



Agricultural standards and Nature Positive

Assessing standards relevant to buyers of natural ingredients against biodiversity criteria

Medha Bhasin and Florence Curet



INTERNATIONAL UNION FOR CONSERVATION OF NATURE, BUSINESS AND NATURE TEAM

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Executive summary

Assessing agricultural standards for biodiversity conservation and Nature Positive

Agricultural standards and associated certification schemes can play a critical role in mainstreaming biodiversity conservation within farming practices. However, the diversity of standards and criteria makes it difficult to understand how effective they are in raising ambition for biodiversity conservation and delivering contributions to the Kunming–Montreal Global Biodiversity Framework (KMGBF).

To address this, 11 voluntary standards relevant to dsm-firmenich's supply chains – and other buyers of natural ingredients across sectors – were assessed against biodiversity-specific criteria. This assessment aims to guide dsm-firmenich and other companies in understanding which criteria are important to deliver Nature Positive outcomes and how standards align with them. Additionally, the assessment aims to help standard bodies enhance their frameworks in alignment with the Nature Positive goal to halt and reverse nature loss by 2030 and achieve full recovery by 2050.

Methodology

Biodiversity encompasses ecosystems, species, and genetic diversity. Due to the complexity and breadth of biodiversity components, a representative subset of criteria were selected for evaluation. It built upon a framework developed by the IUCN National Committee of The Netherlands, which assessed standards across eight themes:

- ❑ Four themes addressing key biodiversity threats: habitat loss and degradation, habitat fragmentation, direct species mortality, and climate change; and
- ❑ Four themes addressing categories of response: biodiversity conservation measures and processes, legality, restoration, and community engagement.

Four more themes were added to capture recent developments in the biodiversity agenda since 2020, that being whether the standards address: (i) biodiversity and climate change in an integrated manner; (ii) access and benefit-sharing; (iii) the principles of no deforestation, no peat, and no exploitation (NDPE); and (iv) strategic oversight mechanisms for biodiversity governance.

In total, the standards were evaluated against 34 questions spanning these 12 themes, that sets the frame of important criteria for Nature Positive outcomes. This enables the study to provide insights relevant to dsm-firmenich, its suppliers and other buyers of natural ingredients across sectors, on the practices featured in these standards which can aid the agricultural sector in moving closer to Nature Positive. However, each standard has its own purpose and scope, and all questions may not apply equally to them. Therefore, the study does not seek to provide any definitive conclusions on which standard is the 'best' for biodiversity conservation.

Additionally, while this study focuses on agricultural practice, where ingredients are sourced from wild ecosystems rather than cultivated systems, companies should apply dedicated governance mechanisms addressing categories such as sustainable harvest, species conservation, and community stewardship.

Key findings

Standards varied in alignment with criteria. Analysis of the standards was broken down into three broad groups:

- ❑ Group 1: This group includes Roundtable Sustainable Palm Oil (RSPO), Rainforest Alliance, UEBT, and Fair for Life. These standards were typically developed in collaboration with conservation organisations

or with environmental protection as a key driver of the standards' creation. They demonstrated comprehensive coverage across biodiversity themes, especially regarding biodiversity conservation processes, addressing habitat loss and access and benefit-sharing.

- ❏ Group 2: This group features LEAF Marque, Fairtrade (Hired Labour and Small-scale Producer Standards), SAI Platform's Farm Sustainability Assessment (FSA) Self-Assessment Questionnaire, and the GlobalG.A.P. BioDiversity add-on. These standards showed strength in biodiversity and habitat conservation measures, but tended to be less comprehensive in addressing climate change and legal frameworks. Fairtrade standards excelled in community engagement.
- ❏ Group 3: This group features the organic standards Bio Suisse and Naturland which focus, by design, on the control of inputs more than on direct biodiversity conservation measures on-farm. The two standards show differences in how they align with biodiversity criteria, but both are more demanding than EU organic Regulation 2018/848 on biodiversity provisions and share strength in integrating safeguarding provisions for High Conservation Value (HCV) areas.

Recommendations for dsm-firmenich and its suppliers and other buyers of natural ingredients across sectors

Four key recommendations are put forward to dsm-firmenich, its suppliers and other companies working with natural ingredients and committed to forward biodiversity conservation:

- ❏ **Prioritise standards with a strong biodiversity focus:** in this study, Rainforest Alliance, RSPO, UEBT and Fair for Life align well with most biodiversity criteria and fall in this category.
- ❏ **Use complementary standards to maximise biodiversity and social outcomes:** For example, pairing Rainforest Alliance or UEBT with Fairtrade standards can help combine biodiversity conservation with strong community engagement and smallholder inclusion.
- ❏ **Consider additional procurement requirements to address gaps in standards:** Companies should consider the relative weaknesses in the standards' biodiversity provisions and determine whether to set additional measures through independent procurement requirements to address these gaps.
- ❏ **Engage to improve standards:** Companies should use their influence as standard users to push for stronger biodiversity provisions – especially around under-addressed threats like fire and anthropogenic introduced disease.

Recommendations for standard-setting bodies

The analysis also identified thematic gaps in biodiversity provisions and offers 14 recommendations to strengthen how standards could deliver on biodiversity criteria and contribute to a Nature Positive future, including:

- ❏ **Support landscape approaches towards Nature Positive:** Biodiversity does not adhere to administrative limits; standards should consider how landscape-scale approaches in collaboration with neighbouring land users and stakeholders can be encouraged to maximise users' contributions to the Nature Positive goal.
- ❏ **Include species provisions:** A limited number of standards include criteria related to the protection of rare, threatened, or endangered species. Species provisions could be included alongside provisions that already exist on deforestation and conserving ecosystems.
- ❏ **Promote habitat connectivity:** Connectivity is essential for biodiversity to flourish and remain resilient. Standards could learn from RSPO and the G.A.P. BioDiversity add-on in encouraging the establishment of ecosystem corridors and preventing habitat fragmentation on and off-farm.

- 📌 **Comprehensively address threats to biodiversity:** Management of fire and anthropogenic introduced disease risks are less well integrated into the standards than other threats. Provisions with regards to these two areas could be strengthened across the standards examined.
- 📌 **Improve consideration of local and customary laws:** More standards should integrate consideration of the biodiversity knowledge and practices embedded in Indigenous Peoples and local communities' customary laws.
- 📌 **Require geospatial (polygon) data:** Polygon data is becoming increasingly essential in monitoring and reporting on biodiversity outcomes. Standards should take inspiration from Fairtrade and Rainforest Alliance and encourage geo-mapping of risk areas.
- 📌 **Strengthen strategic oversight mechanisms:** Strong biodiversity outcomes depend on clear ownership and senior-level accountability. Standards should require the designation of a qualified biodiversity focal point and stipulate that this individual reports to senior management, where appropriate.

Standards are vital tools – but not silver bullets – in the effort to conserve biodiversity. They must be complemented by legislation, education, capacity building, and integrated landscape planning, among other measures, to advance the sustainable and just transformation of global agricultural systems. In line with this, the report encourages the use of standards as one piece of the puzzle, within a broad mix of governance measures to increase sustainable agricultural production. Standards must be practical and implementable with a balance struck between rigour and feasibility. Nevertheless, as the pressure to demonstrate Nature Positive outcomes increases, improvements in the biodiversity integrity and impact of standards, along with other measures, will be vital to ensuring standards can meet the rising expectations of consumers, companies, and policymakers alike.

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Acronyms

ABS	Access and benefit-sharing
CBD	UN Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	Environmental Impact Assessment
ESG	Environmental, social, and governance
LEAF	Linking Environment and Farming Marque
FPIC	Free and Prior Informed Consent
KMGBF	Kunming-Montreal Global Biodiversity Framework
GHG	Greenhouse gas
HCS	High Carbon Stock
HCV	High Conservation Value
HCVRN	High Conservation Value Resource Network
IPCC	Intergovernmental Panel on Climate Change
IPLCs	Indigenous Peoples and local communities
IPM	Integrated Pest Management
IUCN	International Union for Conservation of Nature
IUCN NL	IUCN National Committee of The Netherlands
NbS	Nature-based Solutions
NGO	Non-governmental organisation
NDPE	No deforestation, no peat, and no exploitation
RSPO	Roundtable Sustainable Palm Oil
RTE SPECIES	Rare, threatened or endangered species
SAI FSA SAQ	SAI Platform's Farm Sustainability Assessment (FSA) Self-Assessment Questionnaire (SAQ)
UEBT	Union for Ethical BioTrade



Cocoa growing in the agroforest system in Western Ghana (region of the Upper Guinean Rainforest)

IUCN Photo Library © Johannes Förster

About the dsm-firmenich-IUCN collaboration

dsm-firmenich is a Swiss company focused on innovation in nutrition, health, and beauty, with operations in almost 60 countries and revenues of more than EUR 12 billion. The company states it “reinvents, manufactures, and combines vital nutrients, flavors, and fragrances for the world’s growing population to thrive” (dsm-firmenich, 2025). While in the process of understanding its nature dependencies, impacts, risks, and opportunities with regards to its raw materials, dsm-firmenich is exploring ways to protect, conserve, and restore biodiversity along its value chain. This effort aims to contribute to the global targets set under the United Nations Convention on Biological Diversity (CBD) through the Kunming-Montreal Global Biodiversity Framework (KMGBF).

IUCN supports businesses in adopting nature positive approaches and practices, with the objective to halt and reverse biodiversity loss, contribute to the implementation of the Sustainable Development Goals and the KMGBF, and benefit nature and human well-being. IUCN has a dedicated programme on sustainable food and agricultural systems. This programme seeks to catalyse a transition to food and agricultural systems that are sustainable, resilient, equitable, and Nature Positive. The programme focuses on providing science and knowledge to guide decision-making, fostering inclusive and rights-based governance, and promoting agroecological and regenerative approaches that contribute to biodiversity conservation, climate resilience, and food and nutrition security.

IUCN has a history of collaboration with the Swiss fragrance and taste company Firmenich before its ‘merger of equals’ with the Dutch health, nutrition, and bioscience company DSM, to form dsm-firmenich.

A key objective of the collaboration was for IUCN to support dsm-firmenich in developing its nature programme. In this context, IUCN conducted the present analysis of relevant standards for dsm-firmenich and its suppliers. The goal is to explore ways for dsm-firmenich’s raw materials suppliers – both on-farm and off-farm – to adopt best practices for biodiversity conservation, as well as to inspire other businesses aiming to integrate biodiversity conservation into their value chains.



Picking tea leaves
Unsplash/Nilotpal Kalita

1 Introduction

Agriculture, biodiversity, and climate change are inherently interconnected. When agricultural practices are unsustainable, they can be major drivers of biodiversity loss, contributors to climate change, and a threat to traditional livelihoods (IPBES, 2019). This is primarily due to land-use change, overexploitation of natural resources, and inefficient production and waste management. Conversely, biodiversity loss, exacerbated by climate change, reduces the diversity of domesticated plant and animal varieties and breeds, thereby undermining the resilience of agricultural systems and posing a serious threat to global food security (Purvis, et al., 2019). Over the 20th century, approximately 75% of plant genetic diversity have been lost, according to FAO (2004), as farmers transitioned to genetically uniform, high-yielding varieties. Recent FAO (2025) reports confirm that genetic diversity remains under severe threat, with more than 40% of surveyed plant taxa lost from at least one of their previous habitats. Today, 25% of animal and plant species assessed face extinction (IPBES, 2019).

Despite this bleak picture, sustainable agricultural and collection practices have the potential to combine production imperatives with the safeguarding of native species and habitats and ecological restoration. Transforming agricultural practices to align with these goals requires the integration of diverse approaches, including integrated pest and nutrient management, organic agriculture, agroecological practices, soil and water conservation, regenerative agriculture, irrigation management, and practices to improve animal welfare (Chatterjee et al., 2024). Similarly, responsible wild harvesting systems can create economic incentives for ecosystem protection while maintaining viable populations of wild species.¹

One mechanism to aid such a transformational shift is the use of voluntary sustainability standards. These

standards can play a pivotal role in mainstreaming biodiversity conservation within agricultural systems.

However, with a multitude of existing standards on offer, it is often challenging to discern which are effective and show best practice in a mix of measures. The adoption of voluntary standards also carries inherent costs for companies; therefore, it is crucial to maximise the associated benefits.

The objective of this study is to assess a set of standards relevant for dsm-firmenich, its suppliers, and more broadly for buyers of natural ingredients across sectors, against biodiversity criteria, to identify best practice in standards effectively supporting contributions to Nature Positive. This work primarily intends to support companies in navigating the wide offer of standards. A secondary objective is to provide guidance to standard bodies in refining provisions and practices to better support the Nature Positive goal.²

Described in [chapter 2](#), the methodology builds on a similar study by IUCN National Committee of The Netherlands (IUCN NL). For the purpose of that study, 12 key themes were selected to evaluate standards that capture key threats to biodiversity, as well as key categories of actions required to combat biodiversity threats and enhance biodiversity. A total of 11 voluntary standards, representing those relevant for dsm-firmenich and its suppliers and more broadly for buyers of natural ingredients across sectors, were assessed against the set criteria.

[Chapter 3](#) presents the results and conclusions of this study, broken down by theme. The report concludes in [chapter 4](#) with a series of recommendations aimed at enhancing the biodiversity provisions of the standards assessed and providing recommendations to companies when faced with selecting standards.

¹ For further information on wild collection practices and Nature Positive, see [Box 3](#).

² NPI defines Nature Positive as “a global societal goal defined as ‘Halt and Reverse Nature Loss by 2030 on a 2020 baseline and achieve full recovery by 2050” (NPI, 2023, p. 1).



Orange tree blossom, Iran
Unsplash/Muhammad Ali Khoshkerdar

2 Methodology

2.1 Selecting standards

Table 1 presents the 11 voluntary standards which were examined in this study. The list captures the standards relevant for dsm-firmenich and its suppliers, and more broadly for buyers of natural ingredients across sectors.

RSPO is the only standard selected which is focused on a singular commodity – palm oil. The standard was selected because palm oil is a critical raw material for buyers of natural ingredients across sectors. Its derivatives are commonly used across these sectors for functional and formulation purposes. RSPO is the most used standard across these industries where palm oil production and processing are concerned (Schlösser & Walter, 2020). The other 10 standards intend to apply to a wide range of commodities and products.

Most of the standards have a wide geographical scope, apart from Naturland and Bio Suisse, the former being only relevant for products whose destination is Germany. Likewise, Bio Suisse only relates to products whose destination is Switzerland.

Alongside the voluntary standards listed, the study explored how EU Regulation concerning organic production³ addressed the biodiversity criteria. This allowed the analysis of the difference between voluntary and regulatory organic standards within the context of biodiversity conservation as delineated in this study.

2.2 Selecting the criteria

This study centres on the conservation, restoration, and enhancement of biodiversity. Biodiversity is multifaceted, encompassing ecosystems, species, and genetic diversity, each of which

TABLE 1 | List of standards assessed*

NAME OF STANDARD	DATE OF VERSION
Bio Suisse Standards for the production, processing, and trade of ‘bud’ products	January 2025
Fair for Life	May 2022
Fairtrade Standard for Hired Labour, Version 2.3	April 2024
Fairtrade Standard for Small-scale Producer Organizations, Version 2.9	April 2019
GlobalG.A.P. BioDiversity Principles and Criteria, Version 1.1	December 2023
Paired with the Integrated Farm Assurance (IFA) for fruit and vegetables standard, Version 6.0	September 2022
LEAF Marque Standard, Version 16.1**	September 2023
Naturland Standards on production	May 2025
Rainforest Alliance Sustainable Agricultural Standard – Farm Requirements, Version 1.4	March 2025
Roundtable on Sustainable Palm Oil (RSPO) principles and criteria	2018
SAI Platform’s Farm Sustainability Assessment (FSA) Self-Assessment Questionnaire (SAQ), Version 3.0.1	April 2025
UEBT Ethical Biobased Standard	July 2020

* Annex A provides a brief description of each standard.
** This report analyses v16.1 of the LEAF Marque Standard. On 5 November 2025, a new version – v17.0 – of the LEAF Marque Standard was published, which contains several updates related to biodiversity. The new version will be effective from 5 May 2026.
Sources: Bio Suisse (2025); Fair for Life (2022); Fairtrade International (2024); Fairtrade International (2019); GlobalG.A.P. (2022); GlobalG.A.P. (2023); LEAF (2023); Naturland (2025); Rainforest Alliance (2020b); RSPO (2018); SAI Platform (2025); UEBT (2020).

varies significantly by location and is not easily interchangeable. Given the vast array of potential components, selecting biodiversity criteria for analysis necessitates focusing on a representative subset.

3 The title of the basic act is Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007.

To facilitate comparability and build on existing literature, the study builds on the biodiversity criteria established by the IUCN NL (2019) benchmark study [Setting the Biodiversity Bar for Palm Oil Certification](#). Where the original criteria were specifically tailored to palm oil plantations, adjustments have been made to reflect the broader scope of the analysis, which examines a wider set of standards.

Like the IUCN NL study, four key themes were selected to evaluate standards by, which capture key threats to biodiversity:

- ☐ habitat loss and degradation;
- ☐ habitat fragmentation and connectivity loss;
- ☐ direct mortality of species (examining overexploitation, pollution, invasive species, anthropogenic disease, and fire threats); and
- ☐ anthropogenic climate change, with indirect impacts on biodiversity.

Standards were also assessed against the four key categories of actions required to combat biodiversity loss, namely:

- ☐ biodiversity conservation measures and processes;
- ☐ legality;
- ☐ restoration activities; and
- ☐ community engagement for biodiversity conservation.

Furthermore, four additional questions have been introduced, reflecting progress in the biodiversity agenda since 2020. These themes examined the standards' coverage of:

- ☐ the links between biodiversity and climate change;
- ☐ access and benefit-sharing;
- ☐ the principles of no deforestation, no peat, and no exploitation (NDPE); and
- ☐ strategic oversight mechanisms.

Biodiversity loss and climate change are inherently interconnected, and there is growing emphasis on the need to create cohesion between the climate

and environment agendas. Climate adaptation is crucial for agriculture, particularly for small-scale producers, to maintain productivity amid increasing climate variability and extreme weather events (FAO, 2020). Integrating biodiversity-friendly climate adaptation offers a powerful synergy between ecological and climate resilience and economic viability. Adding this criterion allows examination of whether standards address the biodiversity loss and climate change twin crises in an integrated manner.

Access and benefit-sharing (ABS) is a key component of the Nagoya Protocol under the CBD. By considering ABS, this study moves beyond the simple consideration of community engagement to understanding how these standards integrate the equitable sharing of benefits that arise from the agricultural products produced.

Many companies are adopting NDPE commitments. In this context, the study examines the extent to which standards cover NDPE principles, to help companies in the selection of standards which can support the realisation of their NDPE commitments.

Finally, strategic oversight mechanisms were assessed because, regardless of the standard of biodiversity provisions on paper, effective oversight is fundamental to those practices being developed, realised, and owned.

[Table 2](#) provides an overview of the themes examined. To address the 12 themes, a total of 34 questions were posed (see [Annex B](#)). The standards were assessed against the questions using available information online, text mining, and analysis. The assessment was based on keywords and content analysis, which was performed primarily on the standard documents listed in [Table 1](#). Each theme was reviewed to understand the extent to which the standard addressed the underlying issue, using four qualitative categories – from weak to medium, good, and strong, as described in [Table 3](#).

Analysis was cross-checked by re-running the assessments through an AI model and checking

any discrepancy. An overview of the results was then compiled and analysed, with key themes and trends identified, allowing for the determination of conclusions and recommendations. The results and report were reviewed by representatives from the IUCN Agriculture and Food Systems team and IUCN NL. The voluntary standards were contacted to share the draft report and collect potential comments and, where justified, edits were made to the final report.

2.3 Limitations

This study focuses on providing a biodiversity assessment of standards but does not analyse assurance criteria and mechanisms, which control compliance in the field. Even strong standards can suffer from a lack of implementation and independent verification.

The study is not exhaustive; many other standards exist that cover biodiversity to varying degrees. Additionally, the selected standards were evaluated solely based on the 34 study questions,⁴ which inherently cannot capture all elements of biodiversity, nor will the questions be equally applicable to each standard. Each standard was designed with specific purposes; these purposes direct the provisions of the standards. Given this, each standard will engage with the set 34 study questions differently: some questions being more or less relevant to the standard and its set purpose. For example, depending on the type of crop within the scope of the standard, that standard's principles and criteria will differ. Therefore, while the study provides insights on how the selected standards consider these specific criteria, it cannot offer definitive conclusions on which standard is the 'best' for biodiversity conservation. Rather, this study provides insights relevant to dsm-firmenich, its suppliers, and other buyers of natural ingredients across sectors.

TABLE 2 | Summary of themes examined

THEME
Biodiversity conservation measures and processes: ▶ Identification of biodiversity values and potential impact on those values by operations ▶ Identification of measures to mitigate negative impacts from operations on biodiversity values ▶ Assessment of monitoring and reporting on the implementation of biodiversity conservation measures
Habitat loss and degradation
Habitat fragmentation and connectivity loss
Direct mortality of species: ▶ Over-exploitation ▶ Pollution ▶ Invasive species ▶ Anthropogenic introduced disease ▶ Fire
Anthropogenic climate change, with indirect impacts on biodiversity
Legality
Restoration
Community engagement for biodiversity conservation
Additional questions ▶ the links between biodiversity and climate change; ▶ access and benefit-sharing; ▶ the principles of no deforestation, no peat, and no exploitation (NDPE); and ▶ strategic oversight mechanisms

Note: For the full question sheet, please see [Annex B](#).

TABLE 3 | Qualitative categories

CATEGORY	DESCRIPTION
Strong	Evidence that the standard fully addresses all parts of the question. The standard's requirements and guidance may go beyond that sort in the question.
Good	Evidence the standard addresses the majority of the question.
Medium	The standard addresses elements of the question; this could be implicit.
Weak	Weak engagement with the question or insufficient publicly available information that the standard addresses the question.

⁴ The 34 questions are detailed in [Annex B](#).



Lavender fields in Provence, France
IUCN Photo Library © Sue Mainka

3 Biodiversity criteria assessment: results and conclusions

This section provides the results and conclusions for the biodiversity criteria assessment, overall and by theme. For each theme, a table of the main results is provided, with a narrative that highlights the best practices aligned with Nature Positive identified in the analysis. The full table covering all themes is provided in [Annex B](#).

3.1 Overall results

Standards varied in alignment with the biodiversity criteria, with analysis split into three broad groups. RSPO, Rainforest Alliance, UEBT, and Fair for Life form one group. These standards demonstrated comprehensive coverage across biodiversity themes within agricultural production systems, especially in relation to biodiversity conservation measures and processes, habitat preservation and enhancement, addressing threats to biodiversity, and the additional questions added in this study on climate and biodiversity, NDPE principles, ABS, and strategic oversight mechanisms. Each standard within this group has its respective strengths.

[RSPO](#) was created through a WWF-led initiative that united industry and NGO partners⁵ in 2002 (RSPO, 2025). RSPO addresses the theme of community engagement particularly well, given its participatory engagement approach which is mainstreamed throughout the standard. Equally, its HCV approach to biodiversity conservation and enhancement leads to strengths in addressing biodiversity conservation and monitoring, habitat loss and degradation, habitat fragmentation and connectivity, and restoration.

[Box 1](#) provides a description of the HCV approach. RSPO also stands out in the way the standard addresses climate change, with protections for High Carbon Stock (HCS) forests and clear controls required on greenhouse gas (GHG) emissions from

land use change and production operations. This focus is understandable in the context of oil palm development where land burning, deforestation, and associated greenhouse gas emissions are key risks to be managed (Meijaard et al., 2018).

[Rainforest Alliance](#), an IUCN Member and NGO founded by American environmentalist Daniel Katz in 1987, also addresses biodiversity conservation and habitat criteria well. It is particularly strong in addressing the threats to biodiversity and on provisions related to restoration. This is because it requires a minimum area on the farm to be covered by native vegetation. If there is less than 10% of the total area under natural vegetation cover or less than 15% for farms growing shade-tolerant crops, management must set targets and take action for farms to reach these thresholds. The strong focus on restoration can be partly explained by the NGO's expertise and experience in forestry. Rainforest Alliance developed the world's first global forestry certification in 1989 (Rainforest Alliance, n.d.). The organisation is also one of the founders of the Forest Stewardship Council (FSC) and continues to collaborate with the FSC to forward sustainable forestry (Rainforest Alliance, 2019).

[UEBT](#) has particularly strong legal provisions and is the only standard to reference compliance with the CBD and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). It also integrates consideration of local and customary laws related to biodiversity value. This legal framework focus aligns with UEBT's origins and original purpose. UEBT was born out of a UN initiative that promoted business engagement in the ethical sourcing of ingredients from biodiversity (UEBT, n.d.). In 1996, the UN Conference on Trade and Development (UNCTAD) launched a BioTrade Initiative. Its focus was to support the

⁵ In 2001, WWF commenced exploring the possibilities for a Roundtable on Sustainable Palm Oil. The result was an informal co-operation among Aarhus United UK Ltd, Golden Hope Plantations Berhad, Migros, Malaysian Palm Oil Association, Sainsbury's, and Unilever together with WWF in 2002" (RSPO, 2025, p. 1).

Box 1

High Conservation Value approach

The HCV approach is a globally applicable methodology for identifying, protecting, and monitoring biological, ecological, social, and cultural values considered to be of outstanding significance or critical importance. These values are categorised into six main types:

- ▶ **Species diversity:** Concentrations of biological diversity, including endemic, rare, threatened or endangered species significant at global, regional or national levels
- ▶ **Landscape-level ecosystems:** Large ecosystems, ecosystem mosaics, and Intact Forest Landscapes that support viable populations of naturally occurring species
- ▶ **Rare or threatened ecosystems:** Rare, threatened, or endangered ecosystems, habitats, or refugia
- ▶ **Ecosystem services:** Critical ecosystem services such as water catchment protection and erosion control
- ▶ **Community needs:** Sites and resources essential for the basic necessities of local communities or Indigenous Peoples, identified through engagement with these groups
- ▶ **Cultural values:** Sites, resources, habitats, or landscapes of global or national cultural, archaeological or historical significance, or of critical importance for traditional cultures.

The approach is applied across diverse landscapes, scales, and sectors, involving local communities and stakeholders in the identification and management of HCVs to ensure their long-term protection (HCVN, n.d.).

Roundtable on Sustainable Palm Oil and the High Conservation Value approach

The RSPO requires its members to identify, maintain, and enhance HCVs within their operations (HCVN & RSPO, 2025). The RSPO has developed specific guidance and a simplified HCV methodology for smallholders, enabling them to assess, manage, and monitor HCVs using practical tools such as smartphone apps and web dashboards. RSPO's certification standards mandate that no new plantings replace primary forest or any area required to maintain or enhance HCVs. The RSPO also collaborates with the HCV Network (HCVN) to embed robust HCV protections within sustainable land management practices, ensuring compliance with evolving regulations and supporting the conservation of biodiversity and critical community resources (HCVN, n.d.).

CBD's objectives through international trade and investment. UEBT was created a few years later as a business-focused biodiversity initiative inside UNCTAD. In 2008, UEBT transitioned out of the UN System, and established itself as an independent non-profit, but it still maintains close connections with the CBD and associated Conventions. It is notable that all three of these standards were developed either in collaboration with conservation organisations or with environmental protection as a key driver of the standards' creation.

[Fair for Life](#) completes this group of standards. Fair for Life was launched in 2005 by the Swiss Bio-Foundation in collaboration with the Institute

for Marketecology (IMO) (Fair for Life, n.d.). The initiative aimed to provide a fair trade certification that was more inclusive than existing models, accommodating a wider range of products and production systems. In 2014, the certification programme was acquired by Ecocert, a French based organic certification organisation. In 2017, Fair for Life merged with the Ecocert Fair Trade standard, consolidating their criteria to create a unified certification system under the Fair for Life name. Its fair trade origins explain Fair for Life's particularly strong alignment with criteria related to ABS and community engagement; it is also strong on strategic oversight mechanisms.

A second broad group consists of [LEAF Marque](#), the Fairtrade standards (Hired Labour and Small-scale Producer Organisations), the Farm Sustainability Assessment (FSA) Self-Assessment Questionnaire (SAQ) (hereinafter FSA SAQ), and the [GLOBALG.A.P. BioDiversity add-on](#) (hereinafter GAP biodiversity add-on, or GAP). In general, this group is good at integrating biodiversity and habitat conservation measures into their standards, while placing comparatively less focus on climate change, legal provisions, and restoration requirements. These standards tend to require some form of emissions monitoring but do not focus on protecting significant carbon stocks. They have clear requirements to comply with national legislation but tend not to cite relevant international biodiversity conventions.

A third group features the organic standards [Bio Suisse](#) and [Naturland](#). The standards have differing approaches to integrating biodiversity considerations but share in their integration of safeguarding provisions for HCV areas. [EU Regulation 2018/848](#), examined as a comparison point, have less explicit biodiversity requirements than these two standards.⁶

3.1.1 A focus on organic standards

In our study, organic standards appear less aligned with some of the biodiversity criteria than standards more focused on conservation. This stems from the fundamental orientation of organic standards which prioritise sustainable agricultural practices, particularly in relation to organic inputs, rather than direct biodiversity conservation.

However, Bio Suisse specifies that producers must maintain and enhance biodiversity throughout their entire operational acreage. The standard requires areas dedicated to the enhancement of biodiversity, buffer zones around water bodies, and two additional measures for the enhancement of biodiversity. These requirements contribute to Bio Suisse aligning well with themes, such as

biodiversity conservation measures and processes and habitat loss and degradation.

Naturland states biodiversity is to be “maintained and fostered on farms to the best of the farmer’s ability” (Naturland, 2025, p. 10). The Standard states that producers should integrate protective measures for ecological systems and it sets crop-specific requirements for biodiversity when cultivating coffee and cocoa and growing bananas. This less prescriptive approach means lower engagement with the biodiversity criteria set. Naturland writes that “beyond the basic system services of organic agriculture” (Naturland, n.d.), many Naturland farmers want to do more to promote biodiversity, and so it is working with nature conservation association LBV (Landesbund für Vogelschutz, or Bavarian Association for Bird and Nature Conservation) to establish a biodiversity consultation service for Naturland farms (Naturland, n.d.).

More generally, organic farming inherently supports some biodiversity benefits through reduced agrochemical inputs⁷ and promotes biodiversity through provisions related to soil biodiversity.⁸

[Box 2](#) provides a description of some of the soil biodiversity provisions within the organic standards.

As the scientific community increasingly recognises the importance of soil biodiversity,⁹ future analysis of standards with regards to biodiversity may need to include a more integrated assessment of this topic.

3.1.2 Fair trade standards and community engagement

Fair trade-focused standards perform particularly well on community engagement and social criteria. Given that social development and smallholder inclusion are at the core of these standards, this outcome is both expected and well-aligned with their primary objectives. There are opportunities to consider the combined application and auditing of fair-trade standards with other standards that

6 As Lampkin and Pearce (2020) have summarised, several of the biodiversity benefits of organic regulations are an indirect consequence of prohibited or restricted practices rather than being recognised as biodiversity-focused.

7 For studies examining the relationship between organic farming and biodiversity, see for example: [Overview of studies on the biodiversity impacts of organic farming - IFOAM Organics Europe Publications](#); and [Agriculture and biodiversity](#).

8 Please note that soil biodiversity is not a part of the criteria set in this study.

9 See for example: [State of knowledge of soil biodiversity - Status, challenges and potentialities](#).

Box 2

Addressing soil biodiversity in organic standards and integrated monitoring approaches

Organic standards place significant emphasis on maintaining and enhancing soil health and soil biodiversity, recognising their foundational role in ecosystem health and sustainable food production. Although this study primarily focused on above-ground biodiversity, the critical importance of soil biodiversity is increasingly acknowledged in scientific literature (FAO et al., 2020).

Soil biodiversity encompasses the myriad organisms inhabiting the soil, including bacteria, fungi, protozoa, nematodes, arthropods, and earthworms. These organisms drive essential ecosystem functions, such as nutrient cycling, organic matter decomposition, soil formation, and plant productivity. Furthermore, soil biodiversity contributes to climate regulation, water purification, and disease suppression, underscoring its integral role in ecosystem resilience and human well-being.

The IUCN Land Health Monitoring Framework (Dussán López, 2023) and associated Guidance Note (Muñoz Cañas, 2025), provide a multi-scale, stepwise approach to assessing biodiversity and ecosystem functions, including soil health. At the field and soil levels, this approach treats soil biodiversity as fundamental for land health and prioritises practical indicators, such as soil organic matter, microbial diversity, and soil fauna.

At the farm level, the framework recommends evaluating functional and habitat diversity, emphasising farm management practices that influence biodiversity outcomes. This includes assessing crop diversity, land use heterogeneity, set asides, and the presence of semi-natural habitats within farm boundaries. The approach encourages engaging farmers and local stakeholders in data collection and decision making, to ensure monitoring is relevant and actionable. By linking farm-level biodiversity indicators with broader landscape and national scales and associated indicators, the framework supports understanding cumulative impacts and informs sustainable land management strategies.

Organic standards, while not formal monitoring frameworks, exemplify an approach that places soil health at the centre of agricultural practice and indirectly support biodiversity monitoring and conservation efforts.

Bio Suisse: The Bio Suisse standard mandates that crops be cultivated in natural soil, explicitly prohibiting the use of synthetic substrates. It requires the implementation of practices aimed at promoting soil fertility and preventing soil erosion, such as maintaining near continuous plant cover, establishing buffer strips, planting windbreaks, and aligning tillage with land contours. The standard emphasises that the impact of soil cultivation measures on soil life and structure must be considered, promoting practices that support soil biodiversity and health.

Naturland: Naturland's standard stipulates that farm management practices should not degrade soil fertility; instead, they should aim to enhance it through methods like permanent plant cover, agroforestry systems, and the use of green fallow or undersown leguminous crops. The standard prohibits cultivation in synthetic or surrogate substrates, including sacks and containers, to ensure that soil ecosystems remain intact and functional. Preventive measures against soil erosion, such as maintaining vegetation around field borders and encouraging dense undergrowth, are also required.

EU Organic Regulations: The EU Regulation 2018/848 states that organic production should be based on principles that maintain and enhance soil life, natural soil fertility, soil stability, soil water retention, and soil biodiversity (European Parliament, Council of the European Union, 2018). Practices should prevent soil organic matter loss, compaction, and erosion, and practices should nourish plants primarily through the soil ecosystem. Specific measures include multiannual crop rotations with mandatory leguminous crops and the use of green manure to maintain or increase soil organic matter and soil biodiversity.

In summary, organic standards and the IUCN Land Health Monitoring Framework both underscore the critical role of soil biodiversity in supporting ecosystem functions and agricultural sustainability. By integrating soil-focused management and monitoring – spanning field, farm, and landscape scales – these approaches contribute to biodiversity conservation and long-term food system resilience.

perform well on biodiversity, to cover a wider spectrum of relevant criteria.

3.2 Results by theme

The rest of chapter 3 provides further detail on the results by theme.

3.2.1 Biodiversity conservation measures and processes

Based on the questions with reference to biodiversity conservation and processes (see Table 4a), across the board, most standards require the identification of biodiversity values and measures associated to maintain these values and monitor and report on the stipulated conservation measures in some form (see Table 4b). RSPO, Rainforest Alliance, LEAF, and GAP all have strong provisions on the identification of biodiversity values before operations and requirements to protect biodiversity values from operational impacts. GAP has a specific requirement to obtain a baseline for on-farm biodiversity annually. The four standards also have important provisions regarding the monitoring and reporting of biodiversity conservation.

Instead of prescribing specific measures, UEBT provides examples of actions to maintain, regenerate, or enhance biodiversity from which companies select those most appropriate to their operational context. The chosen actions are evaluated to determine whether they adequately address biodiversity impacts. In doing so, UEBT illustrates the need to balance stringent criteria with broad applicability.

The Fairtrade Standard for Small-scale Producers implicitly addresses the identification of biodiversity values through its requirements to identify protected areas and HCV areas and prevent deforestation. However, it lacks explicit guidance on adaptive management to respond to biodiversity monitoring results. The Fairtrade Standard for Hired Labour has similar provisions and requires actions to prevent, mitigate, and remediate the three most salient environmental and human rights issues as identified during the initial risk assessment.

TABLE 4a | Questions assessed in relation to biodiversity conservation measures and processes

CATEGORY: BIODIVERSITY CONSERVATION MEASURES AND PROCESSES	
Question	Requirements prior to significant intensification or expansion of cultivation, infrastructure or processing
Q1	Does the standard require the identification of biodiversity values that would be potentially affected by operations, and the assessment of potential impacts on those biodiversity values?
Q2	Does the standard require identification of measures to maintain or minimise and mitigate negative impacts from operations on biodiversity values?
Q3	Does the standard specify any particular measures to be applied in given circumstances to minimise and mitigate negative impacts from operations on biodiversity values?
Question	Requirements after expansion of cultivation or infrastructure for existing plantations, infrastructure, and processing operations
Q4	Does the standard require regular monitoring and reporting on implementation of plans for biodiversity conservation?
Q5	Does the standard require regular monitoring of actual impacts on biodiversity and adaptive management as necessary for improvement?

TABLE 4b | Results obtained from questions in relation to biodiversity conservation measures and processes

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFORREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q1	Strong	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q2	Strong	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q3	Strong	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q4	Strong	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q5	Good	Good	Good	Good	Good	Good	Weak or insufficient information	Good	Good	Good	Good

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

However, the standard does not mandate a comprehensive biodiversity monitoring framework. The FSA SAQ also has limited provisions for biodiversity monitoring and no adaptive management requirements. This could signal an

area for improvement for the Fairtrade standards and the FSA SAQ, particularly as monitoring and adaptive management are both crucial for maintaining biodiversity outcomes over time.

Naturland has more moderate requirements to identify and safeguard biodiversity values. The standard does not explicitly require monitoring of biodiversity conservation actions, although it references monitoring of soil, water, wild collection practices, and agroforestry performance in certain contexts.

In comparison, EU Regulation 2018/848 contains broad objectives for organic production to “contribut[e] to a high level of biodiversity” (EU, 2018, Art. 4(c)) and sets out that preventative measures, where appropriate, are to be taken by operators to ensure the preservation of biodiversity and avoid negative effects on the environment (EU, 2018, Art. 3(4)). The regulation does not specifically require the monitoring and reporting of formal biodiversity conservation plans. The requirements are broad and process-focused rather than prescriptive on conservation documentation or reporting.

3.2.2 Habitat loss and degradation

In relation to questions on habitat loss and degradation (see Table 5a), the study finds that standards tend to have good provisions regarding the protection of natural ecosystems for species survival but start to fall short in requiring protection of ecosystems providing services for off-farm biodiversity conservation. However, GAP, the Fairtrade standards, and the RSPO include strong provisions for off-farm biodiversity conservation (see Table 5b). For example, GAP specifies the need to implement off-farm synergies, communication and collaboration in relation to biodiversity, and support the protection of biodiversity outside the farm. The Fairtrade standards have similar requirements and guidance.

RSPO distinguishes itself for its approach to the protection of rare, threatened, or endangered (RTE) species. The standard mandates not only their protection but also the establishment of educational programmes to regularly inform the workforce about

TABLE 5a | Questions assessed in relation to habitat loss and degradation

CATEGORY: HABITAT LOSS AND DEGRADATION	
Questions	
Q6	Is the standard explicit in requiring the protection of all natural ecosystems that are important for species survival?
Q7	Does the standard require protection of ecosystems providing services critical for offsite biodiversity conservation?
Q8	Does the standard exclude any agricultural development in protected areas?
Q9	Does the standard require the maintenance of buffer zones around protected areas?
Q10	Does the standard require that representative areas of native ecosystems in the management unit be actively conserved?

TABLE 5b | Results obtained from questions in relation to habitat loss and degradation

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBAL G.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q6	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q7	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q8	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q9	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q10	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good

■ Strong ■ Good ■ Medium ■ Weak or insufficient information

RTE species’ status. Additionally, RSPO proposes strict disciplinary measures for any individual involved in the capture, harm, collection, trade, possession, or killing of these species. Under the GAP biodiversity add-on, the producer must take into account the protection of species and should undertake species protection measures as part of their biodiversity action plan (BAP).

Fair for Life, Rainforest Alliance, and Bio Suisse include criteria either for net positive gain or no net loss in biodiversity. For example, Bio Suisse specifies that producers must maintain and enhance

biodiversity throughout their entire operational acreage this includes having areas dedicated to the enhancement of biodiversity and implementing measures to promote species diversity and ecological communities.

Not all standards have provisions that explicitly exclude agricultural development within protected areas. For example, RSPO, Naturland, and Bio Suisse do not specifically mention protected areas; instead, they require, to varying degrees, the safeguarding of HCV areas.

Almost all standards require the maintenance of buffer zones around bodies of water. However, only Fair for Life, the Fairtrade Standards, RSPO, and Rainforest Alliance specifically require the maintenance of buffer zones around protected areas. The FSA SAQ and UEBT recommend rather than *require* maintenance of buffer zones around protected areas.

Many standards have strong requirements for the maintenance of representative areas of native ecosystems in the management unit to be actively conserved. The percentage of representative areas conserved varied between standards: LEAF requires 10% or more of the farm/site to be managed as a habitat area,¹⁰ Bio Suisse requires 7% of the total utilised agricultural area to be dedicated to the enhancement of biodiversity, and GAP requires 3%.

3.2.3 Habitat fragmentation and connectivity loss

Ensuring habitat connectivity is essential to reducing species' extinction risk. Habitat connectivity allows for the movement, dispersal, and genetic exchange necessary for healthy and resilient populations (Hilty et al., 2020; Littlefield et al., 2019; UNEP-WCMC, 2023). Fragmentation of habitats – due to urban development, agriculture, and infrastructure – isolates wildlife populations, leading to genetic bottlenecks and increased extinction risk (UNEP-WCMC, 2023; Ren et al., 2023).

TABLE 6a | Questions assessed in relation to habitat fragmentation and connectivity loss

CATEGORY: HABITAT FRAGMENTATION AND CONNECTIVITY LOSS	
Questions	
Q11	Does the standard require protection of corridors of natural vegetation where these are critical for connectivity between habitats to avoid fragmentation of ecosystems (e.g. large landscape-level ecosystems or HCV 2 areas)?

TABLE 6b | Results obtained from questions in relation to habitat fragmentation and connectivity loss

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q11	Strong	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

Despite the importance of habitat connectivity, there is a mixed response (see Table 6b) among standards regarding requirements to promote and protect ecological corridors. RSPO, GAP, and Bio Suisse have specific requirements related to connectivity. RSPO requires HCVs to be protected from degradation through collaborative plans at the landscape level. The plans should include “identifying, protecting and/or enhancing forest connectivity important for biodiversity, ecosystem services, or watershed protection” (RSPO, 2022, p. 23). The standard explicitly states that HCV habitats can be protected by ensuring that HCV areas are connected, corridors are conserved, and buffer zones around HCV areas are created. RSPO’s guidance on implementing the connectivity criterion is also clear and strong.

GAP has a specific requirement for the promotion of wildlife corridors and small landscape structures. The standard specifies what counts as wildlife corridors, including hedgerows, riparian buffers and wetlands. It also provides guidance on how

¹⁰ Within the LEAF Marque standard v16.1 this is a recommended requirement. In the new LEAF Marque standard v17.0 there is a new mandatory requirement of 5% habitat area, though there are exceptions where a farm may have less than 5%.

to proceed in establishing corridors, including the identification of habitats on and off-farm to be connected, and the determination of which umbrella species will be targeted within such corridors. Further to this, GAP promotes participation in joint landscape-scale initiatives with other producers in the establishment of corridors.

Under Bio Suisse's requirement to undertake measures to enhance biodiversity, one option is to locate and connect areas dedicated to the enhancement of biodiversity by landscape elements. And under requirements for diversifying operations with more than 200 hectares of tropical permanent crops, one option is to establish a continuous, 30-metre-wide uncultivated wildlife corridor within the cultivated area.

As Table 6b shows, the FSA SAQ, UEBT, LEAF, and the Fairtrade Standards all have good provisions with regards to habitat connectivity. In these instances, while these standards may not prescribe establishing corridors, they promote actions to enhance habitat connectivity. It is interesting to note that the 2023 version of the Rainforest Alliance standard recommended wildlife corridors as a way to avoid restricting wildlife mobility and access to resources. This clause has been taken out following revisions to remove “unnecessarily burdensome requirements and refocus internal inspections and data collection on what matters most” (Rainforest Alliance, 2020b (rev. 2025), p. 10). Rainforest Alliance writes that for farmers this means “less complexity and resources required for implementation” (Rainforest Alliance, 2020b (rev. 2025), p. 10). The revisions demonstrate the need to strike a balance between ambitious requirements and a practical, implementable framework, to realise Nature Positive contributions.

Naturland requires the conservation of structural elements of the landscape and has specific requirements to support structural elements in banana cultivation systems. In comparison, EU Regulation 2018/848 Art. 5 (b) contains a general principle for the preservation of natural landscape elements without explicit mention of promoting habitat connectivity or preventing habitat fragmentation (European Parliament and the Council of the European Union, 2018, page L 150/22).

3.2.4 Direct mortality of rare, threatened, or endangered species

All assessed standards address the threat of overexploitation and pollution to some degree. However, a common shortcoming among the standards is their limited focus on addressing the risks of anthropogenic introduced diseases and fire (see Table 7b).

An exception to this pattern is the RSPO standard, which demonstrates strong provisions related to fire prevention and control. RSPO specifies that fire cannot be used for preparing land, and that the farm unit must establish fire prevention and control measures. In the construction of these measures RSPO requires units to engage adjacent

TABLE 7a | Questions assessed in relation to direct mortality of rare, threatened or endangered species

CATEGORY: DIRECT MORTALITY OF RARE, THREATENED OR ENDANGERED SPECIES	
Question	Does the standard require that particular threats be considered and mitigated in agricultural production, specifically:
Q12	Over-exploitation?
Q13	Pollution?
Q14	Invasive species?
Q15	Anthropogenic introduced disease?
Q16	Fire?

TABLE 7b | Results obtained from questions in relation to direct mortality of rare, threatened or endangered species

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBAL G.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFORREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q12	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q13	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q14	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q15	Good	Weak or insufficient information	Good	Weak or insufficient information	Good	Good	Good	Weak or insufficient information	Weak or insufficient information	Good	Weak or insufficient information
Q16	Good	Strong	Good	Good	Good	Good	Good	Strong	Strong	Good	Good

■ Strong ■ Good ■ Medium ■ Weak or insufficient information

stakeholders, promoting a collaborative approach to fire risk management.

Rainforest Alliance, GAP and the FSA SAQ cover threats to species well (see Table 7b). Rainforest Alliance only falls short on combatting anthropogenic introduced disease. Conversely, the FSA SAQ includes good provisions regarding anthropogenic introduced disease, with questions on measures to promote personal hygiene, and prevent diseases. The GAP biodiversity add-on is designed to be used in conjunction with the GAP Integrated Farm Assurance (IFA) for fruit and vegetables. The IFA requires farms to have a documented hygiene risk assessment which covers human transmissible diseases and specifies a series of hygiene practices to minimise human disease transmission.

3.2.5 Anthropogenic climate change, with indirect impacts on biodiversity

Overall, the evaluated standards demonstrate relatively lower engagement with criteria on anthropogenic climate change (see Tables 8a and 8b). RSPO aligns most strongly with questions in this category. The 2018 version of the standard incorporates the High Carbon Stock Approach (HCSA) Toolkit to ensure the contribution of RSPO certified farms to halting deforestation. It requires HCVs and HCS forests in the managed area to be identified and protected, or enhanced. RSPO also specifies the need to evaluate the carbon stock of the proposed development area and major potential sources of emissions that may result directly from the development. This approach is relevant in the context of oil palm development where tropical deforestation, peat-drainage and the use of fire in land clearing are key risks (Meijaard et al., 2018).

These risks maybe less present in other crop contexts. Additionally, adopting a HCS approach can be costly for land managers and difficult to implement given the complexity of the approach. Adopting a simpler no deforestation and no conversion of natural ecosystem criterion can yield similar results without the implementation complexity and cost burdens.¹¹

TABLE 8a | Questions assessed in relation to anthropogenic climate change, with indirect impacts on biodiversity

CATEGORY: ANTHROPOGENIC CLIMATE CHANGE, WITH INDIRECT IMPACTS ON BIODIVERSITY	
Questions	
Q17	Does the standard reference HCS forest?
Q18	Does the standard require the protection of significant carbon stocks?
Q19	Does the standard require monitoring and control of GHG emissions from land use change?
Q20	Does the standard require monitoring and control of GHG emissions from production operations?
Q21	Does the standard allow for linking of emissions reductions to national targets?

TABLE 8b | Results obtained from questions in relation to anthropogenic climate change, with indirect impacts on biodiversity

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBAL.G.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q17	Good	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good
Q18	Good	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good
Q19	Good	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good
Q20	Good	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good
Q21	Good	Good	Good	Good	Good	Good	Good	Good	Strong	Good	Good

■ Strong ■ Good ■ Medium ■ Weak or insufficient information

Most standards have some form of requirement related to the monitoring of GHG emissions from production operations, whilst fewer have requirements related to controlling GHG emissions from land use change. One exception is the LEAF Marque standard. It has a new requirement¹² for farms to use a carbon footprinting tool to establish a baseline and identify opportunities to reduce Scope 1 emissions, including those from land-use change.

¹¹ Interview with soy standards expert, on relative strength and weaknesses of agricultural standards, 10 June 2025.

¹² This is a recommended requirement within the standard

Rainforest Alliance used to require producers to document net GHG emissions from main sources in production and processing operations and to establish GHG reduction targets (Rainforest Alliance, 2020a (rev. 2023)). However, these requirements have been recently simplified to management documenting the type of energy sources and energy used for production and processing. These revisions are part of the process mentioned earlier where Rainforest Alliance undertook to streamline the standard to enhance implementation and impact.

Although the Fairtrade standards have fewer requirements related to this category, the SPO standard includes a noteworthy requirement for producers to implement measures on adaption to climate change. Members are encouraged to share their experiences of climate change adaptation activities for replication of these practices across members. The SPO Standard also has a specific requirement to protect vegetation in carbon storage ecosystems to preserve the carbon-sequestration capacity of these ecosystems.

As a comparison point to the voluntary standards, EU Organic Regulation contains a general objective that organic production shall contribute to the protection of the environment and climate (EU, 2018, Art. 4(a)), but the regulation does not address any of the listed climate change criteria. It is important to recognise that within the EU context, other regulatory instruments govern climate change monitoring and reduction.¹³

This study and the earlier IUCN NL benchmarking study consistently found that no standard requires emission reductions to be linked to national targets, which highlights the challenge of expecting voluntary standards to enforce national climate policies. Such linkage may be beyond the intended scope of these standards, whose primary aim is to guide sustainable practices rather than serve as instruments for national emissions compliance.

3.2.6 Restoration

Rainforest Alliance, GAP, and Fair for Life standards have strong provisions on restoration (see Tables 9a

TABLE 9a | Questions assessed in relation to restoration

CATEGORY: RESTORATION	
Questions	
Q22	Does the standard require restoration of natural habitats where their past conversion for agricultural production contravenes the requirements of the standard and/or national legislation?
Q23	Does the standard require restoration of land, natural water bodies or riparian vegetation damaged as a result of agricultural production in contravention of the requirements of the standard and/or national legislation?

TABLE 9b | Results obtained from questions in relation to restoration

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q22	Good	Strong	Good	Good	Good	Good	Medium	Strong	Good	Good	Good
Q23	Good	Strong	Good	Good	Good	Good	Medium	Strong	Good	Good	Good

Strong
 Good
 Medium
 Weak or insufficient information

and 9b). Rainforest Alliance stands out for its clear and measurable requirements, requiring a minimum area on the farm to be covered by native vegetation. The standard requires annual reports on vegetation cover from year one and, if the indicator falls below a 10% threshold for non-shade tolerant crops or 15% for shade-tolerant crops, management must set targets and take action to come up to this threshold. Rainforest Alliance also provides clear guidance on what qualifies as natural vegetation, this includes conservation and restoration areas outside the certified farm that effectively provide long-term protection and yield additional conservation value and protection status relative to the status quo. These requirements are a particular strength of the Rainforest Alliance standard.

Fair for Life requires any destruction or conversion of natural or semi-natural ecosystems in the preceding five years before the application, to be compensated

¹³ See, for example, [European Climate Law and Regulation \(EU\) 2018/841 of the European Parliament and of the Council](#).

through ecosystem conservation practices. GAP requires on-farm areas with legally recognised conservation value that have been converted into agricultural areas or into other uses since 2008 to be restored.

In comparison, Naturland mentions that landscape features should be restored where needed, but requirements are not strict. EU Regulation 218/848 promotes general environmental responsibility, but no explicit restoration mandate is present.

3.2.7 Legality in the context of biodiversity

Few standards explicitly require compliance with international biodiversity conventions (see Tables 10a and 10b). In fact, only UEBT and RSPO specifically make reference to the CBD in the requirement sections of their standards. RSPO states explicitly that growers' legal requirements include laws made pursuant to a country's obligations under international laws or conventions. RSPO provides an annex of key international laws and conventions applicable to the production of palm oil. UEBT requires activities to respect international agreements relevant to Ethical BioTrade practices and includes a list of relevant agreements. The other standards have more limited direct alignment with international agreements highlighting a potential area of improvement, particularly given the global consensus on the importance of these conventions for biodiversity conservation.

In contrast, when it comes to compliance with national regulations standards demonstrate strong alignment (see Table 10b). The FSA SAQ, UEBT, Fair for Life, LEAF, the Fairtrade standards, RSPO, Naturland, and Rainforest Alliance all require full adherence with national regulation.

Regarding the consideration of local and customary laws, UEBT, Rainforest Alliance, and Fair for Life address the criteria particularly well. UEBT specifies that operators must take into account the cultural, environmental and social concerns, and interests of Indigenous Peoples and local communities in cultivation and wild collection areas. UEBT also requires traditional uses of biodiversity in areas

TABLE 10a | Questions assessed in relation to legality in the context of biodiversity

CATEGORY: LEGALITY	
Questions	
Q24	Does the standard include requirements to comply with relevant international conventions? (e.g. UN CBD, RAMSAR, CITES)
Q25	Does the standard explicitly require compliance with national legislation on protection of biodiversity (where these requirements are more rigorous or restrictive than those of the voluntary standard)?
Q26	Does the standard require respect for local and customary laws providing for protection of biodiversity (where these requirements are more rigorous or restrictive than those of the voluntary standard)?

TABLE 10b | Results obtained from questions in relation to legality in the context of biodiversity

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q24	Good	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Good	Weak or insufficient information	Good	Strong	Weak or insufficient information	Strong
Q25	Good	Strong	Strong	Strong	Good	Strong	Strong	Strong	Strong	Strong	Strong
Q26	Good	Strong	Good	Good	Weak or insufficient information	Good	Good	Strong	Good	Good	Strong

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

compatible with conservation and sustainable use, to be respected and encouraged. Fair for Life states that from 1 June 2020 onwards, before undertaking operations on land legally or customarily owned and/or used by Indigenous Peoples and/or local communities, a binding agreement, including compensation modalities, shall be concluded with the parties through a transparent, accessible, and documented free, prior and informed consent (FPIC) process. Rainforest Alliance has similar requirements for management to respect legal and customary rights of Indigenous Peoples and local communities. The other standards could learn from the social safeguards mandated by these standards with regards to local and customary laws.

3.2.8 Community engagement for biodiversity conservation

Secure land tenure, equitable benefit-sharing, and inclusion of Indigenous and local knowledge mitigates land conflict and supports long-term land stewardship. Recognising FPIC and co-designing agricultural solutions with local communities is critical for effective and equitable biodiversity outcomes. Regarding the questions in this category (see Table 11a), most standards have some form of requirement to raise awareness among workers and local communities on biodiversity conservation. GAP and the Fairtrade standards address this question particularly well (see Table 11b). GAP requires off-farm collaboration, which can include working with local communities and other interested groups on the biodiversity work of the producer. The Fairtrade Hired Labour Standard requires companies to raise workers' environmental awareness as a core criterion. The Fairtrade SPO Standard requires producers to raise awareness about rare or threatened species within and around the management area and as part of guidance on preventing deforestation encourages raising awareness on identified risk areas and activities or production practices that have negative impacts.

Many of the standards that exhibit good practice on this criterion include training and community engagement, even though these activities are not always explicitly focused on biodiversity conservation. For instance, Fair for Life dedicates an entire section to the promotion of local sustainable development, which includes criteria related to raising awareness, education, and training in social responsibility. Yet, biodiversity conservation is not explicitly mandated within these activities.

Several standards have special provisions to help small producers and vulnerable groups overcome barriers to certification. In this category, the Fairtrade standards perform particularly well. The entirety of the Fairtrade standard for small-scale producers is geared towards encouraging and supporting smallholders to be accredited Fairtrade producers, through a series of phased steps. The standard also requires the identification of disadvantaged

TABLE 11a | Questions assessed in relation to community engagement

CATEGORY: COMMUNITY ENGAGEMENT	
Questions	
Q27	Does the standard include requirements for raising the awareness of workers, smallholders, and local communities on biodiversity conservation?
Q28	Does the standard make special provision for disadvantaged small producers, enabling them to overcome barriers to certification and participate in certified supply chains, thereby engendering their support for biodiversity conservation?
Q29	Does the standard require project developers to engage with local communities on biodiversity conservation?
Q30	Does the standard include a requirement to identify and manage potential conflicts between social/community needs/livelihoods and biodiversity conservation?

TABLE 11b | Results obtained from questions in relation to community engagement

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q27	Strong	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q28	Good	Good	Good	Good	Good	Weak or insufficient information	Weak or insufficient information	Good	Good	Good	Good
Q29	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Q30	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

or minority groups within an organisation, to then orient policies and practices positively around these groups. Fair for Life has similar requirements to facilitate and support the participation of disadvantaged groups. Like Fairtrade, RSPO has a standard specifically oriented towards small-holder participation in certification. Similarly, Bio Suisse has a simplified certification for smallholder groups.

In general, standards show good evidence of encouraging project developers to engage with local communities on biodiversity conservation. For example, the Fairtrade HL standard has a requirement for companies to actively participate in local or regional environmental projects, or have their own biodiversity plan. In guidance on developing a biodiversity plan the standard notes local knowledge from workers and the community is valuable. Similarly, in their guidance for conserving protected areas, the standard notes that companies may wish to consult with elders and people in the community on their knowledge of regional natural vegetation.

In reference to identifying and managing potential conflicts between social/community needs and biodiversity conservation many standards have strong grievance mechanisms for local communities informed by FPIC principles. Fair for Life goes so far as to require at least one relevant third-party organisation (non-governmental and non-profit) to be included in the FPIC process.

RSPO also institutes preventative measures to mitigate against conflict. For example, it requires producers to balance sustainable livelihoods with the need to conserve ecosystems. RSPO requires participatory approaches to impact assessment, specifying that in new plantings or operations, an independent Social and Environmental Impact Assessment is undertaken through a participatory methodology that involves the affected stakeholders. These measures help to mitigate the risk of grievances and conflicts with local communities.

UEBT specifies that cultivation and wild collection activities cannot jeopardise local food security. The standard also requires effective channels for hearing grievances from potentially impacted stakeholders with the ability to provide adequate remedies to affected individuals.

Similarly, Bio Suisse has strong requirements in relation to food sovereignty of local populations and has a strict no tolerance policy towards land grabbing. Its definition of land grabbing includes land obtained without regard for existing usufruct rights.

In comparison, EU Organic Regulation does not explicitly mention a grievance mechanism process for local communities within its provisions. Its compliance framework is designed for regulatory oversight and certification integrity rather than community dispute resolution.



Ripe bunches of cocoa, Viet Nam

Photo by Ly Le Minh/Unsplash

3.2.9 Additional criteria: linking climate change and biodiversity; access and benefit-sharing; NDPE principles; and strategic oversight mechanisms

As stated in the Methodology section, this study included four additional questions (see Tables 12a and 12b) beyond those featured in the IUCN NL study.

Linking biodiversity loss and climate change

The first additional criterion addresses whether the standard encourages approaches that address the biodiversity loss and climate change twin crises in an integrated manner. These two crises are inherently interconnected, and there is increasing emphasis on creating cohesion and synergies between the two agendas (Pörtner et al., 2021; Royal Society, 2021; UNEP CBD, 2022). At the same time, addressing the two challenges in isolation risks undermining the effectiveness of conservation and climate mitigation and adaptation efforts.

Forwarding integrated solutions is particularly important given the increasing emphasis on nature-based solutions (IUCN, 2020a; Key et al., 2022). Climate adaptation is also crucial for agriculture, particularly for small-scale producers, to maintain productivity amid increasing climate variability and extreme weather events (FAO, 2020). Integrating biodiversity friendly climate adaptation practices, such as agroforestry, intercropping, and cover crops, offer a powerful synergy between ecological and climate resilience and economic viability. More diverse systems provide risk diversification and maintain stable yields over time, with natural pest control and improved soil fertility reducing dependency on expensive chemical inputs (Raveloaritiana & Wanger, 2024).

As Tables 12a and 12b show, despite the critical importance of this integration, only five standards explicitly address the interconnections between climate change and biodiversity. Among the few that do, Fairtrade Standards stand out by acknowledging the role of natural ecosystems as buffers that help mitigate and adapt to the effects of climate change.

TABLE 12a | Questions assessed in relation to the additional criteria 'Linking climate change & biodiversity, access and benefit-sharing, NDPE principles, and strategic oversight mechanisms'

CATEGORY: ADDITIONAL CRITERIA – LINKING CLIMATE CHANGE & BIODIVERSITY, ACCESS AND BENEFIT-SHARING, NDPE PRINCIPLES, AND STRATEGIC OVERSIGHT MECHANISMS	
Questions	
Q31	Does the standard require exploration of the links between biodiversity loss and climate change?
Q32	Does the standard require consideration of access and benefit-sharing?
Q33	Does the standard address no deforestation, no peat, no exploitation (NDPE) principles?
Q34	Is there an owner of the biodiversity actions required by the standard? Is senior buy-in sought on biodiversity actions?

TABLE 12b | Results obtained from questions in relation to the additional criteria of 'Linking climate change & biodiversity, access and benefit-sharing, NDPE principles, and strategic oversight mechanisms'

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE HL	FAIRTRADE SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE	NATURLAND	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q31											
Q32											
Q33											
Q34											

Strong
 Good
 Medium
 Weak or insufficient information

These standards explicitly state that agriculture can contribute to reducing climate change through enhancing biodiversity and increasing carbon sinks. Other standards should follow Fairtrade's suit and act as platforms of thinking that could encourage farmers to pay greater attention to biodiversity-friendly climate adaptation measures.



Palm oil extraction in Rio Grande de Buba, Guinea-Bissau

IUCN Photo Library © Philippe Tous

Access and benefit-sharing

The second additional criterion introduced in this study examines whether the standards consider access and benefit-sharing (ABS), which refers to the framework governing the access to genetic resources and the equitable sharing of benefits that arise from their use between users and providers (CBD, n.d.a). This concept is central to the Nagoya Protocol on Access and Benefit-sharing under the CBD, which seeks to incentivise the conservation and sustainable use of genetic resources while supporting development and human well-being.

Providers of genetic resources may include governments, civil society bodies, private landowners, or communities within a country (CBD, n.d.b). The CBD's ABS provisions are designed to facilitate physical access to these resources, while ensuring that the benefits obtained are shared equitably. In some cases, this also includes valuable

traditional knowledge associated with genetic resources that comes from Indigenous Peoples and local communities (IPLCs).

Three standards – UEBT, Fair for Life, and Rainforest Alliance – show notable strengths in relation to ABS. UEBT has a principle on ABS with six related criteria, including a criterion that encourages the use of raw materials that comply with applicable legal requirements on ABS. Where no legal requirements on ABS apply, the utilisation of genetic resources and associated traditional knowledge accessed from IPLCs must respect ABS principles.

Rainforest Alliance requires farms to conduct an FPIC process where activities diminish land, resource use rights or collective interests of IPLCs. The standard provides a guidance document on FPIC Processes which explicitly states that terms of agreement for proceeding with such

activities should be negotiated with the community including provisions, such as continued access to the affected lands and resources, just and fair compensation for loss of use of land and resources, and/or an equitable share in the project benefits (Rainforest Alliance, 2022).

In addition, the Rainforest Alliance and UEBT have developed a joint Herbs & spices Program which builds on the respective strengths of UEBT's knowledge of ethical sourcing of ingredients from biodiversity and Rainforest Alliance's expertise in sustainable agriculture certification. The program also contains criteria on the need to comply with legal requirements on ABS when using raw materials and respecting ABS principles in the absence of legal requirements.

Fair for Life requires producers to comply with the Nagoya Protocol with an explicit principle that efforts must be taken to ensure the use of biodiversity and associated traditional knowledge is recognised, transparently negotiated with local peoples and adequately compensated.

No deforestation, no peat, no exploitation principles

The penultimate criterion of this study assesses whether standards promote the principles of no deforestation, no peat, no exploitation, or NDPE. These commitments are typically associated with the production of agricultural commodities used by downstream companies, traders, mills, and growers, and most commonly appear in palm oil production contexts (Proforest, 2020).

While there is no single, universally accepted definition of NDPE, the principles generally encompass several key components:

- 🍃 **No deforestation:** Companies must avoid deforestation when they develop their land to produce commodities or associated projects. Tools, such as the HCS Approach, which focuses on forests, and the HCV approach, which includes other ecosystems and social values, are often referenced in relation

to implementation of this commitment. It also includes managing burning practices and reducing GHG emissions on existing plantations.

- 🍃 **No peat:** Prohibiting new developments on peatland and advocating for the use of Best Management Practices (BMPs) on existing peat plantations.
- 🍃 **No exploitation:** Ensuring that workers, local communities, and small-scale growers are not exploited during commodity production, emphasising human rights protection, particularly the rights of IPLCs, workers, and smallholders (Proforest, 2020).

Broadly speaking, all standards promote these principles in some form with some standards more explicitly addressing these principles. Standards tend to address the 'no deforestation' element of NDPE explicitly, they often cover 'no exploitation' through labour and social criteria but fewer address the 'no peat' element of NDPE.

The Fairtrade SPO Standard has strong criteria related to deforestation. It mandates that procedures must be in place to ensure members do not cause deforestation. Procedures may include using geo-mapping and polygon maps to map risk areas more accurately. For its cocoa and coffee Standards, Fairtrade requires annual geolocation data for all plots of land under certification (Fairtrade, 2025). RSPO also has strong alignment with NDPE principles due to its integration of the HCS forest approach.

Strategic oversight mechanisms

The final theme assessed is strategic oversight mechanisms, specifically evaluating whether standards require ownership of biodiversity actions and senior management buy-in of these actions. These oversight elements are essential for the credible and long-term implementation of biodiversity commitments. Governance arrangements regarding the standard itself, like assurance, are also integral, but they are outside the scope of this study.

Effective oversight is fundamental to embedding biodiversity conservation into organisational practices. Without clear ownership and senior level endorsement, biodiversity initiatives often lack continuity and strategic integration, leading to fragmented or short-lived efforts. As highlighted by Bennet and Satterfield (2018), institutional commitment is a key driver of successful environmental outcomes, as it fosters accountability and resource allocation.

GAP shows strengths here with its first criterion requiring that a biodiversity representative on the farm be identified and responsible for the implementation of the biodiversity add-on. Fair for Life also shows strengths with a three-year environmental plan required to meet the standard for conventional production operations not transitioning to organic farming. The plan must include clear targets, and implementation is followed up every three years by staff required to be appointed for the management of the internal control system. Overall, a senior representative with sufficient management power must be responsible for certification and performance according to the standard.

The Fairtrade standards also fare well, both standards requiring a person to lead the operational steps required to comply with the environmental criteria. The SPO standard specifies “this person should be in a position that can influence decision making at the organizational level” (Fairtrade International, 2019, p. 22) and should have sufficient knowledge to perform tasks properly. The Hired Labour Standard specifies that the representative overseeing the implementation of the standard’s requirements report to senior management and has “the relevant knowledge and experience to perform these tasks” (Fairtrade International, 2024, p. 10).

Under Rainforest Alliance, group management is required to dedicate adequate resources and staff for the implementation of the Standard and assess its capacity every three years. The standard specifies whether small farms, large farms, or group management are responsible for compliance with requirements under group certification. The FSA SAQ requires biodiversity actions to be planned, documented, and monitored but does not explicitly require assigning a named owner of biodiversity actions.

Effective oversight is not merely procedural but is a fundamental enabler of long-term biodiversity conservation. Standards that mandate clear ownership and senior management buy-in ensure that organisations institutionalise biodiversity goals rather than treat them as peripheral to primary operational objectives.

Box 3

Nature Positive and wild collection

Standards governing wild collection operate within distinct ecological and operational contexts compared to agricultural production systems. As such, certain criteria within the assessment may not fully capture their biodiversity governance contributions. For example, this assessment considers habitat loss and land conversion. For wild-collection standards, biodiversity risk relates less to land conversion and more to harvest pressure, ecosystem disturbance, and species population viability. Similarly, this assessment considers connectivity. In wild ecosystems, habitat connectivity is inherent to landscape integrity rather than governed through production planning. While outside the scope of this study, assessment frameworks should consider how governance systems specific to wild collection can be integrated into Nature Positive sourcing strategies. Integrating standards and mechanisms that address biodiversity risks in wild ecosystems will be essential to ensuring comprehensive biodiversity outcomes.

Box 4 describes the FairWild Standard for sustainable wild collection of plant, fungi and lichen species. Since the standard does not apply to agricultural production, it is outside the scope of this assessment but nevertheless includes relevant biodiversity safeguards which agriculture standards could learn from.



Jasmin flower buds, India

Photo by chandra sekhar/Unsplash

Box 4

FairWild and biodiversity

FairWild is a standard specifically designed for sustainable collection of wild plant, fungi and lichen species worldwide. Given the standard is not designed to address certification of agriculture and products derived from it, FairWild is outside the scope of this assessment. Nevertheless, the standard offers certain principles, criteria and guidance which agriculture standards could learn from in constructing biodiversity safeguards:

- ▶ **Addressing overexploitation:** FairWild explicitly seeks wild harvesting to be conducted in a manner and scale that maintains populations and species overtime. To realise this the identity and conservation status of collected species must be known and resource management planning must be oriented to ensure maintenance of populations long-term. The impact of wild collection on habitat and the broader landscape must be assessed; this includes assessment of the impact on non-target species.
- ▶ **Species conservation:** For species proposed for certification a species risk classification must be undertaken by the FairWild Foundation alongside members of the IUCN Commissions, as appropriate. The health, status and distribution of the target species within the collection area should be compiled. The outcomes of the risk classification are then integrated into the resource management plan. This offers a structured and science-based approach to species conservation. Safeguards are also in place to prevent direct mortality and population decline of rare, threatened or endangered species. These include resource assessments, defined sustainable harvest levels, ongoing monitoring, and, where needed, restoration and regeneration measures to support long-term population recovery. Threatened species are either excluded from harvest or subject to strict conservation and management controls.
- ▶ **Consideration of customary rights:** FairWild specifies the need to respect IPLCs' customary rights to wild resources and traditional use and practice associated with these resources. The Standard explicitly seeks to ensure resources remain accessible for local and traditional use, and that local priorities and perspectives are respected. It also requires procedures in place for fair and equitable sharing of benefits with stakeholders. FairWild demonstrates a way for standards to integrate respect for the biodiversity considerations of local and customary laws and access and benefit-sharing.
- ▶ **Landscape consideration:** Where possible, the standard requires resource management planning to be integrated with other planning processes within the landscape. FairWild requires operators to consult with relevant authorities and stakeholders when developing the plan and to integrate relevant aspects of other actors' management plans into their resource management plan. This approach can facilitate the identification of conservation synergies and landscape approaches towards Nature Positive.
- ▶ **Adaptive resource management and monitoring:** FairWild requires ongoing resource monitoring and periodic review of management plans, with harvesting levels and practices adjusted based on field data. This adaptive management approach supports continuous improvement and aligns with Nature Positive principles of measurable status tracking and responsive management.
- ▶ **Site-specific ecological assessment:** FairWild requires site-level ecological assessments and management planning tailored to the target species and habitat conditions, rather than relying solely on generic practice requirements. This enables context-specific biodiversity safeguards and more precise risk mitigation.

FairWild's approach seeks to combine sustainable wild collection, with safeguards for threatened species, landscape protection and integration of IPLCs' rights and knowledge systems. This integrated approach can provide lessons for other standards in constructing and reviewing biodiversity principles, criteria and guidance.



A tea plantation worker plucks tea leaves in a plantation in the Nilgiris Hills, Tamil Nadu, India
Unsplash/Wandering India

4 Conclusions and recommendations

This study has sought to assess a set of standards relevant to dsm-firmenich and its suppliers and more broadly for buyers of natural ingredients across sectors against biodiversity criteria, to identify best practice in standards effectively supporting Nature Positive outcomes. The analysis intends primarily to support companies in navigating the wide offer of standards. A secondary objective is to provide guidance to standard bodies in refining provisions and practices to better support the Nature Positive goal. In the context that biodiversity is inherently complex, and no standard can perfectly capture this complexity, companies willing to deliver Nature Positive contributions are encouraged to consider the recommendations below.

Recommendations for dsm-firmenich and other companies

1) Select high-performing biodiversity-focused standards

dsm-firmenich already uses and promotes standards that advance biodiversity conservation among its suppliers. The company and UEBT have partnered to strengthen dsm-firmenich's natural ingredient sourcing since 2013. dsm-firmenich is also an RSPO member. Of the standards examined in this report, the company encourages suppliers to comply with RSPO, SAI FSA, UEBT Certified, Organic, Fair Trade, and Fair for Life (dsm-firmenich, 2024). dsm-firmenich also encourages suppliers to comply with FairWild.

Amongst the standards it already cites and works with, to forward biodiversity goals in agricultural practice, dsm-firmenich should prioritise RSPO, UEBT, and Fair for Life. These standards form part of a group of standards identified in our analysis with strong measures to address habitat loss, degradation, and biodiversity threats.

Similarly, it is recommended that other buyers of natural ingredients across sectors who are

evaluating standards for biodiversity provisions consider standards, like those in Group 1, which show strengths across a wide variety of biodiversity related criteria. Companies sourcing wild-collected ingredients should ensure governance mechanisms are in place to address biodiversity risks specific to wild harvesting systems.

2) Use complementary standards to maximise biodiversity and social outcomes

Despite the costs associated with using several standards, organisations could find it beneficial to use a combination of standards that complement each other well in terms of social and environmental provisions, to increase the overall sustainability of agricultural and collection practices.

For instance, Fairtrade-focused standards perform well on community engagement and Indigenous rights-related criteria, while the environmentally focused standards, like UEBT and Rainforest Alliance, perform well on biodiversity conservation criteria.

3) Adopt additional procurement requirements to address gaps in standards

Two of the standards in use by dsm-firmenich, RSPO and UEBT, substantially cover the biodiversity criteria of this study – a positive sign that dsm-firmenich is already forwarding standards which integrate biodiversity conservation well. This said, for dsm-firmenich, it is worth considering relative gaps in the standards, which could be addressed to further strengthen biodiversity provisions across its natural ingredient derived products.

For example, UEBT does not specifically require buffer zones around protected areas. It also places less emphasis on community engagement compared to other themes. dsm-firmenich should take this into consideration when using UEBT, and

could supplement the standard with additional measures to address this.

Similarly, other companies could address gaps identified in the standards they use by setting independent internal requirements. For example, since the standards show less focus on anthropogenic disease, fire control, and combating habitat fragmentation, companies could establish their own requirements within their supply chains to address these gaps.

4) Push for improvements in standards

Companies, as members and users of standards, play an integral role in enhancing standards and providing feedback on how they are applied. For example, many standards still inadequately address fire risks and anthropogenic-introduced disease. Standards often also lack criteria to support ecosystem and habitat connectivity. Finally, only some standards have special provisions to help small-scale producers and vulnerable groups overcome barriers to certification. Given that small-holder agriculture is the second biggest threat to terrestrial biodiversity (IUCN, 2024), it is important that small producers are encouraged to transition to more environmentally sustainable forms of agricultural practice. Companies should push standard-setting bodies to close these gaps in future standard versions.

Recommendations for standards to consider

While many standards contain important provisions for biodiversity conservation, some gaps remain. The following recommendations highlight priority areas for strengthening biodiversity criteria within standards. These suggestions are based on gaps identified across thematic areas and aim to support continuous improvement in sustainable practices. They are intended for consideration by standard-setting bodies, certification schemes, and supporting stakeholders seeking to enhance biodiversity outcomes through standard application.

1) Support landscape approaches towards Nature Positive

Few standards explicitly require consideration of biodiversity beyond the farm boundary. While standards understandably focus on on-farm practices, biodiversity does not adhere to administrative limits. The most effective interventions often occur at the landscape scale, through collaboration with neighbouring land users and stakeholders. It might not be appropriate for the standard to make such approaches a requirement, although standards should also consider how landscape-scale approaches can be better encouraged among their partners to maximise users' contributions to the Nature Positive goal.

2) Include species provisions

A limited number of standards include criteria related to the protection of rare, threatened, or endangered species. RSPO, Fair for Life, and the GAP biodiversity add-on are three standards which show best practice here, each having explicit requirements to protect rare, threatened, or endangered species. Standards should consider including explicit provisions for the conservation of rare, threatened, or endangered species, alongside existing provisions related to habitat, forest, and ecosystem conservation.

3) Extend provisions related to buffer zones

Standards can enhance ecological safeguards by requiring buffer zones around protected areas, in addition to those around water bodies. This would be a relatively simple change to make for UEBT, LEAF, GAP, Bio Suisse, and Naturland, who all currently lack this provision.

4) Promote habitat connectivity

Only three standards explicitly encourage measures to maintain or restore habitat connectivity such as ecological corridors. Yet, connectivity is essential for species migration, genetic exchange, and resilience. Standards can learn from the clear guidance

provided by RSPO and GAP on establishing corridors to construct their own criteria on habitat fragmentation and connectivity.

5) Comprehensively address threats to biodiversity

Standards should examine how they can encourage fire safety within farm sites. Fire is a serious threat to biodiversity, climate, and agricultural products. Yet, many standards have limited fire safety provisions.

Most standards also lack provisions for managing anthropogenic introduced diseases. Standards can strengthen Integrated Pest Management (IPM) criteria by including guidance to reduce the risk of anthropogenic introduced disease.

6) Improve international legal compliance

Standards with biodiversity criteria should have regard for international conventions relevant to biodiversity and agriculture, in particular the CBD and CITES, as these standards apply to the farm level. This could be done in a similar way to how many of the standards now integrate the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade. For these conventions, standards often have a criterion on the prohibition of use of hazardous chemicals as defined by these conventions and lists the relevant chemicals in an Annex within the standard. Better integration of the CBD and CITES into standard requirements would strengthen the legal coherence of biodiversity provisions and aid in the implementation of these international conventions.

7) Improve the consideration of local and customary laws and small holder integration

While most standards contain general social safeguards, few incorporate the biodiversity knowledge and practices embedded in local and customary laws. Standards should expand the scope of respect for local and customary laws to include how these communities value biodiversity.

This is essential for equitable conservation outcomes, legal compliance, and alignment with global biodiversity and Sustainable Development Goals. Standards can learn from the examples set by UEBT and Fair for Life.

As mentioned, only some standards have special provisions to help small producers and vulnerable groups overcome barriers to certification. Standard bodies should learn from the likes of RSPO and the Fairtrade standards to better support the certification of small producers under their standards.

8) Advance community engagement on biodiversity

Most standards could have stronger criteria, or at least guidance, encouraging sites to raise awareness among workers and local communities on biodiversity conservation. This is a relatively low-cost intervention with the potential for significant impact in improving the implementation of biodiversity conservation measures on the ground.

9) Promote conflict prevention

While nearly all standards have good grievance mechanisms to manage potential conflicts, few include proactive provisions to reduce the risk of conflict. Standards should consider whether to adopt measures similar to those encouraged by RSPO and UEBT, to balance sustainable livelihoods with the need to conserve ecosystems and consider local food security impacts of agricultural production. Even with measures in place to prevent conflict, in practice conflict prevention can be a significant challenge for agricultural certification schemes (Oya et al., 2017).

10) Integrate biodiversity and climate change action

Despite growing international recognition of the interdependence between climate change and biodiversity loss, and the vulnerability of agriculture to both, only a handful of standards explicitly connect the two. Standards should explore

opportunities to make their climate and biodiversity criteria mutually reinforcing, thereby maximising their contribution to both agendas.

11) Set polygon data and geolocation requirements

Fairtrade SPO and Rainforest Alliance show good practice in encouraging geo-mapping and polygon maps as tools to manage high-deforestation-risk areas. Geolocation data is essential to robust monitoring and reporting on biodiversity and other related outcomes such as deforestation and compliance with the EU Deforestation Regulations. Standards should consider introducing geolocation requirements for either all certified sites or for priority areas where biodiversity risks are highest.

12) Require robust strategic oversight mechanisms

Clear ownership and senior-level accountability are key to achieving strong biodiversity outcomes, yet some standards lack these oversight provisions. Standards should require the designation of a qualified biodiversity focal point and stipulate that this individual reports to senior management, where appropriate. This is a modest addition that could yield significant improvements in implementation.

13) Facilitate complementary use of standards and interoperability

Standards can lower costs for companies by promoting interoperability and enabling the complementary use of multiple standards. For instance, Bio Suisse waives certain audit requirements for producers who already hold valid certificates from Fairtrade Hired Labour, Fair for Life, FairWild, or Naturland standards. Expanding these recognition mechanisms reduces duplicated efforts and certification costs. Some organisations offer combined audits, where units are assessed against multiple standards simultaneously, which can further reduce costs.

14) Forward alignment with regulatory and voluntary frameworks

To improve usability and clarity for companies, standards should clearly identify how they align with relevant regulations (e.g. EU Organic Regulations, EU Deforestation Regulations) and voluntary frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD). This would assist corporates in fulfilling the multiple environmental requirements they now face. Naturland, for example, states its alignment with the EU Regulation 2018/848. More standards could follow suit to help users navigate overlapping requirements.

Closing reflections

Standards have a valuable role to play in biodiversity conservation, particularly when embedded within broader landscape-level efforts. To unlock their full potential, these standards should be strengthened through robust biodiversity criteria, improved alignment with global frameworks, and practical governance and interoperability measures. While the balance between stringent criteria and widespread adoption and implementation, especially among smallholders, remains a key consideration, advancing Nature Positive outcomes will require continual improvement.

This said, standards alone are not a panacea. Rather, they should be considered as essential tools within a broader strategy that includes legislation, education, capacity building, market incentives, and integrated landscape planning, among other measures. Standards are one part of a much larger puzzle and must be deployed alongside complementary measures to drive the sustainable and equitable transformation of global agricultural systems. As pressure grows to deliver Nature Positive outcomes, reinforcing the positive impact of these standards will be critical to meeting the rising expectations of consumers, companies, and policymakers alike.

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Annex A Short description of the standards assessed

Each of the standards selected have different focuses and objectives. To an extent this can explain the variability in biodiversity provisions: for some standards biodiversity is simply not

the driving focus. The table below provides brief summaries of each standard examined, drawing on information from the standard bodies themselves and the [International Trade Centre Standards Map](#).

VOLUNTARY STANDARDS		
	Standard	Description
1	Bio Suisse	Bio Suisse is the main organisation of organic agriculture in Switzerland. It covers agriculture, aquaculture, fisheries, floriculture and horticulture, forestry, livestock, manufactured products and processed food. Products include aquaculture, bananas, cereals, cocoa, coconut (fresh), coffee, cotton & fibers, fisheries, flowers, food & beverages, fruits, health, honey, households, nuts, other products, palm oil, plants, rice, soy, spices, sugar, tea, vegetables, and wild fishes.
2	Fair for Life	The Fair for Life Certification standard is a fair trade standard which seeks to promote responsible supply-chains that respect the environment within and along their supply-chains. It offers operators a brand neutral third-party inspection and certification in initial production, manufacturing and trading. The system is designed for both food and non-food commodities (like cosmetics, detergents, textiles, or tourist services). It covers agriculture, clothing, fisheries, forestry, livestock, manufactured products, processed food, and textiles.
3	Fairtrade Hired Labour Standard	This standard applies to organisations which rely on a hired workforce to supply Fairtrade certified products. The purpose of the Fairtrade Standard for Hired Labour is to set the requirements that determine participation in the Fairtrade system that applies to workers. It seeks to empower workers to combat poverty, strengthen their position and to take more control of their lives. The requirements seek to ensure that employers pay decent wages, guarantee the right to join trade unions, and make certain that health, safety and environmental principles are adhered to. The Fairtrade Standards also cover terms of trade. Most products have a Fairtrade Minimum Price, which is the minimum that must be paid to the producers. In addition, producers get an additional sum, the Fairtrade Premium, to benefit workers and invest in their communities. It covers agriculture, floriculture and horticulture, manufactured products, and processed food. Products include bananas, cotton & fibres, flowers, food & beverages, fruits, nuts, plants, spices, sugar, and tea.
4	Fairtrade Standard for Small-scale Producer	The Fairtrade Standard for Small-scale Producer Organisations (SPO) applies to organised small-scale farming groups. The Fairtrade SPO Standard aims to enable farmers and their cooperatives to become more resilient and build thriving businesses. The Fairtrade standards in general seek to ensure fairer terms of trade between farmers and buyers, protect workers' rights, and provide a framework for producers to build thriving farms and organisations. The key objectives of the Fairtrade Standards are to: ensure that producers receive prices that cover their average costs of sustainable production; provide an additional Fairtrade Premium which can be invested in projects that enhance social, economic, and environmental development; enable pre-financing for producers who require it; facilitate long-term trading partnerships and enable greater producer control over the trading process; set clear core and development criteria to ensure that the conditions of production and trade of all Fairtrade certified products are both socially and economically fair as well as environmentally responsible.

VOLUNTARY STANDARDS		
	Standard	Description
		The standards cover agriculture, manufactured products and processed food. Products include cereals, cocoa, coffee, cotton & fibres, food & beverages, fruits, honey, nuts, rice, spices, sugar, and tea.
5	GlobalG.A.P. BioDiversity Add-On	The GlobalG.A.P. BioDiversity Add-on specifies a set of science-based requirements which aim to help producers demonstrate their on-farm biodiversity management practices and retailers to identify suppliers that fulfil their corporate social responsibility pledges. It is designed to be paired with the Integrated Farm Assurance (IFA) for fruit and vegetables standard, the audit covers aspects such as soil and nutrients, land restoration measures, and integrated pest management. The add-on seeks to monitor and protect key on-farm biodiversity indicators, raising awareness and providing guidance on the development of a comprehensive biodiversity action plan. The standard is applicable to fruit and vegetable producers located in the European Economic Area (EEA).
6	LEAF Marque	LEAF Marque is an environmental assurance system to promote more sustainable farmed products. LEAF seeks to inspire and enable more circular approaches to farming through integrated, regenerative, and nature-based solutions, that deliver productivity and prosperity among farmers, enriches the environment, and positively engages young people and wider society. It covers agriculture, floriculture, horticulture, and livestock. Products include bananas, cereals, coconut (fresh), cotton & fibres, flowers, fruits, nuts, other products, palm oil, plants, rice, soy, spices, sugar, tea, and vegetables. This report analyses v16.1 of the LEAF Marque Standard. On 5 November 2025, v17.0, a new version of the LEAF Marque Standard was published. V17.0 contains several updates related to biodiversity. The new version will be effective from 5 May 2026.
7	Naturland Standards on Production	Naturland is an international association for organic agriculture with destination in Germany. It covers agriculture, floriculture and horticulture, and livestock. Products include bananas, cereals, cocoa, coconut (fresh), coffee, cotton & fibres, flowers, fruits, honey, nuts, other products, palm oil, plants, rice, soy, spices, sugar, tea, and vegetables.
8	Rainforest Alliance	Rainforest Alliance is a sustainable agriculture standard, which seeks to aid farmers in producing better crops, adapting to climate change, increasing their productivity, setting goals to achieve their sustainability performance and targeting investments to address their greatest risks. The requirements are designed to support certificate holders to maximise the positive social environmental, and economic impact of agriculture, while offering farmers an enhanced framework to improve their livelihoods and protect the landscapes where they live and work. The Standard covers agriculture, floriculture, and horticulture. Products include bananas, cereals, cocoa, coconut (fresh), coffee, flowers, fruits, nuts, palm oil, plants, spices, tea, and vegetables. It is one of the oldest agricultural standards, having been established in 1987.

VOLUNTARY STANDARDS		
	Standard	Description
9	RSPO	The RSPO has developed a set of environmental and social criteria which companies must comply with in order to produce Certified Sustainable Palm Oil (CSPO). When they are properly applied, these criteria can help to minimise the negative impact of palm oil cultivation on the environment and communities in palm oil-producing regions. RSPO covers the agriculture sector for palm oil products only.
10	SAI Platform's Farm Sustainability Assessment (FSA) Self-Assessment Questionnaire (SAQ)	SAI Platform's Farm Sustainability Assessment (FSA) is a toolset for farms and companies in agricultural value chains to help assess, improve and verify on-farm sustainability performance. Under the SAI FSA, the Self-Assessment Questionnaire allows users to self-assess the sustainability performance of a farm using an excel-based questionnaire. The Standard covers agriculture, floriculture and horticulture, livestock, and manufactured products. Products include bananas, cereals, cocoa, coconut (fresh), coffee, flowers, food & beverages, fruits, honey, nuts, other products, palm oil, plants, rice, soy, spices, sugar, tea, and vegetables.
11	UEBT Ethical Biotrade Standard	UEBT is a non-profit association that seeks to promote sourcing with respect for people and biodiversity. UEBT's objective is to support and verify companies' commitments to sourcing that contribute to a world in which all people and biodiversity thrive. UEBT sets good practices for how companies and their suppliers source ingredients from biodiversity. The UEBT standard defines practices for sourcing of ingredients from biodiversity that seek to regenerate local ecosystems and secure a better future for producers. The standard is applicable to a wide variety of production systems, including cultivation and wild collection. The Standard covers agriculture, floriculture and horticulture, forestry, and manufactured products. Products include cosmetics, flowers, food, and beverages, fruits, health products, honey, nuts, plants, spices, sugar, tea, and vegetables.
REGULATORY FRAMEWORK		
12	EU Organic Regulation (EU) 2018/848	Regulation (EU) 2018/848 establishes the principles of organic production and lays down the rules concerning organic production, related certification and the use of indications referring to organic production in labelling and advertising, as well as rules on controls additional to those laid down in Regulation (EU) 2017/625. Sectors covered include agriculture, fisheries, floriculture and horticulture, livestock, manufactured products, and processed food. Products include aquaculture, bananas, cereals, cocoa, coconut (fresh), coffee, cosmetics, cotton & fibres, floriculture products, flowers, food & beverages, fruits, health, honey, nuts, other products, palm oil, plants, rice, soy, spices, sugar, tea, vegetables, and wild fishes.

Annex B Table of results for biodiversity criteria

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE STANDARD HL	FAIRTRADE STANDARD SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE STANDARD	NATURLAND STANDARDS ON PRODUCTION	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
BIODIVERSITY CONSERVATION MEASURES AND PROCESSES											
Requirements prior to significant intensification or expansion of cultivation, infrastructure or processing											
Q1 Does the standard require the identification of biodiversity values that would be potentially affected by operations, and the assessment of potential impacts on those biodiversity values?	Strong	Strong	Good	Good	Strong	Strong	Good	Strong	Strong	Strong	Strong
Q2 Does the standard require identification of measures to maintain or minimise and mitigate negative impacts from operations on biodiversity values?	Strong	Strong	Strong	Strong	Strong	Strong	Good	Strong	Strong	Strong	Strong
Q3 Does the standard specify any particular measures to be applied in given circumstances to minimise and mitigate negative impacts from operations on biodiversity values?	Strong	Strong	Good	Strong	Strong	Strong	Good	Strong	Strong	Strong	Good
Requirements after expansion of cultivation or infrastructure – for existing plantations, infrastructure and processing operations											
Q4 Does the standard require regular monitoring and reporting on implementation of plans for biodiversity conservation?	Strong	Strong	Medium	Good	Strong	Strong	Medium	Strong	Strong	Good	Strong
Q5 Does the standard require regular monitoring of actual impacts on biodiversity and adaptive management as necessary for improvement?	Good	Medium	Medium	Medium	Strong	Strong	Weak or insufficient information	Strong	Strong	Medium	Strong
HABITAT LOSS AND DEGRADATION											
Q6 Is the standard explicit in requiring the protection of all natural ecosystems that are important for species survival?	Strong	Strong	Good	Good	Strong	Strong	Good	Strong	Strong	Good	Strong

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE STANDARD HL	FAIRTRADE STANDARD SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE STANDARD	NATURLAND STANDARDS ON PRODUCTION	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q7 Does the standard require protection of ecosystems providing services critical for offsite biodiversity conservation?											
Q8 Does the standard exclude any agricultural development in protected areas?											
Q9 Does the standard require the maintenance of buffer zones around protected areas?											
Q10 Does the standard require that representative areas of native ecosystems in the management unit be actively conserved?											
HABITAT FRAGMENTATION AND CONNECTIVITY LOSS											
Q11 Does the standard require protection of corridors of natural vegetation where these are critical for connectivity between habitats, to avoid fragmentation of ecosystems (e.g. large landscape-level ecosystems/HCV 2 areas)?											
DIRECT MORTALITY (OF RTE SPECIES)											
Does the standard require that particular threats be considered and mitigated in agricultural production, for example:											
Q12 Overexploitation?											
Q13 Pollution?											
Q14 Invasive species?											
Q15 Anthropogenic introduced disease?											
Q16 Fire?											
ANTHROPOGENIC CLIMATE CHANGE, WITH INDIRECT IMPACTS ON BIODIVERSITY											
Q17 Does the standard reference High Carbon Stock (HCS) forest?											

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE STANDARD HL	FAIRTRADE STANDARD SPO	GLOBAL G.A.P. BIODIVERSITY	LEAF MARQUE STANDARD	NATURLAND STANDARDS ON PRODUCTION	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q18 Does the standard require the protection of significant carbon stocks?	Medium	Good	Medium	Strong	Weak or insufficient information	Good	Medium	Weak or insufficient information	Strong	Medium	Strong
Q19 Does the standard require monitoring and control of GHG emissions from land use change?	Good	Medium	Medium	Medium	Weak or insufficient information	Strong	Weak or insufficient information	Medium	Strong	Good	Good
Q20 Does the standard require monitoring and control of GHG emissions from production operations?	Good	Good	Good	Good	Good	Strong	Weak or insufficient information	Medium	Strong	Good	Strong
Q21 Does the standard allow for linking of emissions reductions to national targets?	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information
RESTORATION											
Q22 Does the standard require restoration of natural habitats where their past conversion for agricultural production contravenes the requirements of the standard and/or national legislation?	Medium	Strong	Good	Good	Strong	Good	Medium	Strong	Strong	Good	Strong
Q23 Does the standard require restoration of land, natural water bodies or riparian vegetation damaged as a result of agricultural production in contravention of the requirements of the standard and/or national legislation?	Medium	Strong	Good	Good	Strong	Good	Medium	Strong	Good	Good	Good
LEGALITY											
Q24 Does the standard include requirements to comply with relevant international conventions (e.g. Ramsar Convention, CITES)?	Medium	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Weak or insufficient information	Good	Weak or insufficient information	Medium	Strong	Weak or insufficient information	Strong
Q25 Does the standard explicitly require compliance with national legislation on conservation of biodiversity (where these requirements are more rigorous or restrictive than those of the voluntary standard)?	Good	Strong	Strong	Strong	Good	Strong	Strong	Strong	Strong	Strong	Strong

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE STANDARD HL	FAIRTRADE STANDARD SPO	GLOBAL G.A.P. BIODIVERSITY	LEAF MARQUE STANDARD	NATURLAND STANDARDS ON PRODUCTION	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
Q26 Does the standard require respect for local and customary laws providing for conservation of biodiversity (where these requirements are more rigorous or restrictive than those of the voluntary standard)?											
COMMUNITY ENGAGEMENT FOR BIODIVERSITY CONSERVATION											
Q27 Does the standard include requirements for raising the awareness of workers, smallholders, and local communities on biodiversity conservation?											
Q28 Does the standard make special provision for disadvantaged small producers, enabling them to overcome barriers to certification and participate in certified supply chains, thereby engendering their support for biodiversity conservation?											
Q29 Does the standard require project developers to engage with local communities on biodiversity conservation?											
Q30 Does the standard include a requirement to identify and manage potential conflicts between social/community needs/ livelihoods and biodiversity conservation?											
ADDITIONAL QUESTIONS											
Q31 Does the standard require exploration of the links between biodiversity loss and climate change?											
Q32 Does the standard require consideration of access and benefit-sharing?											
Q33 Assesses no deforestation, no peat, no exploitation' (NDPE) principles?											
Q34 Governance: Is there an owner of the biodiversity actions required by the standard? Is senior buy-in sought?											

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information

Annex C Overview of how standards align with the biodiversity criteria

	BIO SUISSE	FAIR FOR LIFE	FAIRTRADE STANDARD HL	FAIRTRADE STANDARD SPO	GLOBALG.A.P. BIODIVERSITY	LEAF MARQUE STANDARD	NATURLAND STANDARDS ON PRODUCTION	RAINFOREST ALLIANCE	RSPO	SAI FSA SAQ	UEBT
BIODIVERSITY CONSERVATION MEASURES AND PROCESSES	Strong	Strong	Good	Good	Strong	Strong	Medium	Strong	Strong	Good	Strong
HABITAT LOSS AND DEGRADATION	Good	Strong	Good	Good	Strong	Strong	Good	Strong	Strong	Good	Strong
HABITAT FRAGMENTATION AND CONNECTIVITY LOSS	Strong	Medium	Good	Good	Strong	Good	Medium	Medium	Strong	Good	Good
DIRECT MORTALITY OF RARE, THREATENED OR ENDANGERED SPECIES	Good	Good	Good	Medium	Good	Good	Medium	Good	Good	Strong	Good
ANTHROPOGENIC CLIMATE CHANGE, WITH INDIRECT IMPACTS ON BIODIVERSITY	Medium	Medium	Medium	Good	Medium	Good	Weak or insufficient information	Medium	Good	Medium	Good
RESTORATION	Medium	Strong	Good	Good	Strong	Good	Medium	Strong	Strong	Good	Strong
LEGALITY	Good	Good	Good	Good	Medium	Good	Good	Good	Strong	Good	Strong
COMMUNITY ENGAGEMENT FOR BIODIVERSITY CONSERVATION	Good	Strong	Strong	Strong	Good	Medium	Medium	Good	Strong	Good	Good
ADDITIONAL QUESTIONS	Medium	Good	Good	Good	Medium	Medium	Medium	Good	Medium	Medium	Strong

Note: The table provides the average qualitative category (strong, good, medium, weak) of the standard against each criteria heading.

■ Strong
 ■ Good
 ■ Medium
 ■ Weak or insufficient information



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