision makers in avoiding ill-informed or incorrect decisions (*well established*) {4.4}. Guidelines and capacity-building could help businesses to correctly

interpret results from different methods, thereby ensuring that they adequately inform action (*established but incomplete*) {4.5}.

Responsiveness is defined as the ability of a method to link business actions to changes in biodiversity or nature's contributions to people (*well established*) {4.2}. Responsiveness is particularly important for tracking change in pressures as part of an impact assessment, or reliance on biodiversity as part of a dependency assessment, and for detecting changes over time in response to business activities or actions (*well established*) {4.4}. Attribution of observed changes in biodiversity or nature's contributions to people to business activities should use baselines and counterfactuals, and account for time lags, indirect effects and variation in background conditions (*well established*) {4.2, 4.4, 5.2.1}.

C2 Methods exist to support all business decisions, and appropriate methods can be selected according to purpose and decision-making level (*well established*).

Determining the appropriate measurement approaches for different decision contexts requires consideration of the four main purposes of measuring biodiversity (**Table SPM.6**) alongside the four business decision-making

Table SPM 6 **Purposes of measurement and examples of applications.**

Purpose of measurement		Examples of applications
Screening 	Identifying priorities requiring further analysis or action	- Investment portfolios - Products or business lines - Types of material or supply chain - Operational locations
Comparing options 	Evaluating potential impacts and dependencies of business activities or decisions relative to alternatives	- Portfolio manager choosing individual securities for an investment fund - Businesses choosing types of raw material for products or a specific supplier - Businesses assessing the relative impact of proposed new acquisitions - Businesses choosing sites for operations
Tracking change in potential impacts and dependencies 	Measuring the change in pressures over time as part of an impact assessment, or the change in reliance of business activities on nature's contributions to people over time as part of a dependency assessment	- Asset manager tracking changes in the overall biodiversity footprint of an investment portfolio over time - Credit analyst assessing changes in businesses' risk profiles - Businesses assessing changes in their biodiversity footprint - Businesses tracking changes in the extent of potential dependencies on biodiversity and nature's contributions to people
Observing changes in biodiversity 	Noting positive or negative changes in biodiversity and nature's contributions to people that can be linked to business activities or action on biodiversity	- Businesses measuring changes in ecosystems at a site - Businesses measuring changes in nature's contributions to people linked to operations - Governments measuring the extent and quality of ecosystems in an agricultural landscape - Non-governmental organizations measuring changes in species populations

levels (**Figure SPM.6**). Location-based observations (including relevant maps and remote sensing) can inform biodiversity assessments at the operations level for all business purposes, often with existing data, but may require significant data gathering to inform decisions requiring greater geographical coverage (e.g., decisions that affect value chains, corporate strategies and portfolios) (*well established*) {4.4}. As a result, decisions at those levels often rely on aggregate metrics and proxies (*well established*) {4.4}. Bottom-up methods, such as location-based observations and participatory mapping and monitoring, that make use of primary data collection to populate a wide set of metrics and integrate local specificities can effectively represent the diverse values of nature (*well established*) {4.4}. Aggregate metrics,¹⁹ which are outputs of top-down model-based methods, are not appropriate for measuring changes in biodiversity

19. Such as “mean species abundance” or “potentially disappeared fraction of species”.

outcomes at specific sites, for decisions affecting specific sites or for selecting specific investments (*well established*) {4.4}.

C3 Business uptake of impact and dependency measurements and disclosure is currently limited (*well established*).

While many methods of measuring impacts and dependencies are available, a lack of necessary internal capacity or financial resources may limit the ability of businesses to apply them, with implications for equity and participation across countries and actors (*established but incomplete*) {4.5.3, 5.3.2}. Business uptake may be limited by the perceived complexity of biodiversity and nature's contributions to people, which cannot easily be measured by a single approach or metric, but requires a combination of multiple methods and metrics (*established but incomplete*) {4.5.3}.

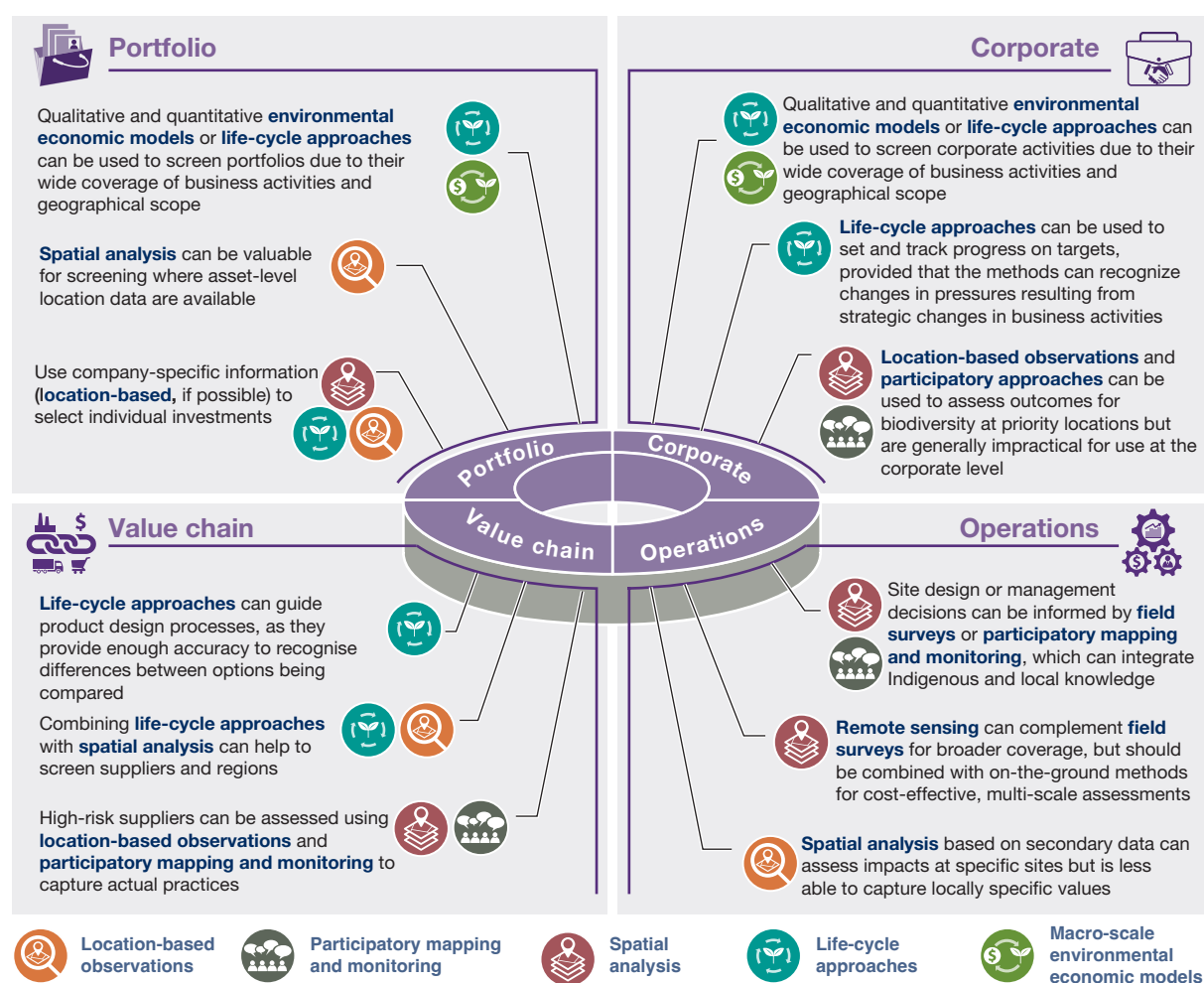


Figure SPM **6** **Examples of appropriate measurement approaches at different decision-making levels.**

Less than 1 per cent of publicly reporting companies mention their impacts on biodiversity in their reports, although the number doing so is growing in response to recent reporting and disclosure standards and frameworks (*well established*) {4.5, 5.4}. Factors limiting measurement and reporting include motivational, institutional and resource-related barriers (*well established*) (Table SPM.4) {4.5.3}. Biodiversity impact and dependency assessments require expertise and can be costly to perform (*established but incomplete*) {4.5.1, 5.3.2}. There are currently few incentives for businesses to measure and disclose their impacts and dependencies (*established but incomplete*) {4.5.3}. Business uptake is influenced by regulatory demands, financial factors and reputational considerations. Sectors subject to site-level regulations, such as mining, conduct more biodiversity impact assessments than other sectors (*well established*) {4.5.3}. Financial institutions report more often than other sectors, likely driven by the existing and anticipated regulatory requirements mandating disclosures related to biodiversity and climate change (*well established*) {4.5.3}. Larger uptake could also be explained by the availability of tools created specifically for the financial sector (*established but incomplete*) {4.5.3}.

High-profile dependency assessments at the portfolio level have been conducted by central banks and financial institutions in an effort to understand exposure to nature-related financial risk (*well established*) {2.5.3, 4.2.4}. Central banks in at least eight countries and the European Central Bank have analysed the exposure of financial institutions to dependencies on biodiversity through their financing activities (*well established*) {2.5.3}. The analyses have raised awareness in the financial sector (*well established*) {2.5.3, 4.5.3}. However, those analyses do not differentiate between investments within sectors, consider the capacity of ecosystems to provide nature's contributions to people, or address change over time. To date, there has been limited uptake of the outputs of those assessments (*well established*) {2.5.3, 2.5.5, 4.5.3}. A recent survey among financial institutions representing 30 per cent of global market capitalization revealed that the three most-cited barriers to the uptake of nature-related risk assessment and management are access to reliable data, access to reliable models and access to scenarios (*established but incomplete*) (Table SPM.4) {2.5.5}.

C4 Site-specific location and activity data are needed for operations and value chains to improve impact and dependency assessments (*well established*).

Because the impacts and dependencies of businesses on biodiversity are site-specific, information on the location of business activities and assets and on sourcing locations is needed to accurately measure the impacts and dependencies of business operations and value chains

(*well established*) {2.2, 2.3, 2.4, 3.2, 3.3, 4.3, 4.4, 4.5.1, 4.5.2}. While some data exist that can assist operations-level decision-making, there are gaps in the availability and accessibility of those data and information on the origin of input materials (including genetic resources) used by specific businesses, especially in value chains. The gaps are due to traceability limitations, as many resources are traded and exchanged multiple times along the value chain (*well established*) {2.3, 4.4.4, 5.3.2, 5.6.2, 5.6.3}. Such knowledge gaps present a significant barrier to efforts by businesses to understand the full scale of impacts along their value chains, reducing the visibility of risks and inhibiting action to support improved practices at specific locations (*established but incomplete*) {4.4.3, 5.3.2, 5.6.3, 5.6.4.2}. To go beyond screening and begin measuring outcomes, information on practices (e.g., agricultural practices, mining methods and manufacturing techniques) at specific sites is also needed (*established but incomplete*) {4.4}. Currently, information on locations and associated management practices is not commonly collected or reported (*well established*) {4.4, 4.5}.

C5 Consistent scenario planning with regard to impacts and dependencies on biodiversity and nature's contributions to people can be used for coherent analysis of risks and opportunities (*established but incomplete*).

Scenarios offer an opportunity for businesses to plan for possible futures and gain information about potential risks and opportunities arising from changes in biodiversity and nature's contributions to people (*well established*) {3.6.2, 4.2.4}. Uptake of scenario planning, however, remains low at all scales (*well established*) {4.2.4}. Information on likely future biodiversity trends and a variety of scenarios and models exist and could be used by financial institutions to take forward-looking decisions and predict future performance (*well established*) {2.2, 2.4.2, 2.5.5, 4.2.4}. Efforts to analyse short-term scenarios for extreme events, such as a complete loss of nature's contributions to people, including ecosystem services, are addressed in stress testing by some central banks (*established but incomplete*) {2.5.5, 4.2.4}. Scenarios can also be used to analyse long-term systemic risks for the whole economy resulting from biodiversity decline, including tipping points and cascading effects (*established but incomplete*) {2.4.5}.

C6 Actionable guidance is needed for measuring business dependencies on biodiversity and nature's contributions to people (*well established*).

Many methods for measuring biodiversity and nature's contributions to people could be applied to the assessment of business dependencies. Their uptake and inclusion in business-focused tools is limited, especially for nature's contributions to people (*well established*) {4.5, 5.3.2, 5.4}.

In contrast, many of the tools and associated guidance that are applicable to business could also be used to assess impacts (*well established*) {3.3.2, 4.5}. Some available methods provide high-level dependency assessments of businesses and financial portfolios based on industry average information (*well established*) {4.2.3, 4.4}. Such assessments have been applied to screen potentially material dependencies (*established but incomplete*) {4.5}. Methods and metrics that measure nature's contributions to people by location could be used for dependency analyses of operations and value chains, especially in relation to material contributions; nevertheless, readily available methods for use by businesses are lacking for many non-material and regulating contributions (*well established*) {4.2.2}. A need remains for approaches that can be easily applied across business operations, considering the location-specific availability and delivery of the full range of nature's contributions to people (*established but incomplete*) {4.4}.

C7 Businesses can learn from Indigenous and local knowledge and fairly and equitably share benefits with Indigenous Peoples and local communities (*established but incomplete*).

Indigenous Peoples and local communities hold extensive knowledge on biodiversity and its values, conservation, restoration and sustainable use (*well established*) {2.3.3, 2.3.7.1, 4.3.1}. There are examples of partnerships between businesses and Indigenous Peoples and local communities to develop new products and services that document and preserve Indigenous and local knowledge, share benefits fairly and equitably, and respect the rights of Indigenous Peoples and local communities, in accordance with national legislation (*well established*) {2.7.2}. However, those products and services have often not been recognized by profit-driven businesses (*established but incomplete*) {2.3.3, 2.7.1, 3.3.3, 4.3.1}. Approaches for measuring the impacts of business on biodiversity and nature's contributions to people generally do not adequately measure impacts on Indigenous Peoples and local communities or interweave business knowledge with Indigenous and local knowledge (*established but incomplete*) {3.3.3, 4.3.1}. The fact that most approaches are based on anthropocentric world views and instrumental values, rather than biocentric or pluricentric world views, influences the interpretation of business impacts and dependencies (*well established*) {4.3.2}. To improve engagement with Indigenous Peoples and local communities, businesses should recognize and respect the free, prior and informed consent of Indigenous Peoples and local communities, along with their respective rights, in accordance with national legislation (*established but incomplete*) {2.3.3, 2.7.1, 4.3.1, 5.2.2}. Businesses can improve their approaches by learning from businesses of Indigenous Peoples and local communities that have business models with clear social and ecological benefits,

and ways of working that respect reciprocal people-nature relationships {2.7.2, 4.3.1, 5.7.3}. Collaboration between academia and Indigenous Peoples and local communities can help to interweave Indigenous and local knowledge, where appropriate. While this is occurring in some places, it rarely informs business assessments (*established but incomplete*) {4.3.1, 5.7.3}.

C8 Filling gaps in knowledge and its application can make the measurement of business impacts and dependencies on biodiversity more robust and relevant to decision-making (*well established*).

Knowledge gaps in the measurement of business impacts and dependencies can be identified across five broad areas: (a) business-relevant data; (b) completeness of evidence; (c) applicability of methods; (d) data accessibility and transparency; and (e) adoption of methods (**Table SPM.7**). Addressing each of these knowledge gaps would significantly improve applicability by businesses and improve business accountability. In relation to the needs and shortcomings in data, uptake and methods identified in this assessment, a core set of gaps in knowledge and practice exist, including low adoption of methods in business action (C3), gaps in business location and activity data (C4), a lack of consistent scenarios for biodiversity (C5), a lack of actionable guidance for measuring dependencies (C6), and insufficient interweaving of Indigenous and local knowledge (C7). Addressing these knowledge gaps will require coordinated public and private investment. Furthermore, a balance between the scientific rigour of measurements and the affordability and applicability of methods by businesses is also required in order to support business actions effectively. Closing these knowledge gaps would allow methods to be applied to a wider set of decision contexts, increase consistency in comparisons across businesses, portfolios and countries, and enable further action by businesses and financial institutions (**Table SPM.2**).

Table SPM 7 **Gaps in knowledge and its application.**

Categories of knowledge gaps	Description
1. Business-relevant data Gaps characterized by a lack of data or standardized data, and gaps in data on specific topics or that meet specific criteria	Lack of consistent, self-reported, comprehensive data and information on dependencies and risks that are spatially and temporally specific to individual sectors or businesses, including data gathered by financial institutions (i.e., investors, lenders and insurers) in connection with their investees and clients {2.2, 2.5, 4.4, 5.3.2} Lack of granular, linkable data on locations of business activities across value chains and portfolios, which would enable spatial analysis of impacts and dependencies alongside biodiversity data {2.7, 3.3, 3.4, 4.4, 5.3.2, 5.6.3} Lack of data and models, including data to support baseline studies, especially in remote areas, on understudied subjects (e.g., invertebrates, soil organisms, marine ecosystems and genetic diversity), or on the functioning and capacity of ecosystems to provide nature's contributions to people {2.3, 4.2.2, 5.3.2} Lack of baseline data on the socioeconomic, cultural and environmental conditions of Indigenous Peoples and local communities, or on specific impacts on different subgroups within communities, such as women, children and older persons, prior to starting business activities, against which mitigation measures could be assessed {2.7, 3.6} Lack of data from remote-sensing tools and technology for monitoring land and sea use and changes therein, and on business activities affecting biodiversity and nature's contributions to people {6.3.4} Lack of scenarios and time series data over sufficiently long periods to show the effect of actions by businesses and others (including changes in policy) on biodiversity outcomes across national and subnational economies {5.2.3, 5.3.2, 5.5, 6.3.1, 6.3.2}
2. Completeness of evidence Gaps characterized by missing or underdeveloped scientific information and by a lack of availability of Indigenous and local knowledge	Incomplete knowledge within businesses of their impacts and dependencies on biodiversity and nature's contributions to people, including in relation to how biodiversity loss translates into business risk and informs action. Beyond economic value and productivity, knowledge is lacking on sociocultural valuation, relational values, quality, sustainability, trends and risk of loss {2.5, 2.8, 4.5, 4.6, 5.3.2} Insufficient evidence to identify and prioritize the actions needed to incentivize businesses with the greatest responsibility for and influence on biodiversity and nature's contributions to people to perform the most impactful actions {5.6, 5.7} Gaps in knowledge, data and documentation on species that are important to Indigenous Peoples and local communities and information on the rights and knowledge of Indigenous Peoples and local communities relating to benefits arising from the use of genetic resources, with due respect for free, prior and informed consent, in accordance with national legislation {6.3.4, 6.3.5} Gaps in knowledge about mechanisms linking transparency and risk disclosure (including visibility of failures) to improved biodiversity performance and outcomes, and about the conditions under which disclosure drives action {5.4, 5.6, 5.7} Inadequate understanding of ecological thresholds, tipping points and feedback loops and their links to the impacts of business on biodiversity {3.2} Insufficient studies on the effectiveness of and attitudes towards mechanisms, including economic and financial instruments, which are designed to shift financial flows away from industries that harm biodiversity and which consider how investments drive biodiversity loss {6.3.2} Limited verified and comparable case examples of business actions covering motivations, barriers, impacts and outcomes, and the factors underpinning success or failure to enable shared learning and improvement {5.5, 5.6, 5.7} Insufficient studies on methods that can be considered robust and are most useful for particular business contexts, including comparisons of the potential for different methods to influence both biodiversity outcomes and business practices {4.5, 4.6} Gaps in knowledge of the full array of impacts of business activities (including through the management of dependencies) on Indigenous Peoples and local communities in relation to biodiversity impacts and businesses' responses to biodiversity loss {2.7, 4.3.1, 4.5} Insufficient studies on the effectiveness in delivering positive outcomes of different mechanisms and types of action implemented by businesses and others, including mechanisms such as environmental and social impact assessments, certification schemes, behaviour change, partnerships and collaboration, and the effectiveness of policy implementation {5.6, 5.7, 6.3} Insufficient studies quantifying the indirect positive and negative impacts of businesses on biodiversity, including the pathways by which those impacts occur {3.2} Insufficient studies of synergistic effects, interactions and trade-offs between different business impacts on cultural significance and spiritual values and of their socioeconomic implications, including assessing cumulative impacts on Indigenous Peoples and local communities and rural and urban poor communities, and designing effective mitigation measures {3.6}

Table SPM 7

Categories of knowledge gaps	Description
3. Applicability of methods Gaps characterized by the inability of existing methods or aspects of existing methods to address fundamental components of the relationship between business and biodiversity in the context of business decisions	Insufficient approaches to addressing shortcomings in biodiversity accounting practices, such as the need to interlink management, financial and ecosystem/landscape accounts to provide specific, time-bound and measurable indicators for monitoring purposes, and to reflect biocentric or pluricentric world views {4.6}
	Insufficient approaches to appropriately incorporate or interweave Indigenous and local knowledge and the values and world views of Indigenous Peoples and local communities, and to support the participation of such knowledge holders, with their free, prior and informed consent, in accordance with national legislation {2.4, 2.7, 3.3, 3.6, 4.3.1, 4.6.2, 5.6, 5.7, 6.3.3}
	Lack of consistent scenario data and established modelling approaches for biodiversity-related risks to support consistent application and comparison of methods. Specifically, long-term futures are missing or not applied consistently and comprehensively in the identification of sustainable business strategies {2.4, 3.6, 4.6.1}
	Methodological challenges in using standardized business-relevant indicators and metrics for biodiversity-related dependencies, risks and opportunities {2.4}
	Lack of robust, standardized approaches to independent verification of businesses' claims about their contributions to, and delivery of outcomes for, biodiversity and nature's contributions to people {5.3.2, 5.6, 5.7.1, 5.7.2}
	Insufficient methods and data to translate and disaggregate global biodiversity goals into business-level, outcomes-based, time-bound targets at decision-relevant scales {5.2.2, 5.3.2, 5.6, 5.7}
	Insufficient applicability of methods across scales, for example to support financial institutions in using modelled data to assess portfolios and perform more detailed/local-level studies of dependencies {4.4.1, 5.6.4.2}
	Challenges in ensuring that methods can combine diverse data while balancing ecological, economic and social trade-offs; in fully reflecting the contributions of natural, produced, social and human capital to business activities; and in providing sufficient spatial and temporal detail {2.2, 2.3, 2.4}
	Lack of methods that go beyond species richness and other coarse measures to incorporate information on understudied species groups and measures of functional or genetic diversity {4.2.2}
	Lack of methods that can take into account different types of land use and reflect differences in the intensity of land use to support impact-related decision-making {4.4}
4. Data accessibility and transparency Gaps characterized by insufficient flows of information, knowledge or science among groups	Lack of clear consensus among consumers, investors and Governments on what constitutes an appropriate and credible business contribution to halting and reversing global biodiversity loss and securing nature's contributions to people {5.2.2, 5.3.2}
	Existing knowledge on biodiversity and nature's contributions to people is not accessible to all levels of the business community, including within businesses. This includes data gathered by businesses through their monitoring programmes {5.3.2, 4.5.4}
	Existing knowledge about the diverse contexts and specific characteristics of various Indigenous Peoples and local communities, including knowledge of their distinct cultural and ecological histories, unique livelihoods, world views and traditional practices, is not accessed by or accessible to businesses {4.5, 6.3.5}
	Existing knowledge about scientifically agreed/recommended methodologies is not accessed by or accessible to businesses, resulting in a disconnect between the needs of businesses to adhere to such methodologies and their applicability, availability and accessibility {4.5}
	Existing knowledge across businesses of their respective impacts and dependencies is typically not connected or visible to all relevant decision makers along the value chain {4.4, 4.5, 5.3.2, 5.6.3}
5. Adoption of methods Gaps characterized by low uptake of approaches and knowledge within specific contexts	Available sociocultural methods are not often used and are difficult to standardize and scale for business use and benchmarking {2.3, 3.3}
	Gaps characterized by low uptake of approaches and knowledge within specific contexts
	Available academic methods are only partially reflected in tools aimed at businesses; those tools and the associated data are fragmented and sometimes inaccessible {2.3, 3.3}
	Limited guidance and support for small and medium-sized enterprises to overcome acute capacity and resource barriers to act to address their biodiversity impacts and dependencies and to collaborate and partner with other actors in order to amplify their outcomes {5.3.2, 5.4, 5.7.3}
	Limited knowledge, data and documentation on Indigenous Peoples and local communities, and on their respective rights in accordance with national legislation; and in relation to benefits arising from the use of genetic resources, with due respect for free, prior and informed consent, in accordance with national legislation {6.2.2}

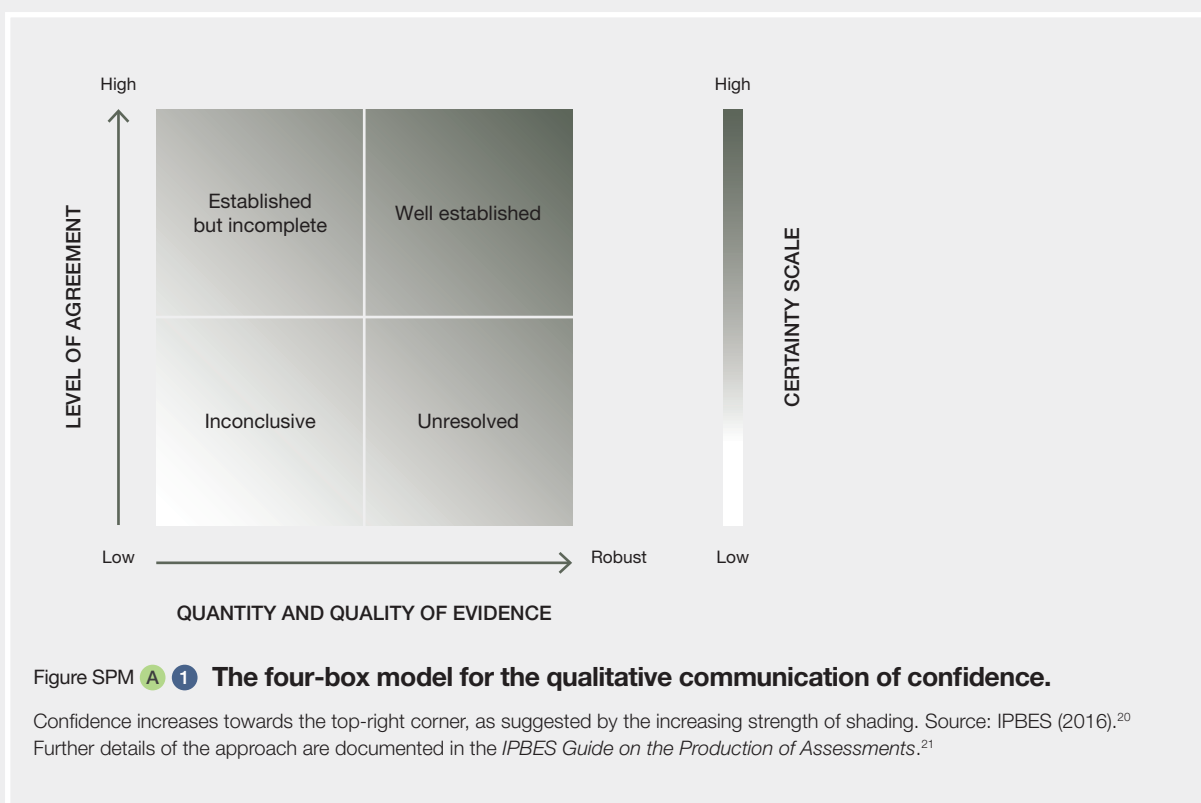


A low-angle, upward-looking shot of a modern skyscraper with a glass facade. The building's structure is composed of a grid of dark metal frames and reflective glass panels. The sky is visible through the glass, showing a clear blue with some light clouds. The perspective creates a sense of height and scale. The word "APPENDIX" is overlaid in the center in a large, white, sans-serif font.

APPENDIX

APPENDIX

Communication of the degree of confidence



In the Methodological Assessment of the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People, the degree of confidence in each main finding is based on the quantity and quality of evidence and the level of agreement regarding that evidence (Figure SPM.A1). The evidence includes data, theory, models and expert judgment.

- **Well established:** There is a comprehensive meta-analysis or other synthesis or multiple independent studies that agree.
- **Established but incomplete:** There is general agreement, although only a limited number of studies exist; there is no comprehensive synthesis, and/or the studies that exist address the question imprecisely.
- **Unresolved:** Multiple independent studies exist but their conclusions do not agree.
- **Inconclusive:** There is limited evidence and a recognition of major knowledge gaps.

20. IPBES (2016): *Summary for Policymakers of the Assessment Report on Pollinators, Pollination and Food Production of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Potts, S. G., Imperatriz-Fonseca, V.L., Ngo, H.T., Biesmeijer, J.C., Breeze, T.D., Dicks, L.V., Garibaldi, L.A., Hill, R., Settele, J., Vanbergen, A.J., Aizen, M.A., Cunningham, S.A., Eardley, C., Freitas, B.M., Gallai, N., Kevan, P.G., Kovács-Hostyánszki, A., Kwapong, P.K., Li, J., Li, X., Martins, D.J., Nates-Parra, G., Pettis, J.S., Rader, R., and Viana, B.F. (eds.). IPBES secretariat, Bonn, Germany. <http://doi.org/10.5281/zenodo.2616458>.

21. IPBES (2018): *IPBES Guide on the Production of Assessments*. Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. Available at: <https://ipbes.net/guide-production-assessments>.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

is the intergovernmental body which assesses the state of biodiversity and ecosystem services, in response to requests from Governments, the private sector and civil society.

The mission of IPBES is to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.

The IPBES Plenary has a collaborative partnership arrangement with UNEP, UNESCO, FAO and UNDP. Its secretariat is hosted by the German Government and located on the UN campus, in Bonn, Germany.

Scientists from all parts of the world contribute to the work of IPBES on a voluntary basis. They are nominated by their government or an organization, and selected by the Multidisciplinary Expert Panel (MEP) of IPBES. Peer review forms a key component of the work of IPBES to ensure that a range of views is reflected in its work, and that the work is complete to the highest scientific standards.

INTERGOVERNMENTAL SCIENCE-POLICY PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES (IPBES)

IPBES Secretariat, UN Campus

Platz der Vereinten Nationen 1, 53113 Bonn, Germany

Tel. +49 (0) 228 815 0570

mea-ipbes-secretariat@un.org

www.ipbes.net



Food and Agriculture
Organization of the
United Nations

