

Setting a New Bar for Deforestation- and Conversion-free Soy in Europe

Independent benchmark of soy standards on essential sustainability requirements

Pavel Boev, Jan Willem van Gelder

24 August 2023

About this report

This report was commissioned by WWF Germany and IUCN National Committee of the Netherlands (IUCN NL) to update and expand the 2019 Soy Voluntary Sustainability Standards benchmark (also developed by Profundo) to better reflect the ongoing changes in market expectations, the regulatory environment, and within the VSS themselves.

This publication was produced in the context of the joint project “Tackling the main drivers of the deforestation and conversion in Brazil” by WWF Brazil and WWF Germany. This project is funded by the Federal Ministry for Economic Cooperation and Development (BMZ) supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The content of this study is the sole responsibility of the authors.



About Profundo

With profound research and advice, Profundo aims to make a practical contribution to a sustainable world and social justice. Quality comes first, aiming at the needs of our clients. Thematically we focus on commodity chains, the financial sector and corporate social responsibility. More information on Profundo can be found at www.profundo.nl.

Authorship

This report was researched and written by Pavel Boev and Jan Willem van Gelder, with contributions by Barbara Kuepper. Correct citation of this document: Boev, P., and J.W. van Gelder (2023, June), *Setting a New Bar for Deforestation- and Conversion-free Soy in Europe*, Amsterdam, The Netherlands: Profundo.

Or in case of quick citation: Profundo (2023) Setting a New Bar for Deforestation- and Conversion-free Soy in Europe, Amsterdam: Profundo.

Front page cover photograph by João Pedro Schmitz on Unsplash.

Acknowledgements

The authors would like to thank the representatives of the voluntary sustainability standards for their time and cooperation on the self-assessment process and data provision. The authors would also like to extend their gratitude to Jinke van Dam and Christof Walter for reviewing the scores and providing their expertise on governance and assurance.

Disclaimer

Profundo observes the greatest possible care in collecting information and drafting publications but cannot guarantee that this report is complete. Profundo assumes no responsibility for errors in the sources quoted, or for changes after the date of publication. When any error in this report comes to light, Profundo will promptly correct it in a transparent manner.

Contents

Summary	1
Abbreviations.....	2
Introduction. Setting a new bar: why?	3
Chapter 1 Research approach and methodology	5
1.1 Assessment scope.....	5
1.2 Assessment criteria	6
1.2.1 Avoiding deforestation and conversion of natural ecosystems	7
1.2.2 Avoiding degradation of natural ecosystems and biodiversity loss.....	7
1.2.3 Social issues and human rights	8
1.2.4 Traceability	8
1.2.5 Governance and level of assurance	9
1.3 Research process.....	10
1.4 Scoring methodology	10
Chapter 2 VSS Performance	11
2.1 Overall results	11
2.2 Avoiding deforestation and conversion.....	14
2.3 Avoiding degradation of natural ecosystems and biodiversity loss.....	17
2.4 Social issues and human rights	21
2.5 Traceability	24
2.6 Governance and level of assurance	26
Chapter 3 Conclusions and recommendations	29
3.1 Conclusions	29
3.2 Recommendations	31
3.2.1 To voluntary sustainability standards.....	31
3.2.2 To regulators.....	31
3.2.3 To downstream buyers and financial institutions.....	32
References.....	33

List of figures

Figure 1 VSS benchmarking, scoring results for all categories	12
Figure 2 VSS assessed against no-deforestation and no-conversion criteria	15
Figure 3 VSS assessed against landscapes and biodiversity criteria	19
Figure 4 VSS benchmarking, scoring results for the social criteria	22
Figure 5 VSS benchmarking, scoring results for traceability	25
Figure 6 VSS benchmarking, scoring results for governance and level of assurance.....	27

List of tables

Table 1 Overview of VSS included in the benchmark..... 5

Table 2 Cut-off dates for zero deforestation and conversion..... 16

Summary

This report benchmarks the European Feed Manufacturers' Federation Soy Sourcing Guidelines (FEFAC SSG) and 20 Voluntary Standard Systems (VSS) that currently pass the FEFAC SSG threshold against a set of 49 basic provisions and 11 additional requirements that cover the most important sustainability topics in the soy industry. These are deforestation and ecosystem conversion, landscapes and biodiversity, social issues and human rights, traceability, and governance and assurance. The criteria are based on EU Deforestation Regulation (EUDR), Accountability Framework Initiative (AFi) Core Principles, the upcoming EU Corporate Sustainability Due Diligence Directive (CSDDD), and FEFAC SSG. The criteria related to avoiding deforestation, wetland and grassland conversion and degradation of High Conservation Value (HCV) areas and other valuable natural areas were developed in cooperation with WWF Germany.

The benchmark is a snapshot of the current status and shows where standards are now and in which areas they need to improve. Thus, 20 standards already go beyond legality in their no-deforestation and no-conversion requirements, and it is only SODRU that still relies on legal requirements in the production countries. US Soy, ISCC Plus and ISCC EU do not cover all ecosystems in their no-conversion criteria, but already include credible no-deforestation requirements.

In other categories, the VSS performance varies considerably. Generally, independent multistakeholder-governed standards perform better than the corporate ones across all categories.

Traceability emerged as the topic that requires the most attention, as it is the only category where five of the VSS met none of the assessment criteria. These include SODRU, US Soy, Cefetra's CRS, POFARM and SFAP. However, it may well be that some of them do not have the ambition to deliver soy accordingly and decided for other Chain of Custody (CoC) models.

Most assessed voluntary standards are gradually adapting to the new EU regulation on deforestation-free products. However, some are more prepared and already now demonstrate compliance with EUDR. These include RTRS, ISCC Plus and ISCC EU, and Cargill Triple S. More standards that already ask for geolocation or high-resolution maps will be able to become compliant by adding a requirement that geo-references for soy production units should be stored for at least five years.

Currently, EUDR does not cover conversion of other wooded land or other ecosystems. At the same time, AFi already requires that natural ecosystems are not converted to agricultural areas and that they are not subject to severe or sustained degradation. 18 of the VSS require no conversion of any natural ecosystems, making them at least partially compliant with AFi on this criterion, and six (RTRS, Donau Soja, Europe Soya, ADM, Amaggi and LDC) also ask for compensation measures and require either geo-references or high-resolution maps – which makes them fully compliant with the AFi no conversion principles. It should be noted, however, that AFi has many more criteria across 12 Core Principles, only a fraction of which have been used in this benchmark. Full compliance with AFi across all the criteria is still a long way to go for many voluntary standards.

Standards are part of a bigger toolbox for companies (for example, they can be used for compliance with legislative requirements) but offer much more benefits in order to help them drive their sustainability agenda in their supply chains and sourcing areas. The comprehensive ecological and social criteria that they offer prompt companies to take on their responsibility for understanding and knowing their supply chains and managing them more sustainably for the long-term benefits of their business, the environment, and society.

Abbreviations

AFi	Accountability Framework initiative
DCF	Deforestation and conversion-free
EU	European Union
EU CSDDD	EU Corporate Sustainability Due Diligence Directive
EUDR	EU Regulation to Minimise EU-driven Deforestation and Forest Degradation
EU DR IR	Implementation Regulation on EU DR
EU RED	EU Renewable Energy Directive
FEFAC SSG	European Feed Manufacturers' Federation Soy Sourcing Guidelines
FPIC	Free, Prior and Informed Consent
GDP	Gross Domestic Product
HCS	High Carbon Stock
HCV	High Conservation Value
ISCC	International Sustainability and Carbon Certification
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Areas
MRV	Measurement, Reporting, and Verification (system)
RTRS	Round Table on Responsible Soy
UNESCO	United Nations Educational, Scientific and Cultural Organization
VSS	Voluntary Standard Systems
WHO	World Health Organization
WWF	World Wide Fund for Nature

Introduction. Setting a new bar: why?

Soy is often overlooked by end consumers as well as downstream food producers of animal products, as it is used as a feed ingredient for livestock. Soy is therefore often present in animal products such as chicken, pork, beef, and farmed fish, as well as in eggs, milk, cheese, and yoghurt, even though it is not on the ingredients list. Due to its high protein content, soy has become a key component of animal feed. A total of 75% of the world's soy production is used as animal feed. All of 388 million tonnes of soybeans are grown on approximately 130 million hectares worldwide (FAOSTAT 2021, European Soy Monitor 2021). Compared to the approximately 20 million hectares of palm oil and its presence in the sustainability debate among companies and politicians, the footprint of soy has so far been less prominently featured. As the world population is estimated to grow to ten billion by 2050, soy production is expected to continue to increase to meet the demand for animal-based foods, especially in the large emerging economies. Although soy can be produced sustainably, global demand for low-cost feed for intensive livestock production has contributed (alongside cattle rearing and other factors) to the rapid loss of some of the world's most essential and biodiverse ecosystems. After the Amazon, more recently affected biomes have included the Cerrado, Atlantic Rainforest, Gran Chaco and Chiquitania in South America, and the Great Plains in North America. The African savannahs and native grasslands in Central Asia are also increasingly affected by soy expansion.

The large-scale conversion of natural vegetation also affects soy harvests themselves over time by altering climatic conditions, and thus threatening the long-term resilience of agricultural production. Furthermore, the general production model of soy includes an intense use of chemicals which, if not well managed, can lead to soil and water pollution.

Deforestation and conversion-free (DCF) sustainable soy production is not "recommended" but is a "major must" for ecological, economic and social reasons. The word is out that we need a better balance between animal and plant-based protein from a climate and resource efficiency point of view. However, soy will continue to be used for part of the animal feed and the question is for soy – as feed and for direct human food consumption – can it be produced sustainably? Without deforestation and ecosystem conversion, with respect for land and labour rights, while applying responsible practices such as in its management of chemicals? Large-scale, landscape-, and biome-wide measures as well as clean supplier solutions to combat deforestation and conversion urgently need to be applied, in addition to farm level sustainability solutions. The question is how to combine tools in a constructive manner and in different contexts. We believe that soy sustainability standards will continue to have an important role to play in supply chains as well as landscape programmes, and that they can make an important contribution in the new European legislative context and in deforestation and conversion-free company strategies.

When IUCN NL commissioned the former Profundo soy standard benchmark study (published in 2019), it was meant to provide clarity to the market about the differences between the many standards that had passed the test of the FEFAC soy sourcing guidelines (SSG). Only 7 out of 17 could be called deforestation-free for example. The deforestation requirement was also important distinguishing information within the European Soy Monitor that IUCN NL started off together with IDH The Sustainable Trade Initiative in the same year. Benchmarking can help as a heads-up. FEFAC has improved its guidelines in 2021. For example, its SSG 2021 require the public availability of standard documents, it aligned its definitions with AFi, and several desired criteria became essential. FEFAC also started to provide clarity if a standard had a deforestation and conversion-free requirement and about cut-off dates. Almost all standards have improved their deforestation and conversion-free criteria. Yet, there still are significant differences among the – now 20 – FEFAC SSG approved standards, especially on other aspects than deforestation and conversion which we seek to obtain and provide insights on with this new publication. This report should inform our own advice to companies, financial institutions, governments, and NGOs, and we hope it is a useful source of information for everyone.

The recently adopted EUDR that will have to be applied by 2024/25, requires traders/operators to provide traceability to plot level and a due diligence statement about legal compliance in the country of origin and production without deforestation. The EUDR thus far applies to 7 commodities including soy. A major achievement in order to create a level playing field in the EU, but in the battle for its establishment as a mandatory tool – existing successful verification tools to deliver the law were not recognized or even downplayed. In addition, achievements in establishing more extensive sustainability criteria for soy were not acknowledged. Certification in the regulation text is recognized as a source of due diligence information, but robust, third-party verification of legality and deforestation free production for example is not mentioned as an important requirement to be a trustworthy source of information.

We think it is time for the re-evaluation and revaluation of the important and multiple contributions that robust soy standards can make as a verification tool of sustainability within the new mandatory setting in the EU and beyond.

Companies placing products on the EU market according to the EUDR now have the responsibility of ensuring legal, deforestation-free products that are traceable to plot level. The EU also adds a layer of government control of the due diligence statements through samples from competent authorities in its Member States. Enforcement of the regulation and its impacts on forests and ecosystems in producing countries will depend essentially on the perseverance of these national control authorities. But who controls deforestation and ecosystem conversion, or the many (also social) aspects that legality implies? As companies now focus primarily on implementation of the EUDR, many other sustainability impacts are in danger of being overlooked, such as responsible management and scaling down of chemicals, responsible labour and community relations, good agricultural practices in terms of soil and water management. Even if deforestation and ecosystem conversion is a major driver of biodiversity loss and its emissions contribute to climate change, so is pollution, soil erosion and water scarcity: What is done on a farm to manage these aspects? Robust standard systems can provide an important service in the toolbox for compliance with the EUDR but also – and more importantly – with the requirements of a broader due diligence agenda.

In our daily conversations we often discuss the value of different CoC models. To enable EUDR compliance, for example on traceability, various standards are still adapting, also in the year to come. We hope to be able to add a short update next year on what's new on the market as tools for EUDR compliance, in relation to the standards discussed.

Now that we have a level playing field in the EU, we can and should strive for EUDR Compliance Plus. Either through physical supply chains that are fully certified according to integrated environmental and social criteria, or partly so, blending in a certain – realistic yet ambitious – percentage of fully certified soy within verified EU compliant soy over time. Furthermore, we can add value in risk landscape programmes such as in Cerrado and Chaco, by promoting and rewarding responsible producers, for example with credits for each tonne of their certified production, primarily to value conversion-free sustainable agricultural practices, but also to enable the blending – over time – of this fully certified production into the physical value chains in all directions, not just the EU. According to FEFAC SSG, 40% of the European soy footprint is already certified, applying different CoC models. Under the standards that verify deforestation-free soy, 24% are certified by standards that were identified by the former Profundo benchmark in 2019 (European Soy Monitor, 2021).

Why take a step back on other criteria while moving forward on traceability? Why not try to combine the best of the mandatory and voluntary world? This can be done now. DCF sustainable production should become the norm in all global trade, and standards can help verify this – as tools in the toolbox of responsible companies and governments.

Maja-Catrin Riecher, advisor agricultural commodities, WWF Germany.

Heleen van den Hombergh, senior advisor agrocommodity governance, IUCN NL.

1

Research approach and methodology

The benchmark assesses twenty voluntary standard systems and the European Feed Manufacturers Soy Sourcing Guidelines (FEFAC SSG) against a wide range of environmental, social and governance criteria. This Chapter outlines these criteria and explains the assessment and scoring processes.

1.1 Assessment scope

First published in 2015, and updated in 2021, the European Feed Manufacturers' Federation (FEFAC) has defined Soy Sourcing Guidelines (SSG) that include agricultural, environmental, and social criteria for what the European feed industry considers to constitute 'responsible soy'. By now, 20 voluntary standard systems (VSS) have passed as SSG-compliant in the assessment programme managed by the International Trade Centre (ITC).¹ FEFAC sets certain minimum requirements for standards for the European feed industry, but the standards recognised there represent a wide range of aspirations.

While some of these VSS are solely focussed on soy, others apply to various crops and products. Moreover, VSS can apply to any producer or economic actor who meets their criteria. Such VSS may be incorporated as company or independent standards, which are often member-based multi-stakeholder organisations. The first category includes VSS owned by producers or traders that only apply to soy produced, processed, transported, or traded by this particular company, while the second one is usually open to all eligible economic actors. The table below illustrates all the VSS covered by this benchmark, (Table 1).

Table 1 Overview of VSS included in the benchmark

Voluntary Standard System	Organisation	Scope
FEFAC Soy Sourcing Guidelines 2021	Industry	Soy only
ADM Responsible Soybean Standard	Producer/Trader	Soy only
Agricultura Sustentable Certificada + Module on Non-conversion	Industry	Soy only
Amaggi Origins Field	Producer/Trader	Various
Bunge Pro-S Assuring Sustainable Sourcing	Producer/Trader	Various
CSQA Sustainable Cereal and Oilseed Standard (DTP 112)	Company	Various
Cargill Triple S Soya Products	Producer/Trader	Soy only
Cefetra Certified Responsible Soya Standard (CRS)	Producer/Trader	Soy only
Donau Soja	Multi-Stakeholder	Soy only
Europe Soya	Multi-Stakeholder	Soy only
FEMAS Responsible Sourcing Module 2021	Industry	Various
ISCC EU	Multi-Stakeholder	Various
ISCC Plus	Multi-Stakeholder	Various

Voluntary Standard System	Organisation	Scope
Louis Dreyfus Company (LDC) Program for Sustainable Agriculture	Producer/Trader	Soy only
PROFARM Production Standard	Company	Various
ProTerra Europe	Multi-Stakeholder	Various
ProTerra Foundation	Multi-Stakeholder	Various
Round Table on Responsible Soy Association (RTRS)	Multi-Stakeholder	Soy only
SODRU Sustainable Soy	Producer/Trader	Soy only
Sustainable Farming Assurance Programme – Non-Conversion (SFAP)	NGO	Soy only
U.S. Soy Sustainability Assurance Protocol (SSAP)	Industry/Government	Soy only

The 20 FEFAC SSG-compliant VSS as well as the FEFAC Soy Sourcing Guidelines 2021 itself were included in this benchmarking exercise. It applies a set of environmental, social and governance criteria to assess the robustness of schemes used in the European soy supply chains.

1.2 Assessment criteria

The objective of this research is to expand and update the 2019 benchmark of the FEFAC SSG-compliant VSS, undertaken by Profundo for IUCN NL. Since then, a larger number of VSS have qualified under the FEFAC SSG, there have been various changes in the SSG as well as in the requirements of the different VSS, but also some essential regulatory developments.

The 20 VSS and FEFAC SSG were benchmarked against 49 basic provisions and 11 additional requirements that focus on the objective of achieving deforestation and conversion-free soy production, safeguarding of human rights, ensuring CoC transparency and traceability, and a high assurance level.

Basic provisions cover the most important features of a particular issue (for example, a requirement that producers are not allowed to introduce or use invasive alien species in the management unit). Additional requirements add another level of detail, or show what a VSS can do on top of the basics (for example, to take effective action to limit any damage caused where invasive species are already present). Additional requirements were used in the analysis; however, they were not included in the calculation of the total score, which relies entirely on the basic provisions. Some standards (like RTRS) work with different CoC options, and some (like ISCC) work with many modules, and in that case, it is especially important to know and be clear about the issues covered and claims made. For this research, the VSS that provided documented evidence that they achieve physical segregation for all their soy were awarded a full score (1 point). Those that can achieve it for a specific module received 0.5 points. Understanding the costs attached to full segregation, which may be a significant barrier for many producers in South America, the authors believe that full DCF sustainability should be a long-term vision.

The updated criteria consider current best practices, market expectations, and the changed regulatory environment. In particular, the assessment evaluates if the VSS:

- complies with the criteria of the EU Deforestation Regulation (EUDR), which includes criteria related to deforestation-free production, legality, and traceability;
- is in line with the key criteria of the proposed Corporate Sustainability Due Diligence Directive (CSDDD) regulation on human rights and legality, based on key principles that are expected to be part of it;
- is compatible with the Accountability Framework Initiative (AFi) guidance on delivering soy supply that is conversion-free and in compliance with human rights;

- is compatible with ISEAL criteria for evaluating assurance of control on compliance with the aforementioned sets of criteria.

As for the EUDR, it should be borne in mind that there are still questions on detailed interpretation, which may lead to detailed adaptations in the standards and EUDR verification modules they offer within the next 12 months. The report authors are planning to give an update on such provisions in 2024.

The criteria used in our benchmark related to avoiding deforestation, wetland and grassland conversion and degradation of High Conservation Value (HCV) areas and other valuable natural areas were updated in cooperation with WWF Germany.

The assessment criteria are listed per theme in the following sub-sections.

1.2.1 Avoiding deforestation and conversion of natural ecosystems

1. Producers are not allowed to produce soy on land that has been deforested (whether human-induced or not) and are not allowed to deforest land for expansion.
2. Producers are not allowed to produce soy on land where other natural ecosystems have been converted (whether human-induced or not) and are not allowed to convert natural ecosystems for expansion.

1.2.2 Avoiding degradation of natural ecosystems and biodiversity loss

1. Producers are not allowed operations in or impacting protected areas (IUCN I-VI).
2. Producers are not allowed operations in or impacting UNESCO World Heritage sites (both natural and cultural).
3. Producers are not allowed operations in or impacting Ramsar Wetlands.
4. If any alteration of protected areas has taken place, producers have to restore such areas to their former state or producers should take legally approved compensating actions.
 - Additional requirement: Details on the quantity, quality, and permanence of the compensation.
5. Producers are required to identify natural vegetation and biodiversity values on their land and in the surrounding areas, potentially affected by their operations, including around bodies of water (riparian vegetation and flood plains) and on areas sensitive to erosion (steep slopes and hills).
 - Additional requirement: Regularly monitor impacts on biodiversity and adapt management approach as necessary for improvement
6. Producers are required to take measures to minimise and mitigate negative impacts from operations on on-farm biodiversity values, such as wildlife or native vegetation.
 - Additional requirement: Measures to minimise and mitigate negative impacts from operations outside the management area. Timebound plan for biodiversity management. Plan to protect and recover native vegetation.
7. Producers are required to provide details of the locations of identified, high conservation value (HCV) or high biodiversity value areas upon request by relevant stakeholders.
 - Additional requirement: Map of the management area which shows the HCV areas or native vegetation.
8. Producers are required to protect rare, threatened, and endangered species and their habitats within as well as outside the management unit.
9. Producers are not allowed to use hazardous chemicals (as defined by WHO Class Ia, Ib, and II, and the Stockholm and Rotterdam conventions)
 - Additional requirement: Recording agrochemical use and application.
10. Producers are required to ensure that any use of biological control agents complies with internationally recognised standards and/or protocols.

11. Producers are required to implement integrated pest management practices that minimise or avoid the use of agrochemicals.
 - Additional requirement: Promotion of native predators.
12. Producers must minimise impact on wetlands and ground water quality from chemical residues, fertilisers, erosion or other sources.
 - Additional requirement: Requirement of evidence of proper management/handling agrochemical waste.
13. Producer activities must not degrade areas where forest restoration or threatened wildlife re-introduction is taking place.
14. Producers are not allowed to introduce or use invasive alien species in the management unit.
 - Additional requirement: Requirement to take effective action to limit any damage caused where invasive species are already present.
15. Producers must ensure that soil quality is maintained, and measures are taken to avoid erosion.
16. Producers are not allowed to use an irrigation system that causes degradation of wetland and other ecosystems in the surrounding and the downstream area.

1.2.3 Social issues and human rights

1. Economic actors must pay a decent wage.
2. Economic actors must pay a living wage.
3. Economic actors must ensure a decent living, safe and healthy working conditions, and reasonable limitation of working hours for workers employed regardless of the form of employment.
4. Economic actors must have a gender-sensitive zero tolerance policy towards all forms of discrimination and violence.
5. Economic actors must uphold the rights to freedom of association and collective bargaining.
6. Economic actors are required to make sure that no forced labour and any form of slavery, practices akin to slavery, serfdom or other forms of domination or oppression in the workplace, are present throughout the entire supply chain.
7. Economic actors must not employ children under the age at which compulsory schooling is completed and, in any case, is not less than 15 years.
8. Producers must respect the rights and livelihoods of Indigenous peoples to give or withhold Free, Prior and Informed Consent (FPIC) if those could be affected by planned operations.
9. Companies and their suppliers must respect the right of all communities with customary land rights to give or withhold Free, Prior and Informed Consent (FPIC) if they could be affected by planned operations.
10. Producers are not allowed to unlawfully evict or take land, forests and waters when acquiring, developing or otherwise use land, forests, and waters.
11. Producers are required to provide compensation for negative impacts of operations on local communities and individuals.

1.2.4 Traceability

1. Economic actors are required to collect the geographic coordinates (or geolocation via latitude and longitude) of all the plot(s) of land where soy was produced and keep this information for 5 years.
2. Economic actors are able to follow soy, and the sustainability information assigned to it, through all stages of the supply chain (e.g., production, processing, manufacturing, and distribution).
3. The standard has a (separate, or embedded) mechanism to verify compliance with the EU Deforestation Regulation
4. Economic actors must keep certified streams segregated from non-certified supplies.

1.2.5 Governance and level of assurance

1. Production must occur in accordance with the relevant legislation of the production country.
2. The VSS is an independent legal entity.
 - Additional requirement: Accredited certification bodies
3. The governance structure and decision-making of the VSS includes a broad range of representatives from relevant stakeholder groups. No individual stakeholder or stakeholder group has a dominant position in the decision-making process.
4. VSS requirements are reviewed regularly.
5. The VSS has procedures in place on how to deal with different degrees of non-conformities by economic operators.
 - Additional requirement: Detailed provision that non-compliance identified during certification and surveillance audits must be rectified within a set timeframe that does not exceed one year.
6. Certificate holders whose certificates are suspended shall not be able to make sustainability claims until the suspension has been lifted.
7. The VSS has a system of internal monitoring in place to verify compliance of economic operators with the rules and procedures applied by the scheme and to ensure the quality of the work carried out by the auditors of the certification bodies. Internal monitoring is undertaken at least once a year.
8. The VSS has clear procedures in place for the lodging of complaints against economic operators or certification bodies. The complaints procedure shall be easily accessible, equitable, and responsive.
9. The VSS publicly provides information (on a website, free of charge) on its governance and funding, standard documents, scheme criteria, certificate holders, certification bodies and annual activities.
10. The VSS defines the qualifications, competency, and minimum industry audit experience and training requirements.
11. The VSS requires that the economic actors are certified by independent and qualified auditors.
12. The VSS requires that economic operators successfully pass an initial audit before allowing them to participate in the scheme. The initial audit of a new scheme participant or a re-certification of existing scheme participant under a revised regulatory framework shall always be on-site and shall as a minimum provide reasonable assurance on the effectiveness of its internal processes.
13. VSS that allow a certificate duration longer than one year shall ensure performance of an annual surveillance audit of all economic operators participating in the scheme.
 - Additional requirement: Detailed provision on unannounced audit visit.
14. The VSS has detailed procedures in place setting out how audits are to be planned and conducted and how audit reports are drawn up.
15. Certification bodies are required to proactively consult with affected stakeholders during both certification and surveillance audits.
16. Does the scheme owner have documented requirements for the use of its symbols, logos and/or claims related to its scheme and make them publicly available?

1.3 Research process

The 21 VSS were asked to self-assess with a yes/no response against the criteria that were provided in an Excel-questionnaire with guidance. To justify the answers, they were asked to quote the relevant information from the standard documents and to provide a clear reference to the relevant passage in their standard's requirements. The answers were then checked by Profundo against standard documents and either confirmed or corrected if the proof was considered insufficient. Each self-assessment was critically reviewed for completeness and objectivity. In case of doubt, additional clarification or evidence was asked from the VSS to ensure correctness. In addition, two external experts, Jinke van Dam and Christof Walther, were consulted to review key parts of the final assessment results for consistency. Based on the resulting complete evaluations, conclusions were drawn on the performance of the VSS against the selected criteria.

When VSS did not respond, did not provide information, or could not be reached, Profundo used publicly available standard documents to fill any gaps. In such cases, the latest published version of a standard was used. Recognizing that some of the standards are going through revision processes or may consider doing so in the near future in light of the changing regulatory environment in the EU, the VSS were asked to submit a summary of expected updates. This information was not used in the present benchmarking; however, it may be included in a partially updated benchmark in 2024 concerning the EUDR criteria.

1.4 Scoring methodology

The VSS could score a maximum of one point for each criterion that it met. If a criterion was deemed partially met, a 0,5 score was awarded. This was particularly relevant for some of the more complex criteria,^a which cover two or more aspects (each could be answered with a yes or a no). Zero points were given whenever a particular criterion was not met.

The 49 assessment criteria are unevenly divided across the five themes. To emphasize that each theme is equally important in the view of WWF and IUCN NL, each theme contributes a 20 per cent share to the total score. This weighting reflects the viewpoint that a robust VSS should cover all of the key areas, and not only score very high on one or two categories.

^a Criteria 3.3, 4.2, 4.5, 4.7, 4.8, 4.9, 4.10, 4.11, and 4.14.

2

VSS Performance

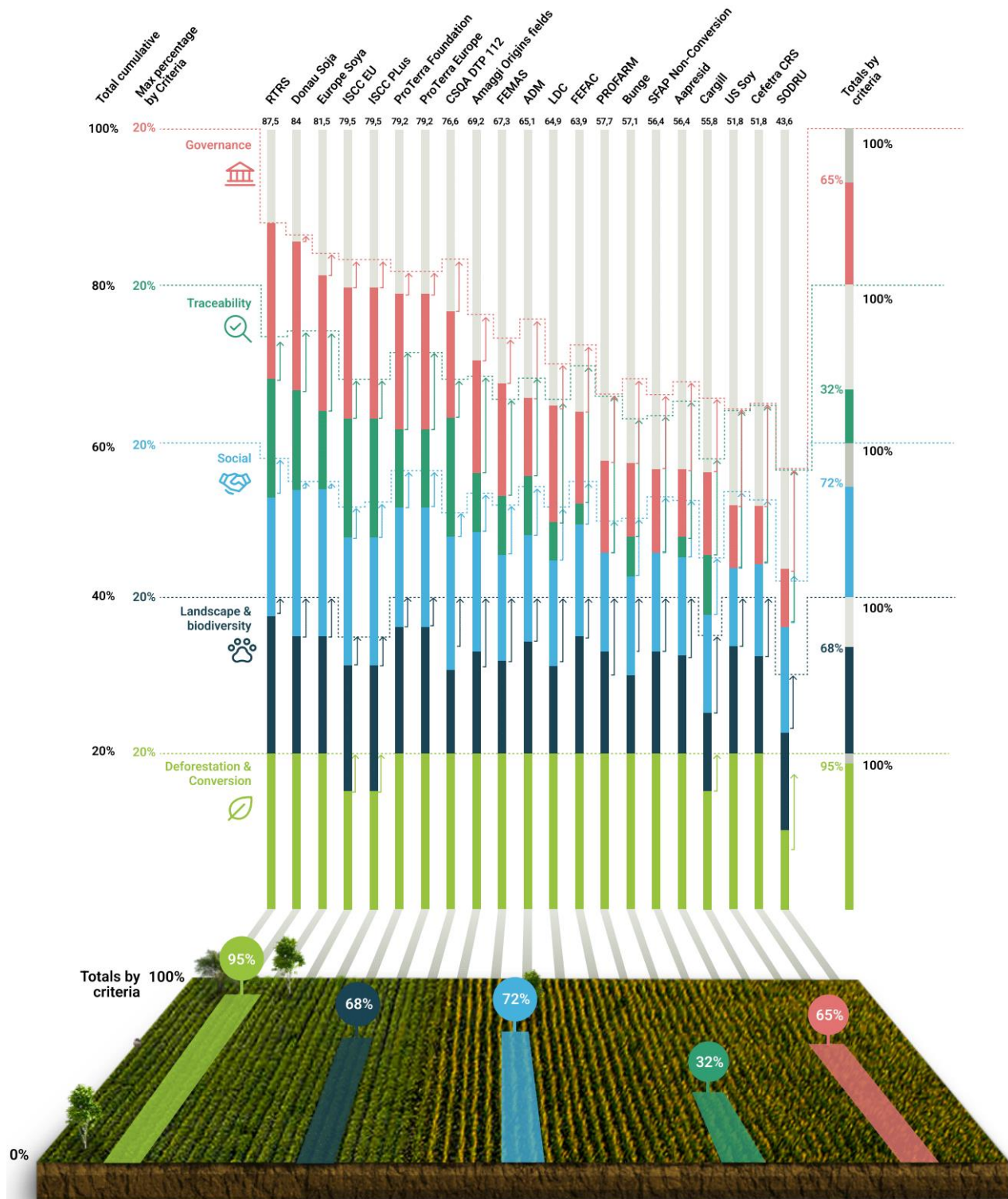
This chapter provides an overview of how the 20 assessed voluntary standard systems and FEFAC SSG performed against the 49 benchmarking criteria and 11 extra requirements. It presents findings on the overall performance, identifies general regularities and trends, and provides more detailed insights into the different assessment categories: no deforestation and no conversion, landscapes and biodiversity, social issues, traceability, and governance and level of assurance.

2.1 Overall results

The VSS considered in this benchmark can be divided into independent standards and corporate standards. The independent standards, particularly those that are more inclusive and involve a broad range of stakeholders, generally perform better than corporate standards in all categories. Figure 1 below outlines the overall benchmarking results. Of the 21 assessed VSS, RTRS emerged as a leader, scoring high in almost all categories. However, it still has some areas for improvement, for example, in terms of how its provisions cover UNESCO World Heritage Sites and areas where landscape restoration and reintroduction of wild species is conducted. It could also improve its performance by adding criteria on paying a living and a decent wage, as currently only a legal wage is required. It is also important that RTRS improve their traceability provisions and pay more attention to the CoC models. Book and Claim and Mass Balance models have been playing an important role in enhancing sustainable supply chains and still can do so while the EUDR's basic requirements are implemented, but in the long run economic actors should aim for fully DCF sustainable physical streams.

Figure 1 VSS benchmarking, scoring results for all categories

Overall benchmarking result



How to read the graph

- This line represents where the 20% of the Criteria is in that particular Standard
- The arrow signals the difference between what is achieved by the Standard and what could be achieved
- This shows the benchmark achieved by the Standard in that particular Criteria

RTRS is followed closely by Donau Soja and Europe Soya, ISCC EU and ISCC Plus, ProTerra and ProTerra Europe. Overall, these schemes also have robust no-deforestation and no-conversion commitments but demonstrate some gaps in how they deal with a wider range of criteria on landscape preservation and biodiversity conservation. These deficits could be remedied by making direct references to international agreements and conventions, including the World Heritage Convention, Ramsar Convention, and Convention on Biological Diversity. They would also benefit by better addressing the social agenda, including requirements for producers to pay decent wages. ISCC Plus and ISCC EU received somewhat lower scores on the no-deforestation and no-conversion requirements. The reason is that ISCC requires no-conversion only for "highly biodiverse" grasslands and areas designated by law or by the relevant competent authority for nature protection purposes and areas for the protection of rare, threatened or endangered ecosystems or species, but does not explicitly prohibit conversion of all ecosystems.

Apart from Amaggi, other corporate-owned schemes, including those operated by Cargill, Bunge, Louis Dreyfus, Cefetra CRS and Sodrugestvo Group, demonstrated the lowest scores. These VSS tend to lack robust governance systems, as they are managed by the companies that have created them. None of them have provisions to include stakeholders in the standard development and overall decision-making processes. Moreover, all of the corporate standards lack transparency in comparison to VSS that operate as independent legal entities. The majority provide very little disclosure on their funding, governing bodies, and amounts of certified soy. Thus, it is only Cefetra CRS that discloses the certified amounts. These schemes also have little, if any, requirements for regulating sustainability claims or the use of logos and symbols.

For the corporate standards it is particularly important to look at their assurance requirements. In terms of audits, LDC requires that a third-party assessment is carried out by an accredited certification body that is independent from the assessed entities and LDC. Cefetra CRS demands that all farms are assessed on-site by Control Union Certifications, an independent certification body. Cargill selects a certification body which may not have any connection or vested interest in the day-to-day operation of Cargill businesses participating in its Triple S program. The verification system for Bunge's PRO-S Certification program is based on third-party verification, which is an independent party that conducts the audits and issues certificates stating that the product complies with the given specific set of criteria in accordance with FEFAC's guidelines. The SODRU programme is based on third party assessments of farmers that directly commercialize soy with Sodrugestvo. Third-party assessments are verifications of compliance against specific requirements carried out by an independent entity (assessment body).

Some areas for improvement seem to be relevant for all or most of the assessed schemes:

- Though most of the VSS require that soy producers must not use agrochemicals prohibited by the Stockholm and Rotterdam conventions, almost all still tolerate chemicals defined by WHO under Class Ia, Ib, and II, the use of which is restricted but not completely banned by the VSS. This probably has to do with high weed resistance to herbicides among others, for which the standards and producers are currently not prepared to implement sustainable alternatives.
- Most VSS have provisions prohibiting the introduction of invasive species, but almost none of them require that the damage already done by such species should be minimized and mitigated.
- None of the assessed VSS requires full transparency on biodiversity and HCV areas on their land.^b Thus, the VSS do not have requirements for producers to disclose HCV data to stakeholders upon request. However, it should be taken into account that sharing such data may be legally restricted in certain jurisdictions.

^b The FEFAC SSG provides three options to ensure adequate natural eco-system protection, one of them being "Referring to protecting specific areas of 'High Conservation Value' after a certain cut-off date. Here FEFAC requires that an official HCV assessment needs to be carried out and made available upon request."

- None of the assessed VSS ask producers to protect rare, threatened, and endangered species and their habitats within as well as outside the management unit. The schemes focus on the on-farm biodiversity and do not usually cover the surrounding areas in this requirement.
- Governance, transparency, and assurance can also be improved across almost all standards. Currently, few standards have requirements for producers and supply chain actors to engage with stakeholders sufficiently, and most lack adequate internal control systems.

2.2 Avoiding deforestation and conversion

Agricultural expansion for pasture and cropland to produce soy remains among the key drivers of deforestation and land conversion in South America. The Amazon Soy Moratorium, which was first agreed in 2006, enabled a significant reduction of soy-driven deforestation in Brazil.² However, with global demand continuously increasing, the soy frontier shifted to other biomes, driving land conversion in the Cerrado savannah, Chaco forests, Atlantic Forests, and increasingly Pantanal wetlands, posing new threats to biodiversity, the global climate, and local communities. According to WWF, over half of the Cerrado's 100 million hectares of native landscape has been lost already, largely caused by livestock and soybean farming.³

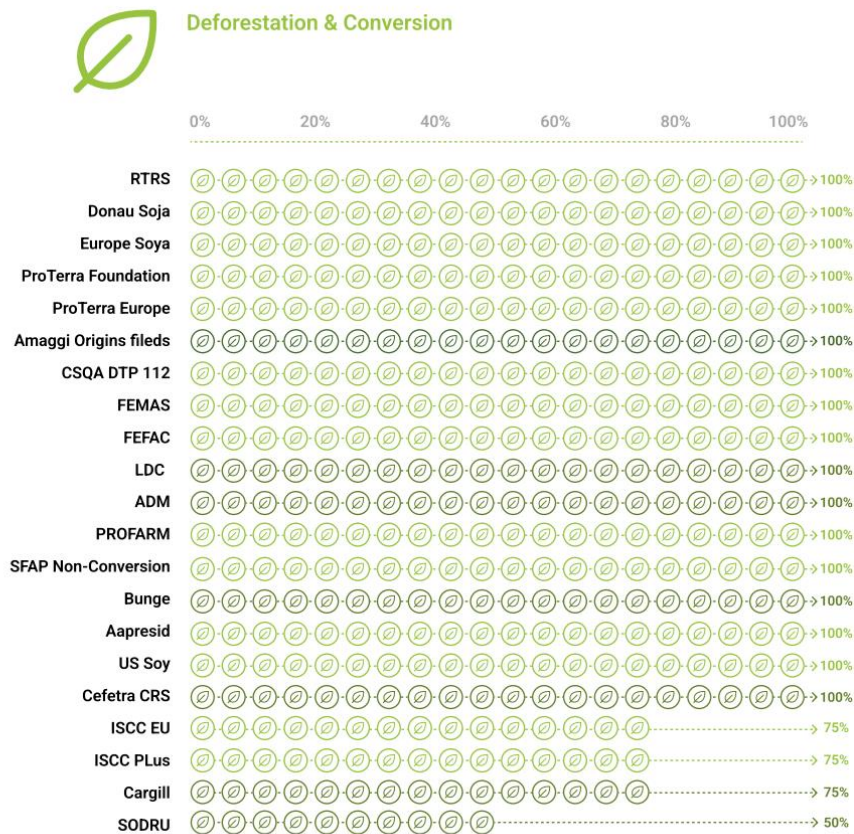
The EU plus the United Kingdom forms the second-largest importer of soy globally after China, with 14.6% and 40.1% in 2020, respectively. At the same time, while China is a larger importer than the EU, Trase data show that the EU's relative deforestation impact linked to soy from Brazil was greater than China's. Over the period 2009 to 2018, EU imports of Brazilian soy on average led to 1.5 hectares of deforestation and conversion per 1,000 tonnes, compared to 0.75 hectares linked to Chinese imports from the country. This is due to the fact that EU imports more often are sourced from frontiers of deforestation, for instance the Cerrado. A similar pattern has been observed for imports of Argentinian soy.⁴

Thus, it is important that the EU market eliminates soy-related deforestation and conversion from its imports and consumption. Increasingly more companies are making zero-deforestation and zero-conversion commitments and claims, but often the credibility of such claims remains uncertain. According to zu Ermgassen et al (2020), "[z]ero deforestation commitments are voluntary initiatives where companies or countries pledge to eliminate deforestation from their supply chains. These commitments offer much promise for sustainable commodity production, but are undermined by a lack of transparency about their coverage and impacts".⁵

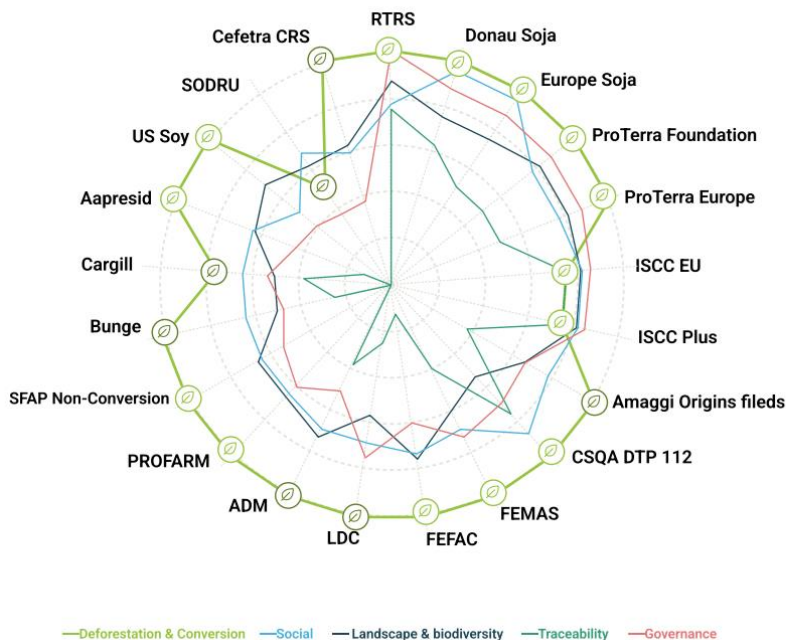
To support their sustainability claims, companies often resort to sourcing soy that is certified under a VSS. Figure 2 shows how the 21 VSS covered by the FEFAC SSG perform in terms of no-deforestation and no-conversion criteria.

² Donau Soja and Europe Soya, FEFAC, RTRS, Proterra and Proterra Europe, and Aapresid, and to a lesser extent ISCC Plus, ISCC EU, SCQA DTP 112, and U.S. Soy.

Figure 2 VSS assessed against no-deforestation and no-conversion criteria



Most of the standards already have robust provisions to ensure there is no deforestation and conversion related to soy production. ISCC Plus and ISCC EU were scored lower because they refer to highly-biodiverse ecosystems rather than all landscapes in the no-conversion provision. Cargill Triple S provisions also do not cover all landscapes, for example, wetlands and steep slopes. SODRU scored the least points because it prohibits only illegal deforestation and conversion and does not have a cut-off date.



All standards under assessment have established zero-deforestation and zero-conversion criteria. Compared to the 2019 benchmark, more of the VSS go beyond legal deforestation and conversion, and require that no forests and other natural ecosystems (such as savannahs, grasslands, wetlands, and peatlands, as well as vulnerable areas such as steep slopes and riparian areas) are converted at all, legally or illegally.

As could be observed in the graph, four standards score lower than the rest. This mainly results from weaker provisions on conversion. Thus, ISCC Plus and ISCC EU require no-conversion only for "highly biodiverse" grasslands and areas designated by law or by the relevant competent authority for nature protection purposes and areas for the protection of rare, threatened or endangered ecosystems or species, but do not explicitly prohibit conversion of all ecosystems. Cargill does not explicitly prohibit wetland conversion, while SODRU only requires that soy is not produced on land that has been illegally converted after a certain cut-off date as per the applicable legal requirements. And yet, to ensure that ecosystems in the soy-producing countries and beyond are protected, it is important to avoid all forms of deforestation and conversion, even if current national legislation allows it.

Until mid-2023, the FEFAC Guidelines only required forest protection in line with legal requirements in the production country. FEFAC has been claiming that it "[...] fully recognises that current societal expectations in Europe are setting 'conversion-free soy', going beyond the legality principle, as the future political and market norm [and that the] Soy Sourcing Guidelines 2021 include a desired criterion on protecting forests and natural ecosystems beyond legal compliance".⁶ In line with this ambition, in July 2023, FEFAC released an updated version of its SSG, which made the criterion on the protection of natural ecosystems an essential requirement. According to FEFAC, '[t]his means that certification & verification schemes and programmes must ensure that the certified soy has not been cultivated in converted natural ecosystems (natural forest, native grasslands, wetlands, swamps, peatlands, savannas, steep slopes and riparian areas) in line with the definition of the Accountability Framework Initiative'⁷. This is a very welcome development, which contributes to raising the bar for the VSS - and ultimately - for the economic actors across the soy supply chains in the EU and in the production countries.

Cut-off dates continue to be an important indicator of robustness of the no-deforestation and no-conversion requirements and claims. Of the 21 standards, only SODRU (operated by the Russian Sodrugestvo Group) does not have a specific cut-off date and only refers to a "certain cut-off date as per the applicable legal requirements". For all other standards, the cut-off dates range between 2008 (Cargill, CSQA, Donau Soja, Europe Soja, ISCC Plus, ISCC EU, ProTerra, ProTerra Europe, US Soy), 2009 (Cefetra, RTRS (for native forests, riparian vegetation, natural wetlands, steep slopes, areas designated by law for native conservation.)), 2015 (ADM), 2016 (Bunge, LDC, PROFARM, RTRS (for any natural land, steep slopes and areas designated by law for native conservation)), and SFAP), up to 2020 (Amaggi, Aapresid, FEFAC, and FEMAS).

Table 2 Cut-off dates for zero deforestation and conversion

VSS	No Deforestation cut-off date	No conversion cut-off date
ADM	2015	2015
Amaggi	2020	2020
ASC	2020	2020
Bunge	2016	2016
Cargill	2008	2008
Cefetra	2009	2009
CSQA	2008	2008

VSS	No Deforestation cut-off date	No conversion cut-off date
Donau Soja	2008	2008
Europe Soya	2008	2008
FEFAC	2020	2020
FEMAS	2020	2020
ISCC EU	2008	2008
ISCC Plus	2008	2008
LDC	2016	2016
PROFARM	2016	2016
ProTerra	2008	2008
ProTerra Europe	2008	2008
RTRS	2009	2016
SFAP	2016	2016
SODRU	-	-
US Soy	2008	2008

Source: Profundo, based on VSS responses and open sources

Most schemes have set the same cut-off date for deforestation and conversion. RTRS initially set 2009 as a cut-off date for forests and High Conservation Value areas 'where RTRS maps are available' (referring to its broad conservation maps made for the main producing countries), which was turned into a no conversion criterion for all natural land in 2016. LDC and ISCC only require zero conversion of native vegetation of High Conservation Value and land with High Carbon Stock or high biodiversity, respectively, but not zero conversion of any natural vegetation.

Cefetra and Amaggi have reserved earlier dates for zero deforestation and conversion in the Amazon than those that apply to other ecosystems. Cefetra set 2006 as a cut-off date for farms in the Amazon Biome, while Amaggi has an additional requirement to ensure compliance with the Soy Moratorium for the Amazon Biome (July 2008).

As all schemes except for SODRU have already set cut-off dates for at least 2020, and many as early as 2008, all of them should be at least partially compliant with regard to this aspect with the EUDR. The EUDR has a cut-off date for deforestation of 31 December 2020, which was put in place based on the assumption that most products currently in trade would be sourced from land put into production prior to that year.⁸

2.3 Avoiding degradation of natural ecosystems and biodiversity loss

Agriculture, including soy cultivation, is impacting wild species and entire ecosystems far beyond physical destruction of the natural areas replaced by arable land. Habitat fragmentation, erosion, runoff of agricultural wastewater, irregular, unrecorded, and illegal use of agrochemicals, introduction of invasive species, diversion of natural bodies of water, depletion of groundwater sources, are just some of the issues that have profound negative impacts on the flora and fauna in the production countries.

In Brazil, which accounts for almost half of the global soy exports,⁹ agricultural expansion driven by the global supply chains causes considerable on-the-ground impacts on biodiversity and has been affecting both iconic species like the maned wolf and giant anteater, as well as less well-known endemic species, particularly plants, threatening them via habitat destruction.¹⁰

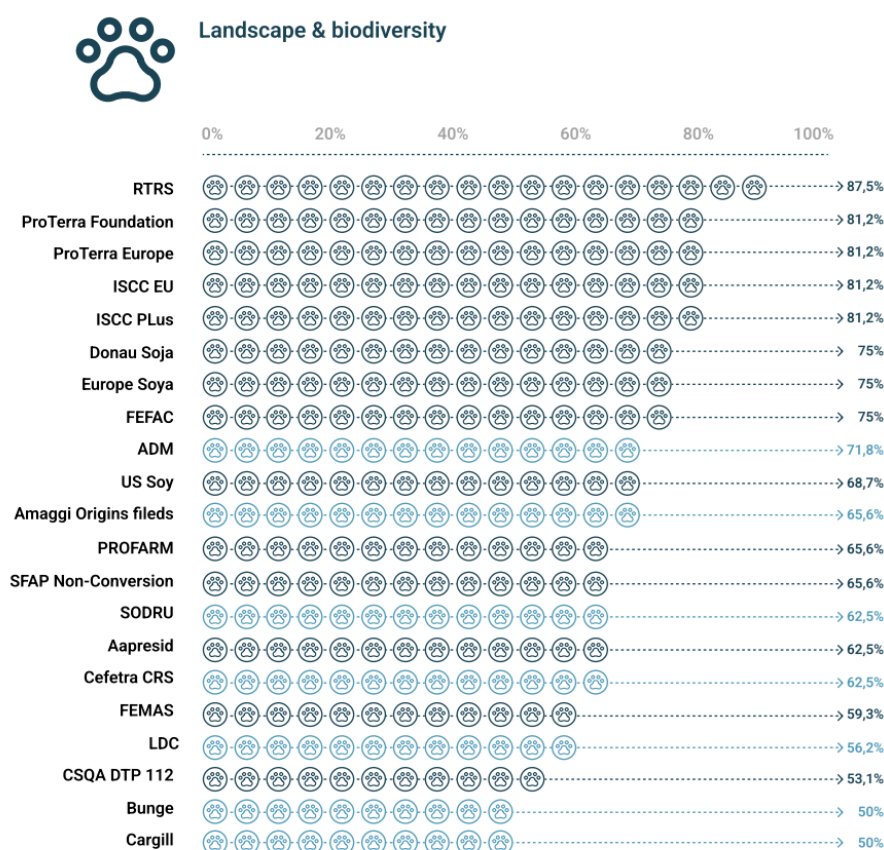
Despite their status, protected areas, including Ramsar wetlands, are also affected by soy expansion. A 2020 research demonstrated the presence of pesticides in soils, fishes, and beehives, both within and around Ramsar wetlands in Uruguay. These included pesticides which are now banned in the country, but have been accumulating in the soil and living organisms.¹¹ In the unique Pantanal wetland in Brazil, only 0.01% has been converted for soy farming; nonetheless, agrochemical residue from the largescale soy production in the Northern headwater region have contaminated all estuaries in the UNESCO World Heritage Site, including pesticides that have been prohibited in the EU for almost 20 years.¹²

To ensure that soy certified as sustainable is produced in a way that avoids, limits, offsets and compensates for the negative impacts on ecosystems and biodiversity, VSS are imbedding differing levels of criteria in their standards. Figure 3 presents the results on how the 21 selected VSS perform in terms of 16 relevant criteria, covering a wide range of issues from protected areas and reintroduction of species to integrated pest management, application of agrochemicals, promotion of native predators, and limitation of invasive species.

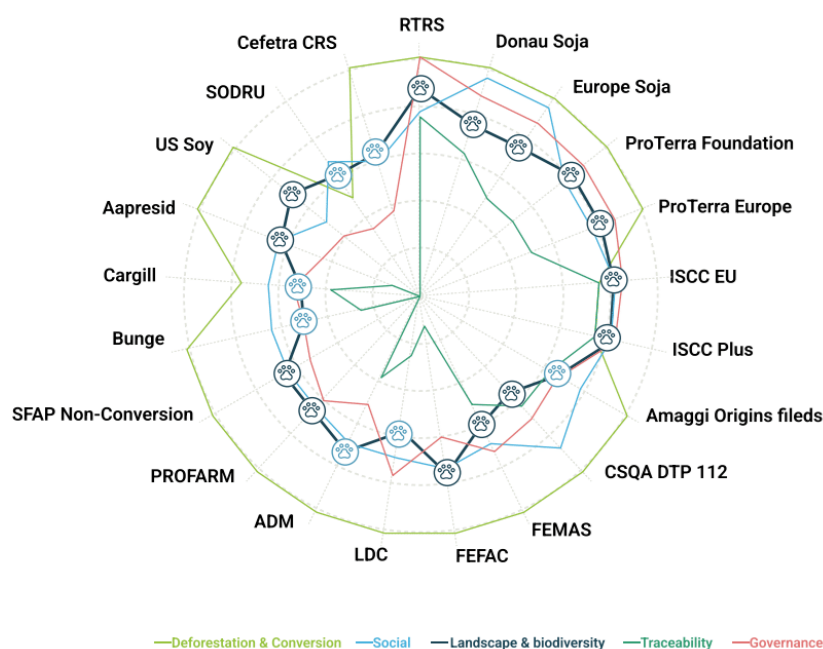
Despite the importance of other negative impacts of soy production beyond deforestation and conversion, there is currently little public discussion on the measures that can be taken to tackle them. For more information on this topic, please refer to the IUCN publication on the relevant agroecological practices.^d

^d IUCN NL & Universidad de Buenos Aires (2021) Soy and agroecology: building a bridge. Authors J. van Dam, H. van den Hombergh and U. Martinez Ortiz. Amsterdam: IUCN National Committee of the Netherlands

Figure 3 VSS assessed against landscapes and biodiversity criteria



In terms of ecosystems and biodiversity, the standards vary considerably in their performance from 87,5% for RTRS to 50% for Cargill and Bunge. The most common weaknesses include relying on country legislation instead of international conventions and protocols, not addressing conversion issues outside of the farm, allowing the use of certain harmful agrochemicals, and not addressing invasive species adequately.



All 21 schemes have provisions in place that soy production must not occur in protected areas. However, very few specifically refer to IUCN categories I–VI,^e as they mostly rely on local legislation. Moreover, only Proterra and Proterra Europe also directly refer to UNESCO World Heritage Sites, both natural and cultural, again mostly relying on legal protection provided by the legislation in the production countries.

Legislation does not necessarily provide the same safeguards everywhere. For example, UNESCO sites may or may not enjoy adequate protection in their respective countries. The sites may be threatened by *'industrial and agricultural development including use of pesticides and fertilizers, major public works, mining, pollution, logging, firewood collection, as well as potential modification of the legal protective status of the area, or a management system which is inadequate or not fully implemented'*.¹³ Currently, there are 55 sites which the World Heritage Committee has included on the List of World Heritage in Danger.¹⁴ Though we are not aware of any cases where UNESCO sites have been disturbed or degraded by soy farms, it is still important that relevant provisions are required by the VSS.

The Ramsar Convention is also referred to by VSS on a relatively rare basis. Exceptions include RTRS, Proterra and Proterra EU, Donau Soja and Europe Soya, ISCC Plus and ISCC EU, ADM, and FEFAC. Even though most of them already have provisions in place that require zero conversion of all wetlands (which presumably includes Ramsar sites), these provisions do not always cover operations impacting Ramsar sites beyond physical conversion; for example, agricultural runoff and impacts related to irrigation.

Almost all the assessed VSS have a provision that if any alteration of a protected area has taken place, producers must restore such an area to its former state or take legally approved compensating actions. However, almost none of them provide details on the quantity, quality, and permanence of the compensation. In this respect, only RTRS has appropriate provisions, while ADM and Amaggi only partially cover them.

All 21 VSS have provisions requiring producers to identify natural vegetation and biodiversity values on their land, including around bodies of water (riparian vegetation and flood plains) and on areas sensitive to erosion (steep slopes and hills). However, very few entail that such requirements should apply to the surrounding areas, potentially affected by their operations. ISCC Plus and ISCC EU provide an example of a comprehensive provision, which covers not only on-site impacts, but also potential off-site contaminants and impacts on neighbouring human settlements. All VSS require producers to take measures to minimise and mitigate negative impacts from operations on on-farm biodiversity values, such as wildlife or native vegetation. However, most of them lack specific requirements to minimise and mitigate negative impacts from operations outside of the management area, nor do many of them request a timebound plan for biodiversity management. At the same time, almost none of the VSS require that producers should be transparent about the identified natural vegetation and biodiversity and disclose this information to relevant stakeholders. The only exception is RTRS. The FEFAC SSG mention it as one of three options for VSS to ensure adequate natural ecosystem protection.

^e Category Ia – strict nature reserve; Category Ib – wilderness area; Category II – national park; Category III – natural monument or feature; Category IV – habitat or species management area; Category V – protected landscape or seascape; Category VI – protected area with sustainable use of natural resources.

The VSS seem to be gradually improving in terms of the level of granularity and scrutiny with which they treat the criteria related to good agricultural practices. Thus, almost all the assessed standards have provisions regulating the use of hazardous chemicals, as defined by WHO Class Ia, Ib, and II, and the Stockholm and Rotterdam conventions. In most cases the substances defined by the Stockholm and Rotterdam conventions are completely banned, while the application of WHO Class Ia, Ib, and II chemicals is restricted (for example, spraying is only allowed at a certain distance from protected areas, bodies of water, and human settlements), but not completely banned. The decision to ban individual pesticides is often a long and consultation-intensive process, e.g., the ban on paraquat at the RTRS (2017, phase out until 2020).

Most of the VSS are still relying on national legislation on agrochemicals in the production countries, and do not outwardly require that producers must ensure that any use of biological control agents complies with internationally recognised standards and/or protocols. All VSS also require producers to implement integrated crop and pest management practices that minimise or avoid the use of agrochemicals. However, almost none of the VSS require producers to promote native predators. The only standard to fully meet this assessment criterion was Cargill Triple S, which has a provision on the promotion of native predators and parasites that will control pest species. All standards demand producers to minimise impact on wetlands and groundwater quality from chemical residues, fertilisers, erosion, or other sources, and require evidence of proper management or handling of agrochemical waste.

At the same time, almost none of the VSS require that producers' activities do not degrade areas where forest restoration or threatened wildlife re-introduction is taking place. Exceptions include ISCC EU and ISCC Plus, which require producers to establish and protect wildlife corridors; and Amaggi Origins Field standard, which clearly states that areas that are in the restoration stage should not be degraded, respecting the re-introduction of wildlife. The FEFAC SSG, referring to the AFi definition of a natural ecosystem, recommend that soy must not be produced on land where ecosystems are expected to regenerate naturally or by management for ecological restoration.

Most of the VSS require producers to not introduce or use invasive alien species in the management unit. Exceptions include some corporate standards – Cargill and Bunge, which lack such requirements, and SODRU, which only requires that new pests, when detected, are immediately communicated to authorities.

Good agricultural practices aimed at maintaining and improving soil quality and preventing erosion, as well as measures to ensure sustainable irrigation and minimizing negative impacts on water bodies are well-covered by all 21 VSS.

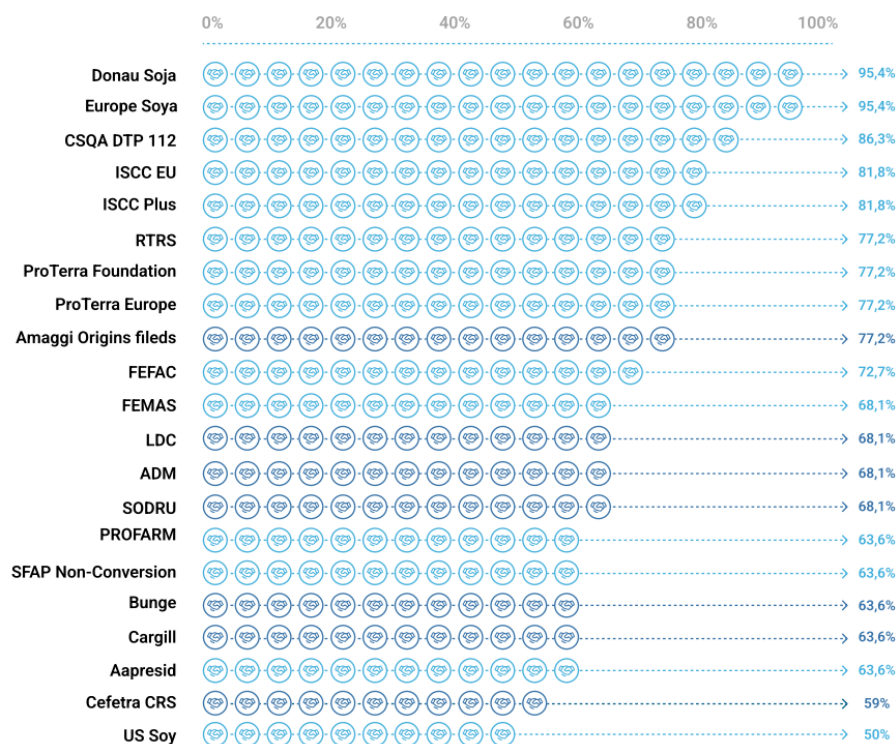
2.4 Social issues and human rights

Though the share of agriculture in the global GDP has been declining for most of the 20th and 21st centuries, first replaced by industrial production, and then increasingly by services, it continues to employ a disproportionately large number of people. Agriculture currently accounts for 6.4% of global GDP,¹⁵ while employing 27% of the global workforce.¹⁶ This makes workers' rights and protection in agricultural sectors, including soy production, an important topic. It should also be noted that indigenous peoples, traditional and other local communities are still affected by the expansion of soy cultivation, as land rights controversies can threaten their livelihoods.¹⁷ Thus, the way social issues are treated within the sector affects workers but also populations beyond the farm. The strong supply chain links with the EU market highlight the need for companies as well as policymakers to engage on the topic. The benchmark assessed how the 21 VSS incorporate social issues, including wages, no discrimination, freedom of association, indigenous and community rights, and gender equality. The set of social criteria is based on the FEFAC guidelines and the upcoming requirements of the EU Corporate Sustainability Due Diligence Directive.

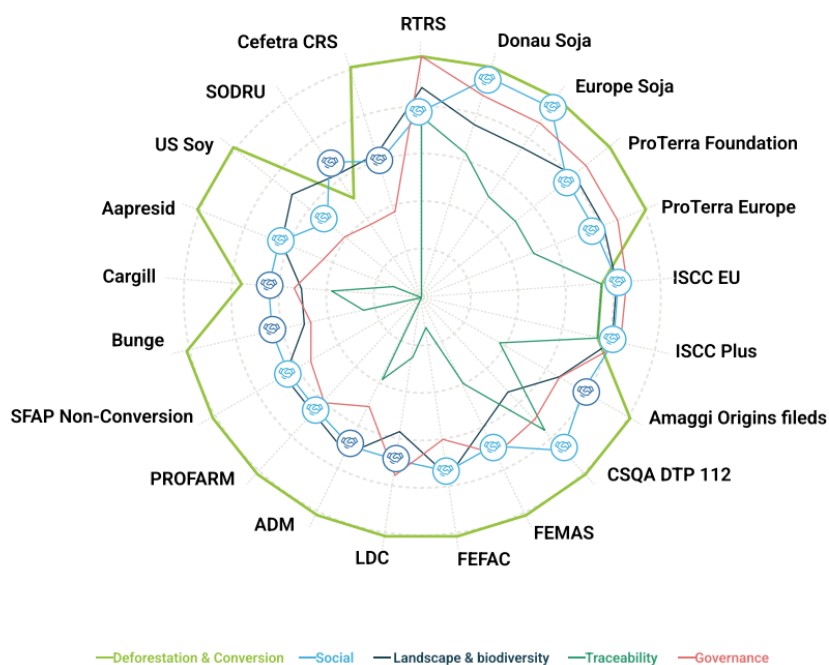
Figure 4 VSS benchmarking, scoring results for the social criteria



Social



As in all other themes, social issues are better addressed by independent multi-stakeholder standards than by corporate schemes. Points of growth for all of the standards include requirements concerning land rights, decent wages and provisions to make their policies more gender-sensitive.



Some of the key assessment criteria in the social category cover wages, working conditions, and wellbeing. Most of the VSS require that legal wages are paid to workers in the soy industry. Though some of the schemes (ISCC Plus, ISCC EU, Donau Soja, Europe Soya, CSQA DTP 112) aim to ensure that living wages are paid, none mention decent remuneration, defined as a sufficient income to afford a decent standard of living for the worker and her or his family. In some countries and jurisdictions, legal wages may be below the threshold that provides decent living conditions. Recognizing that in the highly mechanized soy production wages may be less of an issue than in other sectors of tropical agriculture, we still deem it important that the VSS clearly require producers to pay decent wages.

At the same time, all 21 assessed standards demonstrate consistency and adequate criteria on preventing child and forced labour, and in requiring freedom of association for workers. All VSS require that economic actors (that is, not only producers, but also other actors along the soy supply chain) must uphold the rights to freedom of association and collective bargaining, and must make sure that no forced labour and any form of slavery, practices akin to slavery, serfdom or other forms of domination or oppression in the workplace, are present throughout the entire supply chain. All 21 schemes also have adequate provisions to ensure that economic actors must not employ children under the age at which compulsory schooling is completed and, in any case, not younger than 15 years.

Gender issues, on the other hand, do not seem to be adequately addressed by the VSS. All of the 21 schemes have at least some provisions that outwardly prohibit all forms of discrimination and violence. Gender is often listed among other potential grounds for discrimination, including race, age, political views, etc., but none of the provisions could be classified as gender-sensitive. Specific issues like gender-responsive grievance mechanisms and, where grievances are reported, the offer of gender-responsive remedies, are lacking. Addressing these issues in a comprehensive and systemic way may be one of the desirable trends in improving and updating the VSS social criteria.

The assessed schemes also demonstrate various levels of robustness when dealing with local communities, including Indigenous peoples. All of the VSS recognize the necessity to protect the needs of communities and Indigenous peoples (including livelihoods, health, nutrition, water, etc.), and that such needs shall be identified in cooperation with these people and recognized and protected by farm operators. At the same time, only twelve of the schemes have provisions in place that specifically ask companies and their suppliers to respect the right of Indigenous peoples, as well as all communities with customary land rights, to give or withhold Free, Prior and Informed Consent (FPIC) if they could be affected by planned operations. It must be noted, however, that some schemes only apply to producers located in Europe (Donau Soja and Europe Soja, Proterra Europe, and CSQA (which is only applied in Italy)), where provisions related to Indigenous people do not seem relevant. Therefore, if relevant wording was missing in these standards, this was not taken into account in calculating their overall score.

All VSS have provisions to bar producers from unlawfully evicting or taking land, forests and waters when acquiring, developing or otherwise use land, forests, and waters. At the same time, one of the most serious social issues related to soy production in Brazil remain those connected to the land grabbing and displacement of indigenous people. This may mean that producers should focus on the implementation of the relevant provisions, and the VSS – on tracking and assuring their implementation.

Adequate compensation for negative impacts of operations on local communities and individuals is another issue that seems to require more attention by the VSS, as at least eight of the 21 schemes do not have such provisions, and two more have provisions that are not strong or explicit enough. This may, for example, entail provisions for compensation for land, but not for other impacts on livelihoods such as by agrochemicals.

2.5 Traceability

Only four of the assessed VSS (ISCC Plus, ISCC EU, RTRS, and Cargill Triple S) fully comply to date with the provision that economic actors should be required to collect the polygons/geographic coordinates (or geolocation via latitude and longitude) of all the plots of land where soy was produced and keep this information for five years. The other standards either partially fulfil it (for example, do not specifically require that geo-references must be kept for five years), or do not require at all that geographic coordinates are collected. This makes such standards in their current versions non-compliant with the EUDR, which explicitly requires that economic operators shall keep a record of the due diligence statements for five years from the date the statement is submitted through the information system. Such due diligence statements, according to EUDR, must contain information about the sources and suppliers of the commodities and products being placed on the market, including information demonstrating that the absence of deforestation as well as legality requirements are fulfilled, inter alia, by identifying the country of production or parts thereof and including the geolocation coordinates of relevant plots of land.¹⁸

Supply chain models: Pathways of certified soy from plantation to product.

Supply chain models:

- Identity Preserved (IP): Strict physical separation of certified soy from different farms. The goods are not mixed in further processing.
- Segregated (SG): Separation of certified and non-certified materials. The certified goods are mixed with each other in further processing.
- Mass Balance (MB): controlled mixing of certified and non-certified raw materials.
- Book & Claim (B&C): online trade in certificates; one certificate is purchased virtually for one tonne of certified raw material.

In the first three models, the certified raw material is also physically contained in the final product. Only in the case of SG and IP is there a strict separation of the certified soy and, according to AFi, it is "deforestation/conversion-free". With B&C certificate trading, no physical traceability is possible, leaving this path valid only as a transitional solution or for the targeted support of smallholders. Furthermore, the different supply chain models each also have their restrictions when it comes to sustainability claims: Identity Preserved is strongest here and Book & Claim the weakest.

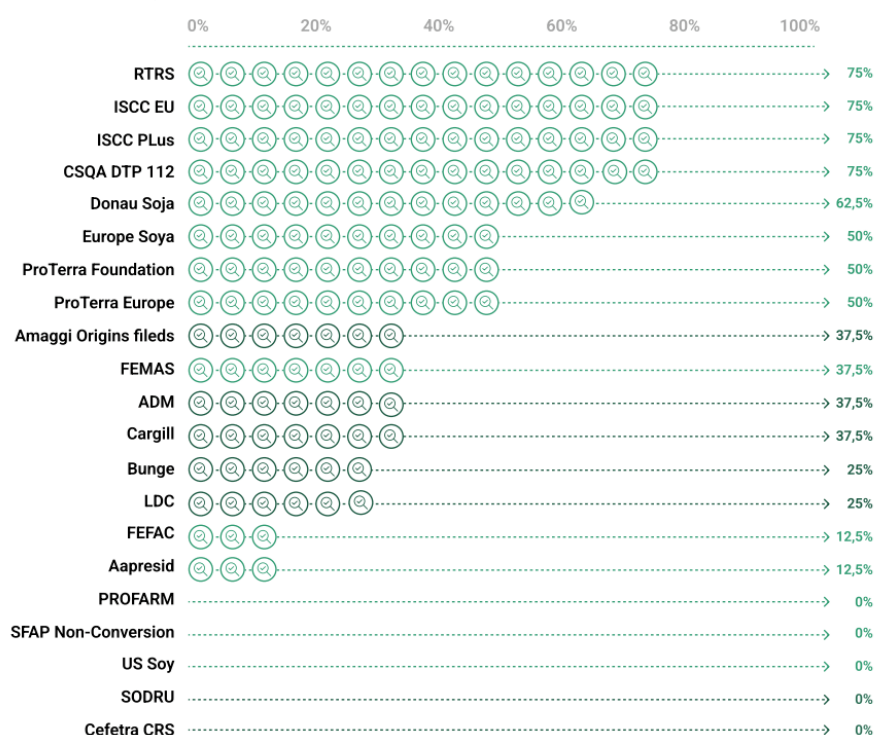
Chain of Custody (CoC) models greatly vary in their ability to provide environmental and social guarantees on the physical volumes of soy produced, traded or purchased. When assessing the stringency and impact of certification, it is also of the utmost importance to note that within the same certification scheme there can be very different CoC models, which will provide varying levels of guarantees on the environmental and social impacts of production within the physical supply chain.

Much of the certified soy represents "book-and-claim" credits and not CoC models – which may support responsible production but allows companies to mix certified and non-certified material and provides no guarantee that the physical volumes of soy purchased by companies is free of environmental and social risks. Segregated, physical sourcing of certified material can be a way to improve corporate supply chains but is still restricted to niche markets because of the high logistical costs of segregation. And until now, it has only been economically possible when associated with additional product differentiation, such as non-genetically modified soy.

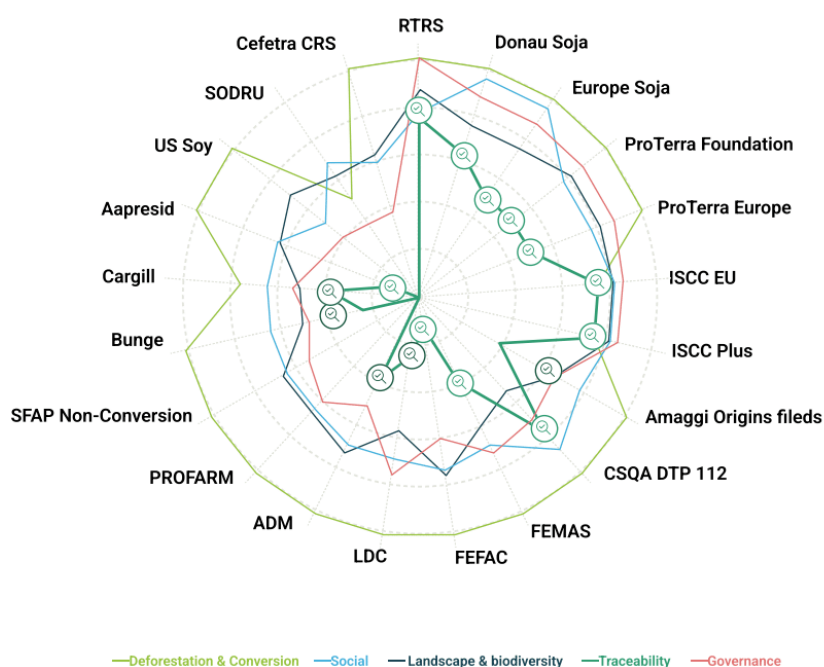
Figure 5 VSS benchmarking, scoring results for traceability



Traceability



Traceability is the area requiring the most attention across all the VSS. Five of the standards failed to meet any of the traceability criteria, and none reached more than 75%. As traceability is crucial to ensure that the no deforestation and no conversion requirements are verifiable, more efforts should be made, and better technology should be employed to improve supply chain management and transparency.



Of the 21 VSS, 14 have provisions in place requiring economic actors to trace soy, and the sustainability information assigned to it, through all stages of the supply chain (production, processing, manufacturing, and distribution). However, to date, few define what kind of information could be traced. VSS that have a specific provision in this regard include Donau Soja and Europe Soya, RTRS, FEMAS, CSQA DTP 112, Proterra and Proterra EU.

So far, none of the VSS have a separate or embedded module to verify EU compliance both with the EUDR and the EU Renewable Energy Directive (EU RED). Some of the VSS have specific modules for EU RED compliance, but EUDR is not yet specifically referred to by any of them, though four of them comply with it by virtue of their own provisions. However, this is hardly surprising, as EUDR will only enter into force in 2024, and standards are usually updated every five years. It is expected that later in 2023 and in 2024 standards (at least those that aim to become EUDR-compliant) will be revising their relevant provisions to prepare for EUDR implementation. Even more time may be required for this process, as some aspects are still not fully defined; for example, if physical segregation will be required or supply base compliance will be enough to comply. These and other issues may be clarified in implementation regulation, when and if it follows.

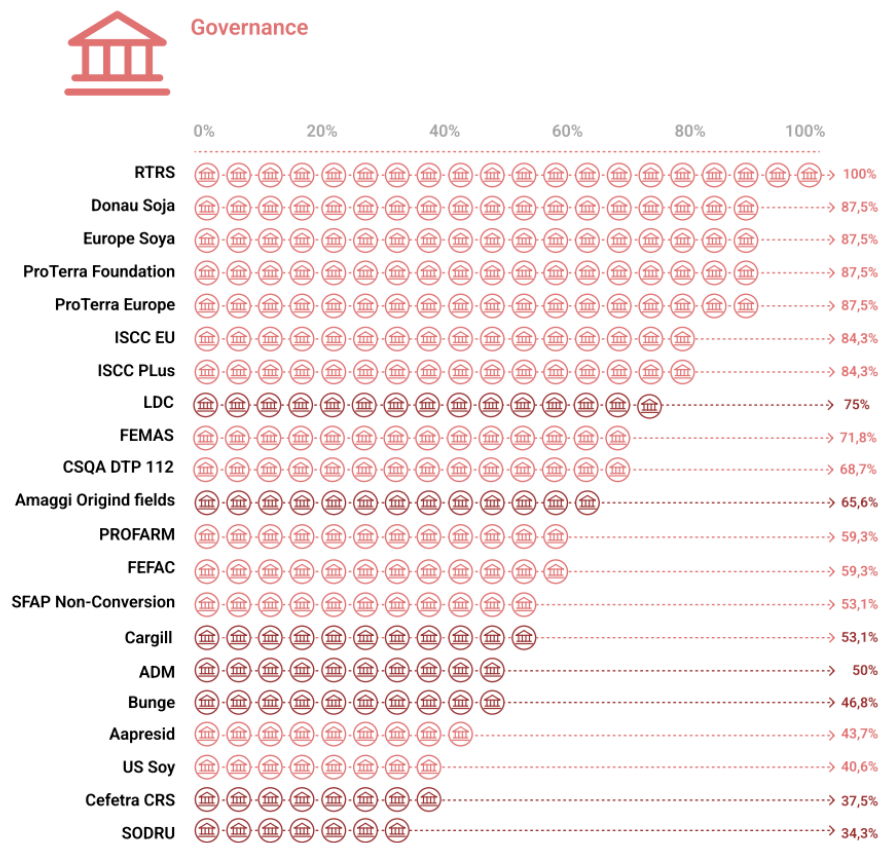
Of the assessed VSS, just two (Donau Soja and CSQA DTP 112) require that economic actors must always keep certified streams segregated from non-certified supplies. In addition, eight standards (ISCC Plus and ISCC EU, Europe Soya, RTRS, FEMAS, ADM, Proterra and Proterra Europe) include modules or options for physical segregation. Thus, producers may – but do not have to – opt for physical segregation to get certified under such standards. Though unsegregated streams may pose reputational and marketing risks for consumer-facing standards (and certified companies), this is not necessarily conflicting with the EUDR. At the same time, none of the VSS have a separate or embedded module specifically designed to verify EU compliance both with the EU DR and the EU Renewable Energy Directive (EU RED). As clarified by Client Earth in their 2022 ‘Getting to deforestation-free’ report, “[t]he EU [DR] does not require EU operators to adopt any particular supply chain model and it does not prohibit supply chains with products of mixed origin – supply chains need only be traceable. The EU [DR] stipulates certain minimum steps which operators must complete as part of their due diligence and the outcome which that due diligence should achieve without dictating how operators must complete that process. Nor does it stipulate how operators should structure their supply chains in order to ensure their Covered Products are legal and deforestation-free.”¹⁹ However, as mentioned in the EUDR, also in cases where operators have ascertained that their products have been produced in low risk countries, “[...] the operator shall make available to the competent authority upon request relevant documentation demonstrating that there is a negligible risk of circumvention of this Regulation or of mixing with products of unknown origin or origin in high-risk or standard-risk countries or parts thereof.”²⁰

All in all, in this assessment, we should speak here of “probable EUDR readiness of VSS to date”. It can be expected that standards will work on this in coming periods, so an update on this aspect is foreseen by the commissioners of the study in 2024 (e.g. the provision of specific EUDR verification modules like RTRS is anticipated).

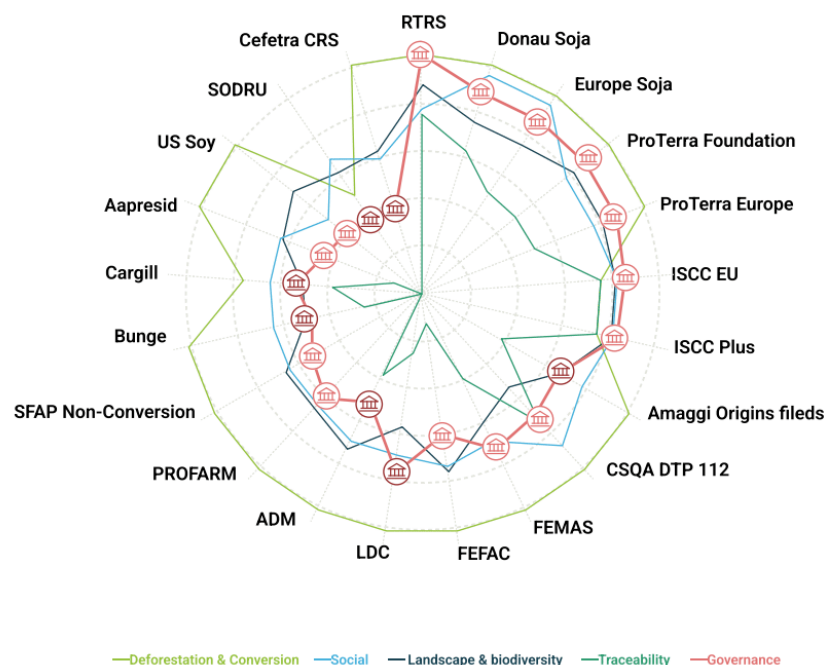
2.6 Governance and level of assurance

In this section, VSS were assessed against 16 criteria, which covered legal compliance, governance and decision-making processes, independence and integrity, audit and assurance, non-conformities and certification suspension, as well as regulations concerning sustainability claims and the use of symbols and logos as a proof of such claims.

Figure 6 VSS benchmarking, scoring results for governance and level of assurance



In terms of governance and assurance, independent standards outperform the corporate ones considerably. They tend to rely on stakeholder engagement in decision-making, which improves transparency and accountability.



VSS performance varies considerably in terms of the schemes' governance and level of assurance. In this section, RTRS performed better than any other scheme. One of the few criteria where this scheme did not get a full score was the requirement for certification bodies to proactively consult with affected stakeholders during both certification and surveillance audits. This criterion, however, is only covered by one of the assessed VSS, Amaggi Origins Field, which specifically requires that during the audit field visits, the certification body must consult with employees, third parties and other interested parties.

RTRS is followed closely by ISCC Plus and ISCC EU, Donau Soja and Europe Soja, ProTerra and ProTerra Europe, which all seem to have robust governance systems and levels of assurance. However, they should at times be more specific in the provision wording. They should also include more comprehensive internal control mechanisms and disclose more details on how these mechanisms should be implemented.

U.S. Soy achieved relatively low scores in this section, mainly due to weak transparency-related criteria (the scheme does not publish the results of the annual monitoring activities in the annual activity report, and does not disclose the volumes verified or certified, nor the geographic origin of all soy verified or certified under the scheme). It also scored low on the criteria on grievance and complaints mechanism, as its provisions do not stipulate in what form and to whom a complaint needs to be submitted, how anonymity of complainants is assured, and does not consider barriers to reporting (for example, literacy, language, access to digital technologies). The scheme also does not require participants to undergo an initial on-site audit. Farmers fill in a self-assessment form but are not all audited beforehand.

SODRU and Cefetra received the lowest scores, as they demonstrated relatively weak requirements across most of the governance and assurance criteria.

Assurance is a crucial aspect for voluntary standards, as it helps them to become more credible. This is particularly important for those VSS that are also certification schemes, as independent external verification supports certification results and contributes to building trust – and consequently certification recognition and uptake – by retailers, food service companies, and end consumers.

As part of this benchmark, we assessed if the VSS required that the economic actors must be certified by independent and qualified auditors. Of the 21 standards, 17 fully meet this criterion, while 4 only partially cover it. These include US Soy, Bunge, SODRU and Aapresid. 14 standards also require that economic operators successfully pass an initial audit before allowing them to participate in the scheme and that such initial audit of a new scheme participant or a re-certification of existing scheme participant shall always be on-site. CSQA DTP 112, Amaggi Origins Field, Cargill Triple S, Bunge, and Aapresid only partially meet this requirement (for example, do not specify if the visit must be on-site), while US Soy and Cefetra do not have such requirements at all.

3

Conclusions and recommendations

This chapter outlines conclusions that emerged through the benchmarking assessment and analysis. It further provides recommendations to the key actors capable of using their influence to make soy production more sustainable and ensure zero deforestation and conversion: regulators, voluntary standards, downstream buyers, and financial institutions.

3.1 Conclusions

Best-in-class standards should have clear no-deforestation requirements with a cut-off date of 2020 or earlier. To comply with AFi principles on deforestation and no-conversion, they should also require no conversion of any natural ecosystems, ask for compensation measures, and require either geo-references or high-resolution maps. Standards that aim to comply with EUDR should also require that producers and other economic actors not only collect geolocation data for all production slots, but also store them for five years. On the social spectrum, they should ensure human rights and safe and healthy working conditions, avoid discrimination, and respect the rights of local communities and indigenous people, as expected to be required by CSDDD.

To ensure that the environmental and social requirements are fulfilled, standards should have a robust governance system, including stakeholder engagement, and require qualified independent third-party auditing of participating entities.

Based on a combination of these (and other 49 basic requirements used in this benchmark), RTRS, Donau Soja, Europe Soya, ProTerra, ProTerra Europe, ISCC EU, and ISCC Plus emerged as the best-in-class standards. However, these leaders demonstrate certain weaknesses and areas for improvement – even in the most fundamental requirements. Thus, ISCC Plus and ISCC EU scored lower than they should have because of a weaker wording on ecosystem conversion. Donau Soja and Europe Soya, as well as ProTerra and ProTerra Europe can improve their requirements regarding collection of the geo-references and storing them for five years – provided they aim to become EUDR-compliant.

However, despite these areas for improvement, these seven standards demonstrate high levels of forest and ecosystem protection, reliable social safeguards, adequate traceability, good governance, and transparent independent assurance.

Overall, independent, multi-stakeholder VSS demonstrate more robust results than the corporate-owned schemes. In part, this is attributable to the much lower scores that corporate-owned VSS reach on traceability on average and in the governance and assurance category. They are neither independently governed nor do they foresee stakeholder participation. Moreover, they often lack clear guidance regarding logos, symbols, and sustainability claims attached to them. However, they also underperform in other categories, including landscapes and biodiversity, and social issues. Independent multi-stakeholder standards tend to be more inclusive and often ensure the involvement of a wide range of stakeholders who help to enrich the standards in relation to the breadth of sustainability issues they cover, and the stringency applied.

No-deforestation and no-conversion criteria are at least partially present in all standards, though differences remain in how far other ecosystems beyond forests are included. All standards, except for SODRU, have now gone beyond legality and require no-deforestation and no-conversion (but not necessarily for all ecosystem types), both legal and illegal, which marks a gradual improvement in the standards' quality over time, probably in part stimulated by benchmarks, FEFAC's influence and the EUDR coming into play. However, there is still room for improvement on their non-conversion requirements even for the otherwise robust VSS – ISCC Plus and ISCC EU – which currently only cover land with high carbon stock or high biodiversity, but not all landscapes and ecosystems.

Landscapes and biodiversity issues are mostly covered by the VSS. However, requirements in relation to the use of agrochemicals, integrated crop and pest management, and the approach to invasive species are still falling short. Reliance on international conventions and protocols (for example, Ramsar Convention, World Heritage Convention, as well as Stockholm and Rotterdam Conventions) instead of at times weaker national legislation would also strengthen the VSS in addressing biodiversity issues.

Social issues are addressed comprehensively by the 21 VSS, as well as generally in the soy industry – at least compared to other commodities. All standards are largely compliant with the key CSDDD requirements (no land eviction, no slavery and child labour, no discrimination, healthy and safe working conditions, freedom of association collective bargaining). At the same time, provisions on decent and living wages (also required by CSDDD), gender-sensitive no-discrimination policies, and more transparency in terms of community relations and grievance resolution can be further strengthened. In particular, attention should be paid to provisions on living wages and fair benefits for workers, as required by AFI. There are also other significant elements provided for in AFI Core Principles that are missing in many of the VSS. For example, only 12 VSS currently require FPIC for land acquisition or other actions that can affect the rights or livelihoods of indigenous peoples and local communities. With illicit land grabbing in the Cerrado region still happening now,²¹ strict FPIC requirements should be incorporated in all of the VSS.

Traceability is an area that requires the most attention, as it is here that many VSS demonstrated the weakest performance in view of the upcoming EU requirements. In order to be EUDR compliant it is essential that the VSS require producers to collect the geo-references and store them for at least 5 years. It is also important that the CoC actors should be able to follow soy and sustainability information attached to it throughout the supply chain. In terms of CoC models used in soy production, efforts should be made to make a shift from credits to more physical flows, e. g. an increase in mass balance (provided that EU compliance of the full supply/resource base is demonstrated). Physically segregated, certified DCF sustainable supply may be considered as a long-term objective, requiring more buyers of certified soy to share the costs, as it allows for stronger sustainability claims. However, it also requires separate or parallel production and transportation processes, requiring more effort and investment than may be feasible for many South American areas now.

In terms of assurance, almost all the assessed VSS require that the economic actors are certified by independent and qualified auditors. Exceptions include US Soy, Bunge, and SODRU, which only partially fulfil this requirement as they do not clearly define that the auditor must be independent of the activity being audited, free from conflict of interest, and have the specific skills necessary for conducting the audit related to the scheme's criteria. 15 VSS require that surveillance audits of all economic operators participating in the scheme should be annual. US Soy, Bunge, SODRU, CSQA DTP 112 and Aapresid lack such requirements.

Overall, it is important to note that VSS certification can provide support to the mandatory due diligence responsibilities of operators but will not replace them. The EUDR clearly states that voluntary certification should not be seen as an automatic proof of compliance, noting that “[i]n order to recognise good practice, certification or other third-party verified schemes could be used in the risk assessment procedure. They should not, however, substitute the operator's responsibility as

regards due diligence.”²² In discussions with several of the VSS their representatives clearly explained that their schemes do not seek to replace the company's EUDR compliance claims. However, with robust standards that support a company's compliance with and beyond EUDR and AFi requirements and that have much more to offer to producers, traders, and retailers, VSS can help companies control on DCF and legality requirements, improve their overall sustainability performance, build better data collection and reporting mechanisms, enhance stakeholder engagement, substantiate the brand sustainability, and ultimately win new markets. Furthermore, voluntary sustainability certification is often treated as an eligible KPI under sustainability-linked loans, and thus can help companies get access to financing under more favourable conditions.

Regulations like EUDR and landscape and biome wide approaches should play their role – as well as broader DCF and sustainability commitments by companies themselves. Standards are then part of a bigger toolbox for companies to help comply with their regulatory obligations as well as sustainability ambitions.

3.2 Recommendations

3.2.1 To voluntary sustainability standards

Overall, robust VSS have much to offer in the new regulatory and DCF company settings and can communicate more proactively in this regard.

Standards should rely more on best industry practices and international treaties and conventions than on compliance with national legislation. As worded in the clarifications to the EUDR which requires no deforestation, legal or illegal, as a pre-requisite for access to the EU market, focusing only on legality “[means relying] on the stringency of third countries' rules, potentially encouraging a race to the bottom in countries highly dependent on agricultural exports that may be tempted to lower their environmental protection with a view to facilitating the access of their products to the EU market”.²³ The VSS should continue to apply a higher bar that current global conservation and climate challenges require, and apply ambitious cut-off dates. While some may provide the service of EUDR compliance verification of full supply chains as an additional service, VSS should more clearly define their provisions related to protection of natural landscapes and biodiversity – not only on the management units, but also outside of the farm, e. g. wider landscape and community engagement. Standards should also pay more attention to social aspects of soy production. They should require that decent wages are paid, and that producers implement gender-responsive grievance and remedy mechanisms. Corporate-owned standards need to significantly improve their approach to governance and assurance as well as transparency and traceability. They will also benefit from wider stakeholder engagement at all stages of standard development, governance, and implementation. To improve transparency, corporate standards should publicly disclose the volumes of certified soy on a regular basis and set measurable time-bound commitments to increase certified volumes.

3.2.2 To regulators

Following the final adoption of the EUDR put forward by the EU Commission, the EU should develop clear and concise implementation guidance which should explain the roles, expectations, and obligations of all economic actors across soy supply chains. Particular attention should be paid to definitions, interpretation of risk, and traceability requirements. According to the regulation, EU Member States will be responsible for effective enforcement, ensuring that companies implement the regulation properly. Thus, European governments should develop adequate mechanisms and procedures to guarantee compliance. Then what exact role VSS can play in the provision of information and verification of certain aspects to support operators and traders with compliance will become clearer to companies and VSS alike.

Governments of the EU Member States should also integrate explicit no-deforestation and no-conversion and human rights requirements into trade agreements, both at bilateral and multilateral levels. This could facilitate implementation of the EUDR and prompt production countries to improve their relevant legislation and production practices.

In addition, EUDR currently only covers deforestation. Though the regulation recognises that protecting forests should not lead to the conversion or degradation of other natural ecosystems, these ecosystems are not included in it at the moment. To fully ensure deforestation and conversion-free soy on the European market, the next EUDR revisions should cover other ecosystems.

3.2.3 To downstream buyers and financial institutions

Downstream buyers, including retailers and food service companies, should develop and roll-out corporate policies to eliminate deforestation, conversion and human rights abuses from their supply chains, including embedded materials. Such policies should cover all commodities, all their operations and geographies and should be adopted at group level. Companies seeking to achieve deforestation- and conversion-free soy should choose best-in-class standards, combined with specific investments in farmers' best management practices in deforestation and conversion risk areas. They should be willing to reward producers for such above-legal sustainability commitments.

Retailers should also initiate communication campaigns about deforestation and conversion-free soy and other sustainability impacts of soy. As part of these efforts, retailers and food service companies should use certification schemes that provide a clear consumer-facing labelling system demonstrating the level of sustainability and traceability.

Downstream buyers should opt for standards that require cut-off dates of 2020 at the latest. They should also respect and promote earlier cut-off dates, including those set for specific regions or under special arrangements like the Amazon Soy Moratorium and the Cerrado Manifesto.

Financial institutions should require that all financing provided at the various stages of the supply chain should be aligned with stringent zero-deforestation and zero-conversion commitments as well as with high social standards. Using best-in-class VSS as markers for positive selection of debtors or investees can be one step in helping financial institutions to fulfil their environmental, social, and governance (ESG) commitments and contribute to the protection of natural resources in risk-prone producing areas. Banks can also use green finance products, including, green, social, and sustainability-linked loans, to reward robustly certified producers or stimulate producers to obtain such certification.

In addition, banks and financial institutions should more closely collaborate with financial regulators, including central banks, to develop deforestation- and conversion-free policies, guidelines and rules that will help to mitigate systemic risks, including climate change and biodiversity loss, within the global financial system. Regulatory measures may include (credit and investment) portfolio-level assessments in terms of banks' exposure to deforestation and conversion and obligatory targets to reduce or eliminate such exposure by a certain date. It is also important that while assessing deforestation exposure and related physical and financial risks, banks should be explicitly using common and accepted definitions, criteria and indicators aligned with AFi.

References

- 1 ITC Standards Map (n.d.), "The European Feed Manufacturers' Federation FEFAC Soy Sourcing Guidelines Benchmarking Tools", online: <https://www.standardsmap.org/en/identify?client=FEFAC>, viewed in May 2023.
- 2 Heilmayr, R., Rausch, L.L., Munger, J. et al. (2020), "Brazil's Amazon Soy Moratorium reduced deforestation", *Nat Food*, 1: 801–810.
- 3 WWF International (2020) "Nature Is Threatened By Unsustainable Production And Consumption Of Soy", WWF, online: https://wwf.panda.org/discover/our_focus/food_practice/sustainable_production/soy/, viewed in April, 2023.
- 4 Trase (2020, July), Trase Yearbook 2020 – The State of Forest-Risk Supply Chains, p. 5.
- 5 Zu Ermgassen, E.K.H.J, et al (2020), "Using supply chain data to monitor zero deforestation commitments: an assessment of progress in the Brazilian soy sector" *Environ. Res. Lett.* 15 035003.
- 6 FEFAC (2021), Soy Sourcing Guideline, Brussels, Belgium, FEFAC: 2021, p. 8
- 7 FEFAC (2023, July), FEFAC Soy Sourcing Guidelines 2023 Update Includes Conversion-Free Soy as Essential Criterion
- 8 The European Parliament (2023), Regulation of the European Parliament and of the Council on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010, the EU Commission
- 9 ITC Trademap (2023), "List of exporters for 1201 and 2304", online: <https://www.trademap.org/>, viewed in April 2023.
- 10 Green, J.M. H., Croft, S.A., Duran, A. P., and C.D. West (2019), Linking global drivers of agricultural trade to on-the-ground impacts on biodiversity, *PNAS*, 116 (46) 23202-23208, <https://doi.org/10.1073/pnas.1905618116>
- 11 Soutullo, A., Ríos, M., Zaldúa, N, and F. Teixeira-de-Mello, Soybean expansion and the challenge of the coexistence of agribusiness with local production and conservation initiatives: pesticides in a Ramsar site in Uruguay, *Environmental Conservation*, Volume 47, Issue 2, June 2020, pp. 97 – 103, DOI: <https://doi.org/10.1017/S0376892920000089>.
- 12 Wenzel, F., N. Hofmeister and P. Papini (2021, May 26), "Demand for soy puts pressure on Pantanal, Brazil's largest wild wetland", *Oeco*, online: <https://oeco.org.br/english/demand-for-soy-puts-pressure-on-pantanal-brazils-largest-wild-wetland/>, viewed in May 2023.
- 13 UNESCO, World Heritage in Danger, online: <https://whc.unesco.org/en/158>, viewed in April, 2023.
- 14 UNESCO, World Heritage in Danger, online: <https://whc.unesco.org/en/158>, viewed in April, 2023.
- 15 CIA World Factbook, GDP – composition, by sector of origin, online: <https://www.cia.gov/the-world-factbook/field/gdp-composition-by-sector-of-origin/>, viewed in April, 2023.
- 16 The World Bank / ILO, Employment in agriculture (% of total employment) (modeled ILO estimate), online: <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS>, viewed in April, 2023.
- 17 Chain Reaction Research (2022, August 29), "Cargill and Bunge's links to contested farm in Brazil, human rights violations contradict upcoming EU regulations", *The Chain*, online: <https://chainreactionresearch.com/the-chain-cargill-and-bunge-linked-to-contested-farm-in-brazil-and-human-rights-violations-contradicting-upcoming-eu-regulations/>, viewed in May 2023.
- 18 The European Parliament (2023), Regulation of the European Parliament and of the Council on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010, the EU Commission.
- 19 Client Earth (2021), *Getting to "Deforestation-free" Clarifying the Traceability Requirements in the Proposed EU Deforestation Regulation*, viewed in May, 2023.
- 20 The European Parliament (2023), *Regulation of the European Parliament and of the Council on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010, the EU Commission.*

- 21 Friends of the Earth, 'Caught Red-Handed: Reports Expose Ongoing Soy Industry Ties to Land Grabbing, Illegal Deforestation in Brazil'. Online: <https://foe.org/news/caught-red-handed-reports/>, viewed in June, 2023.
- 22 The European Parliament (2023), *Regulation of the European Parliament and of the Council on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010*, the EU Commission
- 23 EU Commission, *Questions and Answers on new rules for deforestation-free products*, online: https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda_21_5919/QANDA_21_5919_EN.pdf, viewed in May, 2023.

Profundo

Research & advice

Radarweg 505
1043 NZ Amsterdam
The Netherlands
+31-20-8208320
profundo@profundo.nl
www.profundo.nl