royal agrifirm group

Sourcing physical deforestation and conversion-free soy

Protocol version 2

1 September 2023

Although the Dutch feed industry is covering its soy footprint via credits for responsibly produced soy for many years now, the transition to physical responsible soy has not taken-off. That is why Royal Agrifirm Group pioneered in 2021 to develop a physical, deforestation and conversion-free soy supply chain in a pilot with Royal Friesland Campina. Since the publication of the first version of the protocol for this pilot in 2021, the context has changed. In 2023, the European Regulation for Deforestation-free Products (EUDR) was adopted, changing the game for all companies. In addition, Agrifirm consulted its stakeholders about the protocol to include their perspective in the next phase of the pilot. This document provides the updated protocol in line with the new legal context and the stakeholder input.

Definitions

Royal Agrifirm Group follows the definitions for deforestation- and conversion-free sourcing[1] as presented by the Accountability Framework Initiative (AFi). The AFi introduces the following definitions:

- *Conversion:* change of a natural ecosystem to another land use or profound change in the natural ecosystem's species composition, structure, or function.
- *Conversion-free:* commodity production, sourcing or financial investment that do not cause or contribute to land conversion.
- *Cut-off date:* The date after which deforestation or conversion renders a given area or production unit non-compliant with no-deforestation or no-conversion commitments, respectively. Royal Agrifirm Group uses the cut-off date of 31 December 2020[2].
- *Deforestation:* the loss of natural forest as a result of conversion to agriculture or other non-forest land use; conversion to a plantation; or severe or sustained degradation.
- *Deforestation-free:* commodity production, sourcing or financial investment that do not cause or contribute to

deforestation.

- *Segregation:* A chain of custody model in which the soy meeting the requirements from this protocol (deforestation and conversion-free with a cut-off date of 31 December 2020) is kept segregated from the initial input to the final output. No mixing with soy that does not meet these requirements is allowed (ISO 22095)
- *Soft Identity Preserved:* See segregation. Royal Agrifirm Group considers soybean meal as conversion and deforestation-free when soy is sourced from agricultural land that has not been converted or deforested after the cut-off date of 31 December 2020.

Sourcing guaranteed deforestation and conversion-free soy

Considering the main expansion frontiers in soy production, Royal Agrifirm Group and Royal Friesland Campina focus on both deforestation and conversion of natural ecosystems. A deforestation and conversion-free supply chain, in the context of this pilot, is defined as a supply chain that is free from deforestation and from conversion of natural ecosystems applying a cut-off date of 31 December 2020.

To guarantee physical deforestation- and conversion-free soy, Royal Agrifirm Group works closely together with a selection of its suppliers. These suppliers are active in regions with a high and low risk of deforestation and land-conversion. For both risk levels, verification to demonstrate compliance with the requirements is implemented. The type of verification differs according to the risk-level. That is why a thorough and broadly accepted risk-assessment of sourcing regions for our pilot is so important. Since such risk-assessment is not available, an initial assessment was made in the context of the pilot. See Appendix 1 for an updated version of the risk-assessment.

To assess the conversion and deforestation risk in the sourcing areas of the pilot, Royal Agrifirm Group makes use of publicly available documentation, such as the satellite monitoring by MapaBiomas, TerrasBrasilis, Global ForestWatch and Trase; and studies about land conversion in the Amazon and Cerrado by ABIOVE and Agrosatelite. Based on the input collected, a list is generated of low and high-risk areas (states in this case), which is discussed with suppliers and other stakeholders and finetuned in July 2023 based on their inputs. (See Appendix 2).

The verification regimes for low- and high-risk regions are introduced on the next page.

Introducing the EUDR

On the 9th of June 2023, the European Regulation for Deforestation-free Products (EUDR) was published in the Official Journal of the European Union. This Regulation requires companies to guarantee that beef, cocoa, coffee, soy, palm oil, rubber and timber, and various derivatives thereof, are produced in line with national legislation and guaranteed deforestation-free. Companies introducing these products on the European Union market need to upload a due diligence statement into the Information System showing that the batch is fully compliant with the requirements. The Regulation enters into force 18 months after the regulation entered into force (June 29th), so at the start of 2025. As of 2025, compliance with the EUDR will be an integral part of this protocol. Since a number of key elements in EUDR, such as the country benchmark, are not yet available. Agrifirm will continue to critically assess the implications of the new Regulation for its protocol.

Logistics

Logistics play a critical role in our journey towards deforestation- and conversion-free soy supply chains. Throughout the entire supply chain, deforestation- and conversion-free soy must not be mixed or mingled with soy that is not considered or guaranteed to be deforestation- and conversion-free. As these logistics can be challenging,

Agrifirm specifically selected its suppliers on their ability to handle the logistic challenge of keeping the soy shipments 'clean'. The chain of custody model in the pilot is segregation, also referred to as Soft Identity Preserved (Soft IP).

Figure 1 below gives a visualisation of this chain of custody model.
In this supply chain model, only farmers that deliver guaranteed deforestation-and conversion free soy are allowed to deliver to Agrifirm. The physical soy of these 'green' farmers must not be mixed, mingled or pooled at any time with soy that is not considered or guaranteed to be deforestation- and conversion- free of 'orange farmers'. The soy of 'green' farmers is allowed to be mixed, mingled and pooled.

Annual third-party audits of the Royal Agrifirm Group supply chain will take place to guarantee 'clean' supply chains, and the delivery of physical deforestation- and conversion-free soy to Royal Friesland Campina.

Verification

The section below introduces the verification for soy from low-risk areas and from high-risk areas. The risk-assessment is added as Appendix 1. Legal compliance is the starting point. That means that as of 2025, all soy needs to meet the requirements of EUDR. Whereas the EUDR requires accurate proof of no deforestation, this pilot is focused on both no deforestation and no conversion. Therefore, additional demands are set.

1. Sourcing from low-risk area's

In case soy is sourced from low-risk areas (see Appendix 1), we will ask the supplier for a declaration of origin. Two routes are possible:

- *Annual declarations*

Large suppliers often have their own systems in place to verify the origin of their soy. As of 2025, these suppliers will need to demonstrate the deforestation-free nature of the soy, using satellite images of specific farms (polygons). However, as the pilot also covers conversion, we will additionally ask these suppliers to show that their soy is originating from regions with a low risk of land-conversion and that no mixing with soy from high-risk regions occurred. In the further distant future, when other ecosystems are also included in EUDR, the due diligence statements, as defined under the EUDR, will be sufficient. Via annual declarations, the suppliers demonstrate to us that they delivered deforestation and conversion-free soy.

- *Third party verification of supply base*

Smaller suppliers often do not have

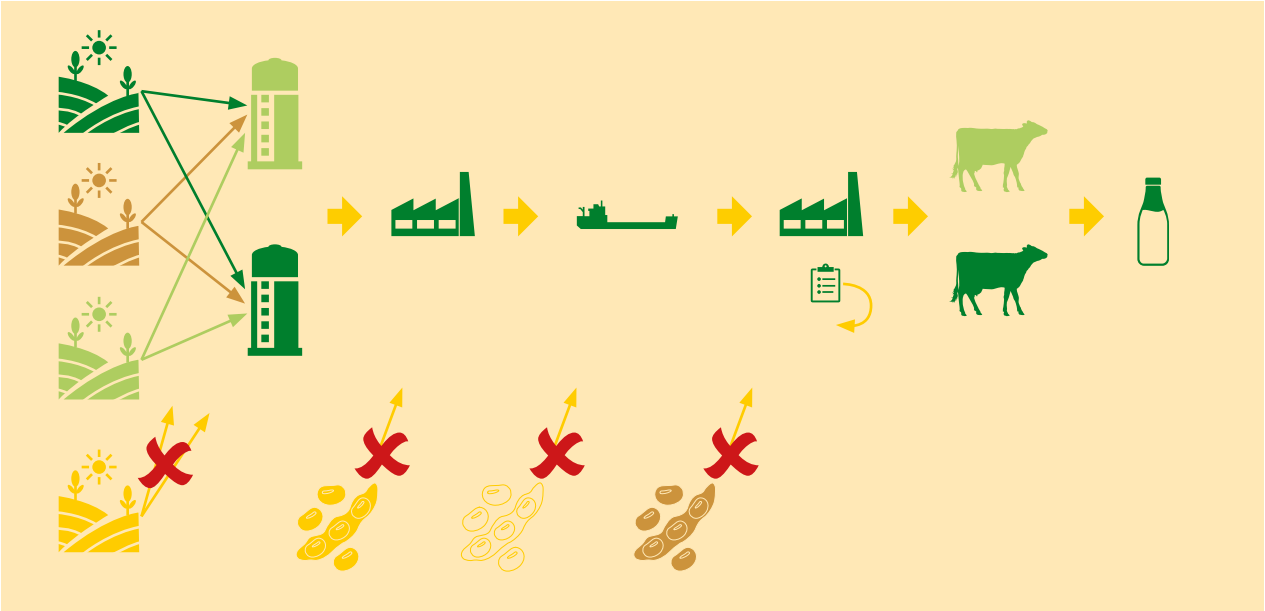

Figure 1: The Soft IP supply chain of deforestation-free and conversion-free soy.

a system to track and trace their commodity flows. As of 2025, they will need to implement such a system to be in line with EUDR. Until 2025, we will ask them to provide us with assurance about the origination areas of the soy by offering them the option to work on annual third-party verification to determine if their soy indeed originated from a low-risk area (see for 'more details about third party verification' the section below). As of 2025, they will share due-diligence statements for deforestation-free soy and/or in addition adequate proof that the soy comes from a region with a low risk of land conversion.

2. Sourcing from high-risk areas

In case soy is sourced from high-risk areas (see Appendix 1), we will ask for further verification or certification to ensure that the soy is from deforestation- and conversion-free farms. Three routes are foreseen:

› *FEFAC SSG compliant soy*

EUDR compliant, physical soy that is certified under schemes that are positively benchmarked against the FEFAC Soy Sourcing Guidelines 2023 and is kept separated from non-certified volumes, is accepted as deforestation-and conversion-free soy in this pilot.

› *Supplier traceability systems (batch level)*

Physical soy verified under a supplier-owned traceability system focusing on deforestation-and conversion-free soy is accepted when the following conditions are met:

- the soy complies with EUDR
- the definitions align with the AFi definitions
- assurance is provided about origin (field/land level)
- third-party auditing is included

› *Third party verification of supply base*

Smaller suppliers are often not able to deliver under their own or third-party certification system. We will offer them the possibility to work with us on yearly third-party verification to prove that the soy they deliver(ed) is from deforestation- and conversion-free fields/lands.

Sector commitments (RTRS/FEFAC SSG)

During the pilot, Royal Agrifirm Group will continue to deliver on its own and sector commitments and purchase RTRS credits supporting responsible soy for the Dutch market and FEFAC-SSG certified soy (e.g. via credits) for all soybean meal used in feed for markets outside the Netherlands, for all soybean meal imported to Europe.

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[1] Please find more information about the definition of 'deforestation-free soy' of this pilot on the AFI website and a topical summary of deforestation and conversion.
[2] For specific market demands it is possible to work with an earlier cut-off date, such as 1 January 2020.

Appendix 1: A risk-classification for soy sourcing countries

Disclaimer

This quick scan was executed by Schuttelaar & Partners using publicly available data about land conversion and deforestation in soy producing countries. The first version was published in December 2022. This is the second version (published in September 2023). The assessment will be frequently revised- also anticipating internationally recognized risk-assessments or benchmarks, such as the one in the forthcoming Regulation on Deforestation-Free Products (EUDR) by the European Union. Note that all definitions in the protocol are in line with the Accountability Framework. Argentina is not included in the risk-assessment because Agrifirm is not sourcing from Argentina.

Introduction

Royal Agrifirm Group and Royal Friesland Campina have joined forces to develop a fully segregated, deforestation and conversion-free supply chain to Europe. Their joint commitment is to guarantee a deforestation- and conversion-free supply chain (cut-off date 31 December 2020) on the one hand, whilst making an impact in the risk-regions on the other hand. This document presents a proposal for the qualification of states in Brazil, Paraguay, Canada and the United States into high and low risk for conversion.

Method

The section below presents the main insights into the risks of land conversion and deforestation in relation to soy production in the main soy producing countries. All information is derived from publicly available data sources, allowing for everyone to verify the results. Since we are using different data sources for different countries and the data sources all have their own approach (also the cut-off date of 31 December 2020 requires rather recent data that is not always available), the quick-scan should be seen as a starting point rather than an end point. The main indicator used to judge an area is “recent land conversion” and in some cases also the indicator “potential/predicted land conversion”

is included. If one of the data sources suggests that land conversion could be a problem, this area is indicated as high-risk. In that sense, the risk assessment takes a 'better safe than sorry' approach.

The initial protocol was discussed with the key stakeholders at the start of 2023. Appendix 3 presents the minutes of this stakeholder board on Agrifirms Responsible Procurement policy, and specifically about this protocol. The key take-aways from that stakeholder session have been processed in this protocol and can be summarized as:

- Continue the focus on eliminating both deforestation and land conversion.
- Make sure to align the protocol with the new reality of the EUDR.
- Make sure to stay connected to and/or source from high-risk regions in order to stay engaged in finding solutions for halting conversion.
- Focus on those areas with the highest conservation value.
- Remain mindful of geopolitical realities that impact trade flows.
- Be careful not to broaden the scope too much. The transition from extensive agricultural use into intensive agricultural use should not be defined as conversion of natural ecosystems.
- Focus only on those states where soy production is taking place at a meaningful scale.

These findings, in addition to new data sources, are added in the assessment below.

Brazil

General information

Brazil is the fifth biggest country in the world. The country is divided in to 5 bigger regions, 26 states (see table 1), 136 mesoregions, 557 microregions and 5.569 municipalities. For the past years, Brazil has been the biggest soy producer in the world. It is the number one sourcing area for the European Union.

Legislative framework

Brazil has some of the strongest laws for the protection of the environment and the guarantee of best practices at farm level. The Forest Code obliges landowners to leave part of their lands intact (80% in Amazon, 35% Cerrado and 20% rest), in addition a buffer zone around riparian areas and steep hills needs to be installed. The Amazon Moratorium, an agreement between the soy traders, blocks the trade of soy from converted Amazon lands.

The current agricultural expansion area is the Cerrado, specifically the states of Maranhão, Tocantins, Piaui and Bahia.

Deforestation and land conversion in Brazil

Although satellite systems in Brazil allow for tracking of deforestation at a very small scale, the focus of this proposal is at a higher level of aggregation. Agrifirm wants to create a physical deforestation and conversion-free supply chain and hence needs to take into account the practical reality of the supply chain as well. Therefore, the initial focus is on identifying the low risk-states[1].

Region	States in the region	Biomes in the region
Central-West Brazil	Goias Mato Grosso Mato Grosso do Sul	Amazon Cerrado
North-East Brazil	Alagoas Bahia Ceará Maranhão Paraíba Pernambuco Piaui Sergipe Rio Grande do Norte	Cerrado Mata Atlantica Caatinga
North Brazil	Acre Amapá Amazonas Pará Rondônia Roraima Tocantins	Amazon Cerrado
Southeast Brazil	Espírito Santo Minas Gerais Rio de Janeiro São Paulo,	Mata Atlantica
South Brazil	Paraná Rio Grande do Sul Santa Catarina	Mata Atlantica Pampas

Table 1: The regions, states and biomes of Brazil

Risk qualification in Brazil

INPE, the Brazilian institute for space research, maps all land conversion and deforestation in Brazil (illegal and legal). The data is available via 'Terra Brasilis[2]'. An initial 'high-over' look at the map shows that recent deforestation and land conversion is most prominent in the midst of the country (the Cerrado) and that since 2002 hardly any deforestation happened in the southern states: Rio Grande do Sul, Santa Catarina and Paraná. Also, along the coastline, land conversion since 2002 is absent. Rio Grande Do Norte, Paraíba, Pernambuco, Alagoas and Sergipe are not indicated on the map to have conversion of lands. Note that not all these states produce soy.

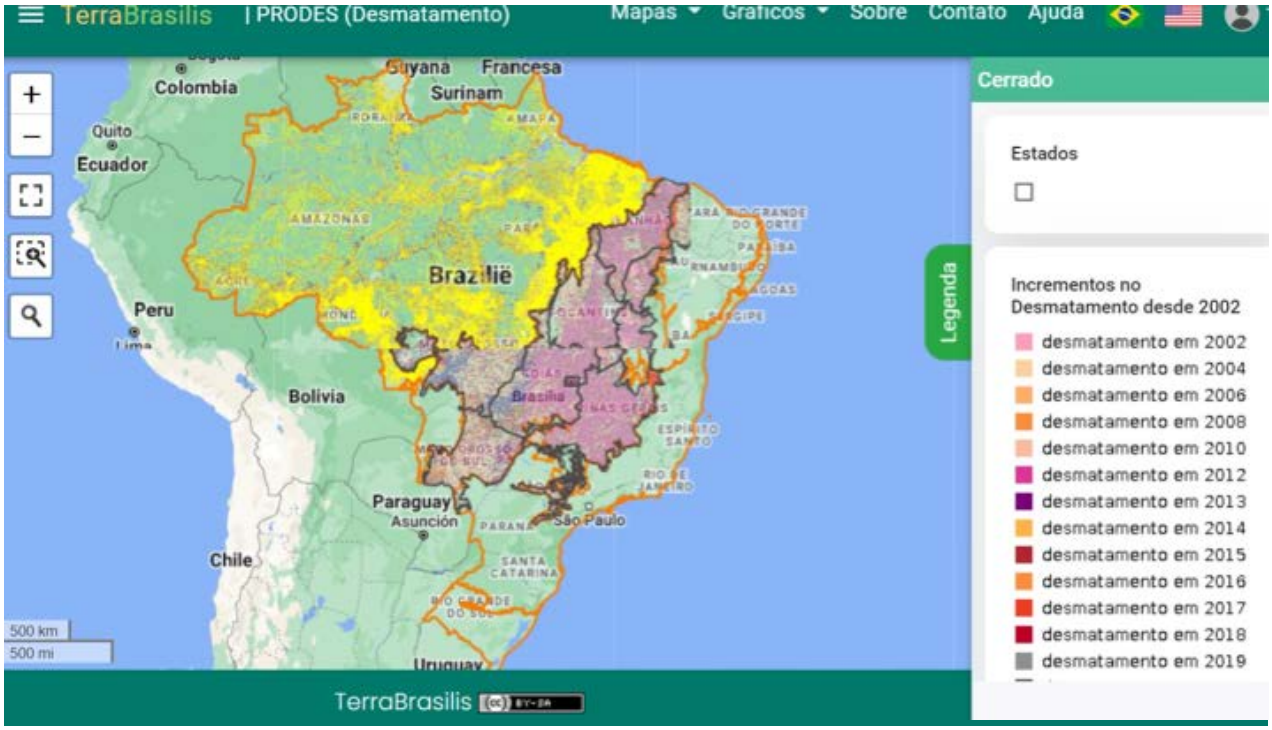

Figure 1: Deforestation and land conversion in Brazil since 2002

Figure 2 shows the total soy production per state. In the North and along the coastline, soy production is hardly present. In Southern Brazil, specifically the state of Parana, soy production is with 19m tons (in 2018) quite substantial, close to the largest soy producing state Mato Grosso. The grey-striped states have neglectable soy production. The assessment focuses on the biggest soy producing states.

Clarification

Agrifirm takes a conservative approach to assessing whether a state has a high or low risk for land conversion and deforestation. The states with high deforestation-risk can easily be identified using INPE data and the hotspots are clear to the soy community as well. The states that do not have deforestation (anymore) can also be identified rather straightforward. There are however a lot of states in the 'middle category': such as old Cerrado expansion area, states under the Amazon Moratorium and the coastline of the country. Identifying credible data sources for the qualification of these areas is a lot more challenging.

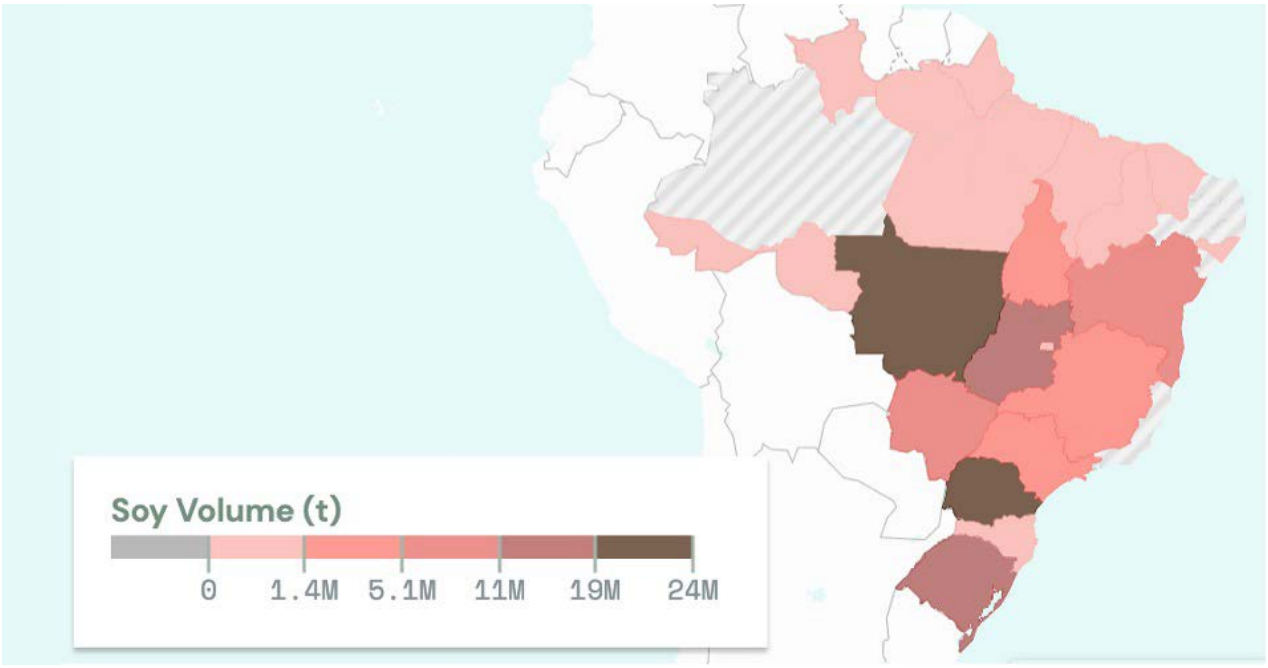

Figure 2: Soy production volumes (t) in Brazil per state (source: Trase 2018)

State per state assessment

A dataset from Trase about the year 2018[3] gives insights into the soy volumes and the deforestation risk (in ha and %) associated with Brazilian soy export. Table 2 shows the 13 states with the highest soy production and the biggest deforestation risk. The first four states, in red, have the highest risk of deforestation. The four states in orange, have a lower but still significant risk. The green states present the lowest risk. The state Parana relatively has one of the lowest soy deforestation risks per hectare.

Brazil states	Soy deforestation risk (HA)	Deforestation risk (%)	Volume (T)	Volume of total (%)
Tocantins	19761,78	32,15%	2332768,75	2,87%
Bahia	11139,84	18,12%	5056921,03	6,22%
Mato Grosso	9990,26	16,25%	23669759,88	29,12%
Maranhao	8233,15	13,40%	1378595,81	1,70%
Piaui	4924,07	8,01%	803034,93	0,99%
Goias	3921,35	6,38%	10786783,85	13,27%
Minas Gerais	1966,82	3,20%	4914084,86	6,05%
Para	660,88	1,08%	1428846,57	1,76%
Mato Grosso Do Sul	608,75	0,99%	8020065,16	9,87%
Rondonia	87,52	0,14%	569948,92	0,70%
Parana	62,02	0,10%	18658205,08	22,95%
Sao Paulo	55,78	0,09%	3410297,13	4,20%
Distrito Federal	50,05	0,08%	253110,05	0,31%

Table 2: Deforestation risk per state (source: Trase 2018)

High-risk states following Soft Commodities Forum

The Cerrado is considered the new agricultural frontier in Brazil, specifically the states of Maranhão, Piauí, Bahia and Tocantins. The Soft Commodities Forum has identified the 61 municipalities in the Cerrado (new and old expansion states) that have the largest risk for land conversion. The mapping of these municipalities can be found here and includes municipalities in Bahia, Tocantins, Piauí, Maranhão, Mato Grosso, Goiás and Minas Gerais.

States under the Amazon Moratorium

Soy traders have agreed not to source soy from regions in the Amazon biome that have been deforested after 2008. These agreements are referred to as the Amazon Soy Moratorium[4]. Although deforestation has indeed declined since the start of the Moratorium. Deforestation for soy is not gone. The figure below shows where in the Amazon, soy production takes place and Table 4 indicates the deforested area per year.

Figure 3 and Table 3 indicate the need to also be careful in the states of the Amazon biome, despite the Moratorium and include the states referred to above as 'high-risk'.

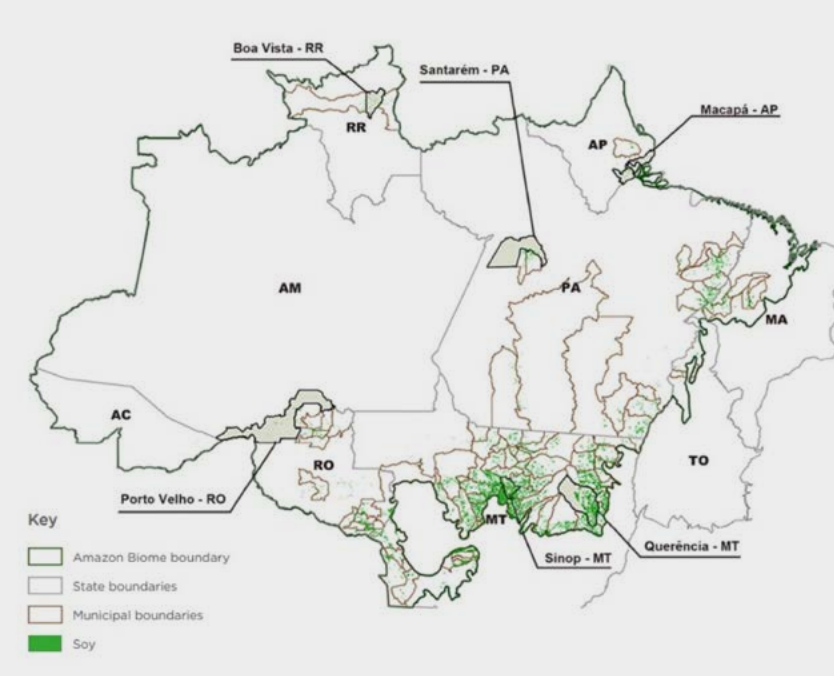

Figure 3: Locations of soy production in the Amazon biome crop year 2019/2020

States in the Cerrado

State	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
MT	71,841	71,664	94,321	70,983	102,352	101,914	150,497	136,050	127,965	137,818	177,087	1,242,492
PA	355,732	341,788	255,202	172,610	213,457	182,990	288,568	284,444	260,218	263,098	445,012	3,063,119
RO	42,479	44,803	77,299	69,617	96,915	76,822	108,522	122,045	128,743	120,438	138,002	1,026,705
RR	11,124	24,268	13,174	10,801	15,364	19,056	23,617	24,913	12,575	8,475	54,286	217,653
AP	4,739	7,201	1,676	1,954	2,417	2,911	4,582	1,827	1,893	1,397	3,877	34,474
MA	45,563	25,317	18,087	13,483	16,054	13,944	17,146	13,896	15,494	8,150	16,541	203,676
TO	2,340	2,998	1,243	1,054	1,875	1,213	2,143	1,952	1,274	652	995	17,739
Total	**533,818**	**518,039**	**461,002**	**340,502**	**448,434**	**398,850**	**595,105**	**858,127**	**548,162**	**540,028**	**836,790**	**5,805,857**

Table 3: Total annual deforestation area (ha) in the Amazon biome during the Soy Moratorium (2009-2019) in Mato Grosso (MT), Pará (PA), Rondônia (Ro), Roraima (RR), Amapá (AP), Mara-nhão (MA) and Tocantins (To).

The Cerrado is referred to as the expansion frontier of Brazil, especially the states Maranhão, Tocantins, Piauí and Bahia (MATOPIBA) (see figure 4 for a map). A recent report by ABIOVE shows the expansion for soy production and for other uses. Figure 5 indicates that deforestation in general and for soy is very small in Paraná (PR), Rondônia (RO), Sao Paulo (SP) and Para (PA) and in the Federal District (DF). In other states such as Goias (GO), Mato Grosso (MT), Minas Gerais (MG) and Mato Grosso do Sul (MS) and Maranhão (MA), Tocantins (TO), Piauí (PI) and Bahia (BA) deforestation for other purposes than soy and for soy is quite significant.

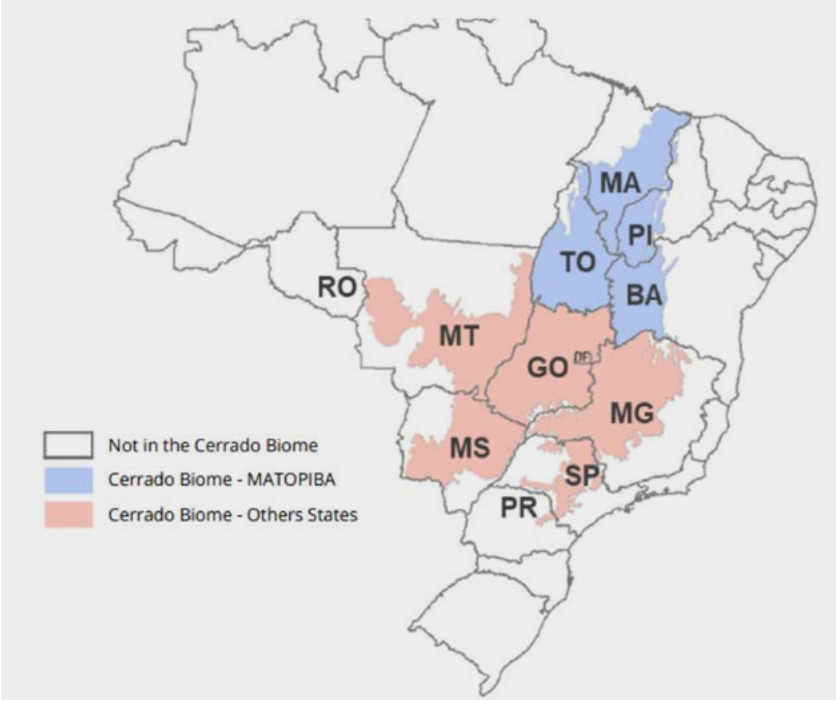

Figure 4: The states in the Cerrado Biome

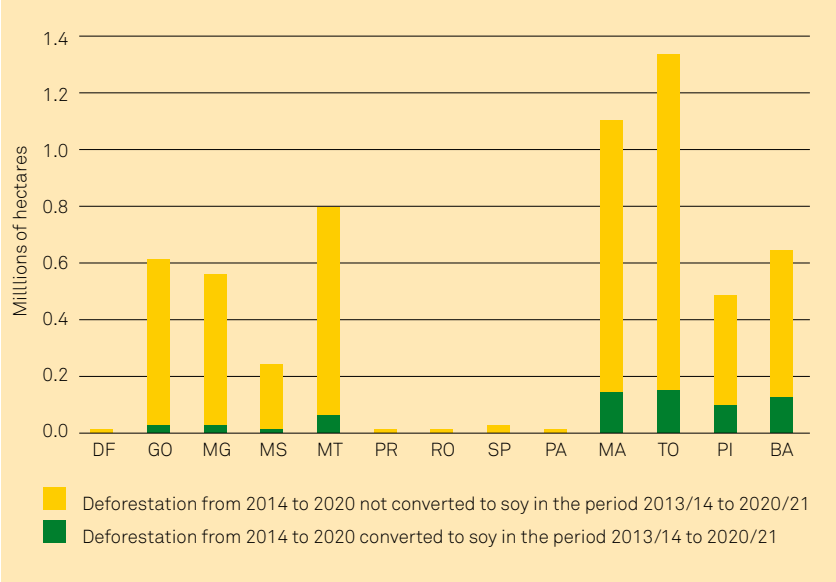

Figure 5: Deforestation in the Cerrado converted into soy and not converted into soy

Conclusion

Different information sources show a slightly different picture for deforestation and land conversion in Brazilian states. Mato Grosso do Sul for instance is sometimes mentioned as low (Trase) and sometimes as higher risk (ABIOVE/ Agrosatelite). Agrifirm takes the conservative approach and assigns a state the high-risk label when a credible data source suggests that deforestation or land conversion is taking place. During the stakeholder consultation the position of Rondônia was mentioned. As a state in the midst of the Amazon, the risk of being connected to deforestation should not be underestimated. That is why that state is added to the list of high-risk countries. Based on the information as shared above, our proposal would be to make the following risk-qualification.

Risk-level	States/Countries
Low	Rio Grande do Sul, Santa Catarina, Paraná, Rio Grande Do Norte, Paraíba, Sao Paulo, Pernambuco, Sergipe and Distrito Federal
High	Bahia, Rondônia, Tocantins, Piauí, Maranhão, Mato Grosso, Goiás, Minas Gerais, Mato Grosso do Sul, Alagoas, Ceará, Acre, Amapá, Amazonas, Pará, Roraima, Espírito Santo, Rio de Janeiro

Canada

The soy production sector in Canada produced 6.27 MMT of soy in 2021. Between 1971 and 2016, the soy production volumes grew by 57%, while the total farm area decreased by 6%. In total 70% of the total volume is exported to 60 countries and 19% to the European Union[5]. Together the four provinces Ontario, Quebec, Maritimes and Saskatchewan account for 99% of the total production area (see figure 6 and table 4).

Legislative framework

Canada has a big forestry/timber sector. Responsible management of these forests is a priority. The country protects its forest via a strong legal framework[6]. In 2021, the Canadian government announced a serious investment in protecting the Prairies (the Canadian part of the Great Plains in the states of Alberta, Manitoba and Saskatchewan) and wetlands[7].

Deforestation and land conversion in Canada

A recent study[8] about protection of native grass lands in the prairies of Canada, mainly in Saskatchewan, shows the importance of this biome and the need to protect it from land conversion. The Plowprint Report[9] by WWF suggests that also in Canada grasslands are still converted for the production of crops such as wheat and soy. The three Canadian states that are part of the Great Plains are Alberta, Manitoba and Saskatchewan. But similar to the situation in the United States, there may be challenges with data interpretation.

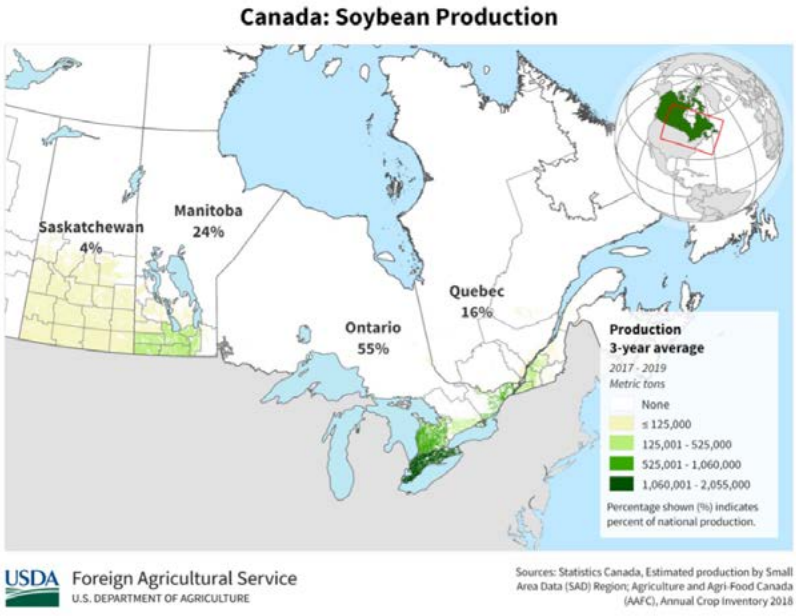

Figure 6: Soy production in Canada

Year	Canada Total	Ontario	Quebec	Maritimes	Manitoba	Saskatchewan
2021	6,271,835	4,082,331	1,101,708	72,643	963,764	50,935
2020	6,358,500	3,908,700	1,159,700	55,900	1,162,800	68,800
2019	6,145,000	3,708,200	1,146,000	56,600	1,122,300	107,200
2018	7,416,600	4,200,500	1,164,000	76,600	1,731,600	231,800
2017	7,716,600	3,796,600	1,115,00	80,700	2,245,300	479,000
2016	6,462,700	3,374,700	1,040,000	76,500	1,669,000	202,500

Table 4: Soy production (in metric tonnes) in Canada

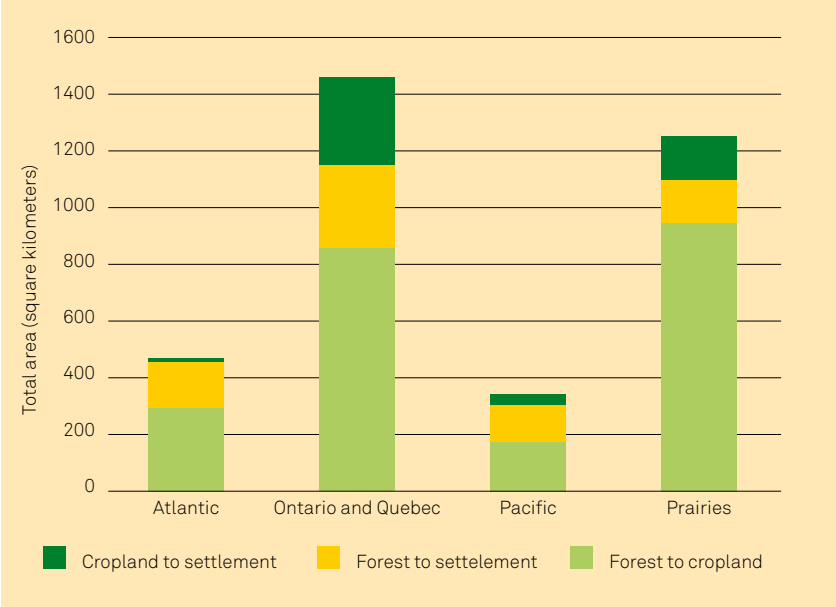

Figure 7: Land use change in Canada between 2010 and 2015

Risk-level	Provinces and territories
Low	Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island, Quebec, Saskatchewan, North-west Territories, Nunavut, Yukon

Conclusion

Four states produce 99% of all soybeans in Canada, therefore the other states are removed from the risk-qualification. One of these states, Saskatchewan, is located in the Great Plains and mentioned in publications, such as the PlowPrint report, for the risk of grassland conversion. However, researchers have indicated the challenge to identify grassland in use for agriculture from natural grasslands. In the chapter on the United States more detailed information is provided about this challenge. Therefore, in the revision all states in Canada are considered low-risk.

Paraguay

In 2020, Paraguay produced 11 million tonnes of soybeans. Paraguay is the sixth largest producer of soybeans and the fourth largest exporter. Soybeans are an important source of income and contribute 18% to the country's GDP (UNDP). Most of the soybeans are produced in the south-east of Paraguay in the Atlantic Forest (see figure 8).

Legislative framework

In 2004, Paraguay introduced their Zero Deforestation Law, aimed at halting deforestation in the Eastern region[10]. Since the introduction of the law, deforestation in the Atlantic Forest has declined significantly but not fully stopped. In addition, deforestation continued in other regions such as the Chaco[11].

Deforestation and land conversion in Paraguay

Land conversion in Paraguay is widespread and threatens important ecosystems. The Mapa Biomas system shows the presence of land conversion in almost all parts of the country, as can be seen in figure 9. Not all land conversion is related to soy production. Mappings executed by Trase, suggest that land conversion for soy (for export) is especially taking place in the Eastern part of the country, as can be seen in figure 10.

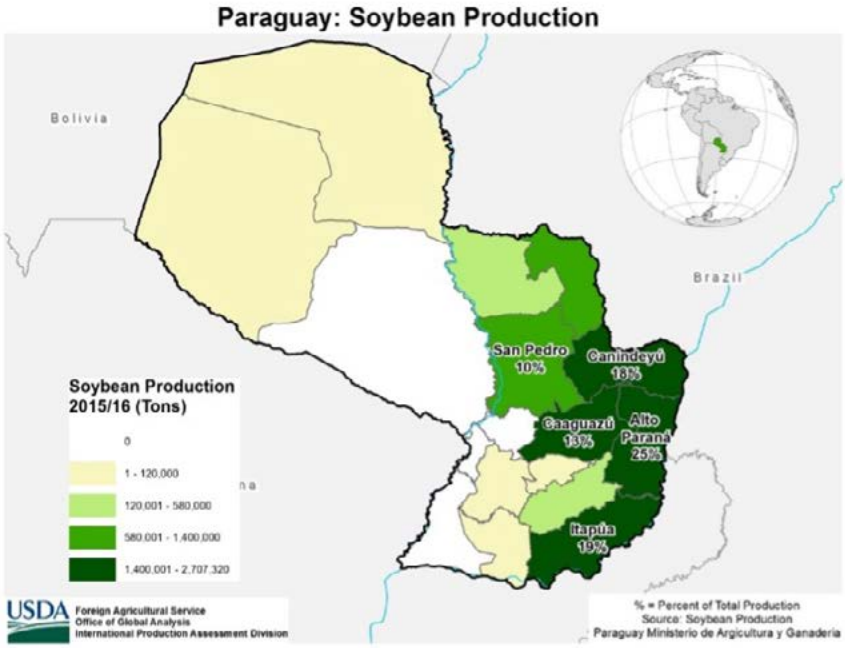

Figure 8 - Soybean production in Paraguay (USDA)

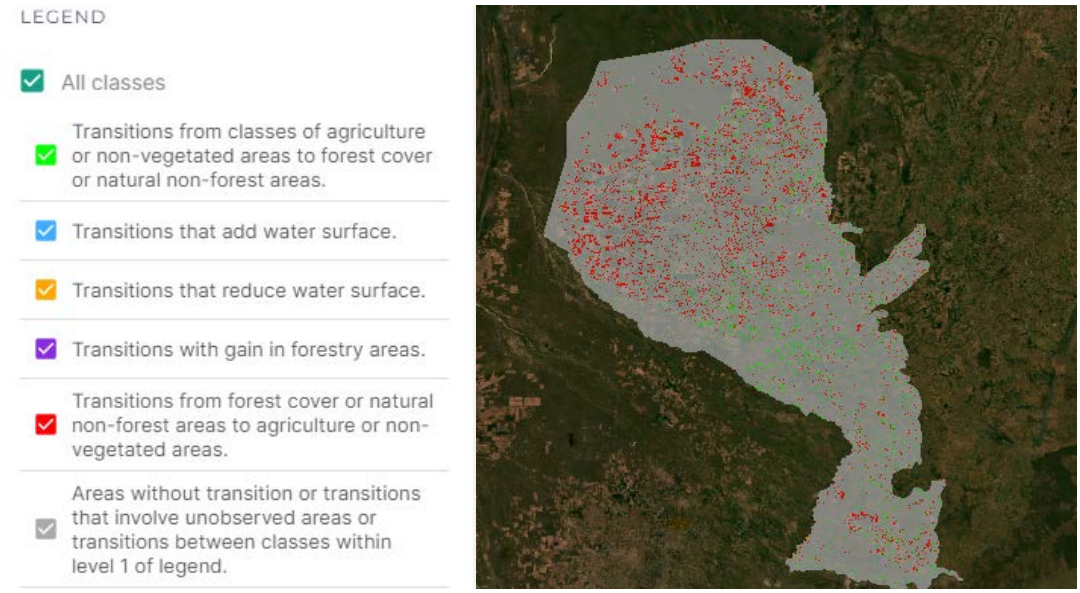

Figure 9: Transitions in land use in Paraguay (Gran Chaco area). Source: MapaBiomas Chaco

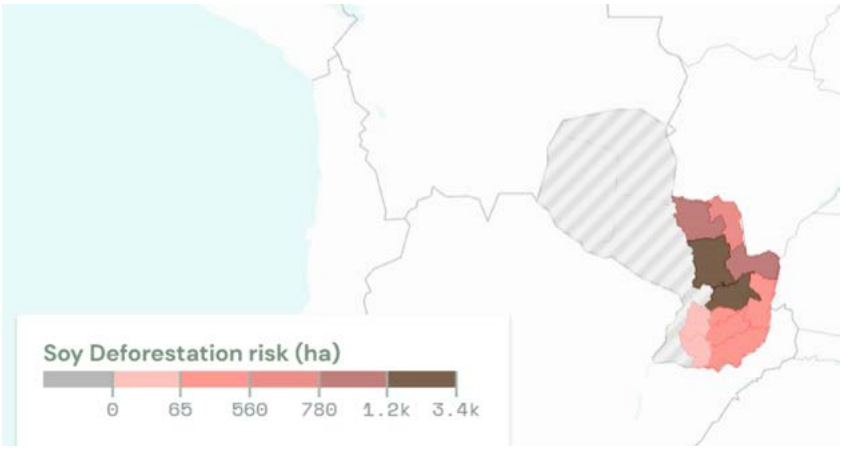

Table 5 below indicates per 'department' the exported volume and the deforestation risk. When the relative volume linked to deforestation is below 1%, the department is indicated to be low risk. In all other cases, the department is considered to be high risk.

Figure 10: Soy deforestation risk in Paraguay (source: Trase 2019)

Paraguay regions	Soy deforestation risk (HA)	Soy deforestation risk (%)	Volume (T)	Volume of total (%)
San Pedro	3360,38	40,55%	811685,46	11%
Caaguazu	1182,02	14,26%	1055374,05	14%
Canindeyu	1092,38	13,18%	1200413,38	16%
Concepcion	783,18	9,45%	60244,94	1%
Amambay	556,65	6,72%	309251,88	4%
Alto Parana	439,57	5,30%	1998053,41	27%
Caazapa	407,67	4,92%	420277,15	6%
Itapua	392,27	4,73%	1400982,12	19%
Guaira	65,09	0,79%	33378,96	0%
Misiones	7,68	0,09%	64038,05	1%
Paraguari	0,82	0,01%	36,79	0%

Table 5: (source:Trase 2019)

Paraguayan Atlantic Forest

In 2019, 75,000 ha of forest was cleared in the Paraguayan Atlantic Forest. Currently, only 13% of the native vegetation in the Paraguayan Atlantic Forest is still standing[12]. As most Paraguayan soy is produced in this region, Trase addresses that (part of) soy exports from Paraguay are exposed to a risk of illegal deforestation.

Chaco region

The Zero Deforestation Law is focused on the Eastern region of Paraguay, and therefore does not cover the Paraguayan Chaco, which lies in the West[13]. Unintendedly the law may have caused a new deforestation front in the Chaco. Deforestation in the Chaco region is rapidly increasing, with a loss of 2.4 million ha of native vegetation between 2010 and 2019. Over the past decade, the Dry Chaco has even seen some of the highest rates of deforestation in the world, as indicated by Trase[12]. It must be noted that the Dry Chaco is located unfavorable for exports as it is far from the sea. Therefore, most of the soy from the Chaco may be sold on the domestic market.

Conclusion

Given the deforestation and land conversion rates in Paraguay and the lack of monitoring, almost the entire country should be considered high-risk.

Risk-level	Departments
Low	Guaira, Misiones, Paraguari
High	Alto Paraguay, Alto Parana, Amambay, Asuncion,Boqueron, Caaguazu, Caazapa, Canindeyu, Central, Concepcion, Cordillera, Itapua, Neembucu, Presidente Hayes, San Pedro.

United States

The United States has for a long time been the number one soy producer. Soy production is mainly concentrated in the Midwest of the country, as can be seen in figure 11 below.

Legislative framework

The United States has a comprehensive legal framework for the protection of natural ecosystems, incentivizing farmers via financial compensation measures to implement certain conservation practices. The so called Conservation Reserve Program (CRP) allows farmers to remove environmentally sensitive land from agricultural production in exchange for a yearly payment. Contracts for land in the CRP can last 10 to 15 years. In 2023, the US government introduced a new version of CRP, specifically addressing the protection of grasslands[14]. Grassland CRP allows producers and landowners to continue grazing and haying practices while conserving grasslands and promoting plant and animal biodiversity and soil health.

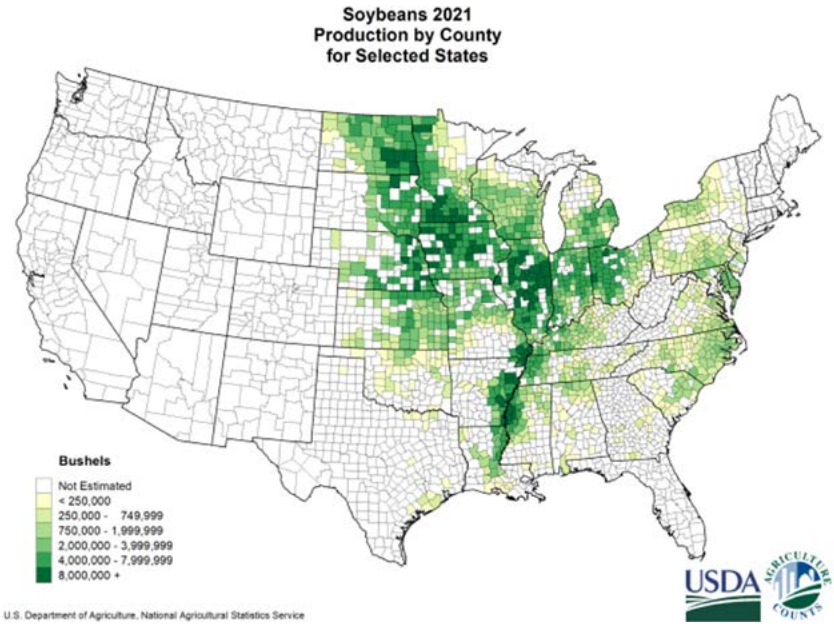

Figure 11: Soy production in the United States in 2021[15]

National certification system

The United States is in the unique position to have a national sustainable soy program. The so called 'Sustainable Soybean Assurance Protocol' (SSAP), is recognized to be in compliance with the FEFAC Soy Sourcing Guidelines (2021 version, including non-conversion).

19

Figure 12: Great Plains in the United States

Deforestation and land conversion in the United States

The United States is generally perceived as a country with a low risk of deforestation and of land conversion. In the European Soy Monitor, reporting about the uptake of certified and low-risk soy, FEFAC proposes a low-risk qualification for the entire United States. However, civil society organizations have raised concerns about land conversion in the United States, specifically for the natural grasslands of the Great Plains.

The Great Plains

Figure 12 provides an overview of the states that are part of the Great Plains (in the United States). WWF US publishes an annual report (Plowprint report[16]) on conversion of this native grassland into agricultural lands. The 2022 report about the year 2020, finds that a cropland expansion of nearly 1.8 million acres occurred across the Great Plains in 2020 alone (in the entire Great Plains also covering parts of Mexico & Canada).

Other researchers have raised the issue that monitoring conversion of grass lands is a challenge, because moderate resolution satellite data is not accurate enough to successfully differentiate between native grasslands and farmlands[17 18]. In contrast to the Plowprint report, these researchers estimate that from 1985 to 2020 approximately as much land was allowed to go fallow as native land turned into farmland.

Risk-level	States
Low	Maine, New York, Vermont, New Hampshire, Pennsylvenia, Rhode Island, Conneticut, Massachusetts, Ohio, Virginia, Delaware, New Jersey, West Virginia, North Carolina, Maryland, Georgia, South Carolina, Florida, Washington, Idaho, Oregon, Nevada, California, Utah, Arizona, Wyoming, New Mexico, Arkansas, Louisiana, Wisconsin, Michigan, Indiana, Oklahoma, Illinois, Missisipi, Alabama, North Dakota, South Dakota, Nebraska, Kansas, Texas, Tennessee, Minnesota, Iowa, Missouri, Kentucky

20

Conservation Reserve Program

The fact that the compensation measures in the Conservation Reserve Program can be temporarily (10-15 years) in nature, poses a challenge in this risk-assessment. It raises the question whether agricultural land that was enrolled in CRP for 10-15 years and then again used for agricultural land, should be defined as conversion of 'natural ecosystems' or not.

The Accountability Framework does offer some guidance, distinguishing four types of natural ecosystems amongst which regenerated natural ecosystems. The definition of regenerated natural ecosystems is: "an ecosystem that was subject to major impacts in the past (for instance by agriculture, livestock raising, tree plantations, or intensive logging) but where the main causes of impact have ceased or greatly diminished and the ecosystem has attained species composition, structure, and ecological function similar to prior or other contemporary natural ecosystems".

This leads to the question whether the ecosystem can be fully recovered after 10-15 years. It is unlikely that this happens so fast. Therefore, Agrifirm decided to not consider agricultural lands turned into CRP lands and then back into agriculture as conversion of natural ecosystems.

Conclusion

As a result of a deeper assessment of the of the (Grasslands) Conservation reserve Program and the input of our stakeholders, assign the low-risk status to all soy producing states in the United States.

Foodnotes

[1] It is important to realize that the Soft Commodities Forum is focusing on risk-municipalities in the Cerrado. Trase also allows for tracing back flows to the municipality level
[2] http://terrabrasilis.dpi.inpe.br/app/map/deforestation?hl=pt-br
[3] Trase, data for the soy sector about 2018, https://explore.trase.earth/explore/brazil/soy/commodity_deforestation_risk?includes_domestic=true&year_start=2018&year_end=2018&region_type=STATE&region_level=3
[4] https://abiove.org.br/en/relatorios/moratoria-da-soja-relatorio-13o-ano/
[5] https://soycanada.ca/industry/statistics/
[6] https://www.nrcan.gc.ca/our-natural-resources/forests/sustainable-forest-management/canadas-forest-laws/17497
[7] https://www.canada.ca/en/environmentclimate-change/news/2021/07/canadainvests-25-million-to-protect-wetlands-andgrasslands-in-the-prairies.html
[8] 2021, https://www.canada.ca/content/dam/eccc/documents/pdf/cesindicators/land-usechange/2021/Land-use-change_EN.pdf
[9] https://onlinelibrary.wiley.com/doi/full/10.1111/cag.12768
[10] https://www.worldwildlife.org/publications/2021-plowprint-report
[11] Paraguay_CRP.pdf (climatelinks.org); https://www.climatelinks.org/sites/default/files/asset/document/Paraguay_CRP.pdf
[12] Trase; https://insights.trase.earth/insights/soy-deforestation-risk-in-paraguaycontinues-%20despite-decline/
[13] https://insights.trase.earth/insights/soydeforestation-risk-in-paraguaycontinues-despite-decline/
[14] https://www.climatelinks.org/sites/default/files/asset/document/Paraguay_CRP.pdf
[15] https://www.fsa.usda.gov/news-room/news-releases/2023/usda-announces-grassland-conservation-reserve-program-signup-for-2023
[16] https://www.nass.usda.gov/Charts_and_Maps/Crops_County/sb-pr.php
[17] https://www.worldwildlife.org/projects/plowprint-report
[18] https://www.nature.com/articles/s41467-020-18045-z
[19] https://www.mdpi.com/2073-445X/9/5/166

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Appendix 2: Stakeholder engagement

On February 28th 2023, Royal Agrifirm Group (RAG) organized an external stakeholder session on their responsible sourcing policy. The aim of the session was to exchange ideas about the approach, ambition, and progress of RAG's responsible sourcing policy of agricultural raw materials for animal feed. Below you will find anonymized stakeholder feedback, specifically about the pilot. The full minutes, covering all topics on the agenda can be found on the Agrifirm website.

Deforestation-free soy pilot project

The pilot on deforestation and conversion free soy with Friesland Campina was introduced to the stakeholders. In this pilot, the verification regime is dependent on a risk-assessment. This risk-assessment was presented, and dilemmas were shared with the group.

Stakeholder feedback on the approach:

- Communicate clearly about the Chain of Custody models accepted in the project.
- Ensure thorough verification of the project - also in low-risk areas.
- Include a wide range of sustainability aspects, not just deforestation and conversion. Certification is about social and environmental aspects. Make sure Agrifirm pays attention to this.
- Look for synergies in the supply chain to benefit from each other's efforts. There may be opportunities to start projects together with supply chain partners.
- Extend authentication to low-risk areas. The project zooms in on the level of the farmer in high-risk areas, which should also be done in low-risk areas (this is also required in the deforestation law).

Stakeholder feedback on the risk analysis:

- Keep conversion of natural ecosystems in scope. For soy, the focus should be on deforestation and conversion. Therefore, don't lower the ambition level to the level currently proposed in the EUDR. Keep track of what is in EUDR since in the future the scope might be broadened. go
- Keep the risk analysis at a regional (state) level, as is currently the case. Even when the European Commission might look at the country level.
- Also continue to investigate regions that are often seen as 'low risk' such as Canada and the U.S.
- Search for the correct definition of 'conversion'. What is Agrifirm's position on 'grasslands' and 'abandoned lands'? Please note that a broad definition of conversion also affects other commodities such as corn or sunflower. In addition, including grassland under conversion also rubs off on other discussions and may fall more under the approach of scope 3.
- Look at the definition of the RED when it comes to grassland conversion.
- The proposal to refer to negligible and non-negligible risk is not desirable. Just talk about low and high risk as in the current piece.
- Specify better which criteria are examined per country in order to arrive at the risk analysis. You would actually want to make an expectation of future conversion, and not just look at past conversion.
- Don't wait for the risk analysis to be made by the European Commission.
- Think about Agrifirm's certification strategy. The sourcing policy, the deforestation policy and this pilot – all have to fit together logically.

Appendix 3: Changes compared to previous version

The biggest changes in the risk-assessment compared to the previous version of the risk-assessment are in the sections on the United States and Canada, where it was decided to change the high-risk qualification of some states in a low-risk qualification. The topic of conversion of grasslands is a highly complex one and therefore Agrifirm will continue to follow the latest insights into this topic. Other changes are given below.

The protocol itself:

- We updated the protocol to be in line with the EUDR
- We elaborated on (expected) EUDR requirements
- We explained that we will constantly evaluate the instruments and tools introduced with the EUDR, such as the risk-assessment to determine our approach, which is ideally in line with EUDR but should not be less ambitious.
- We elaborated on the chain of custody model: segregation.

The risk-assessment annex:

General:

- We added the main generic remarks made by the stakeholders.
- We elaborated on the criteria to classify states:
  - Passed conversion
  - Predicted conversion

United States:

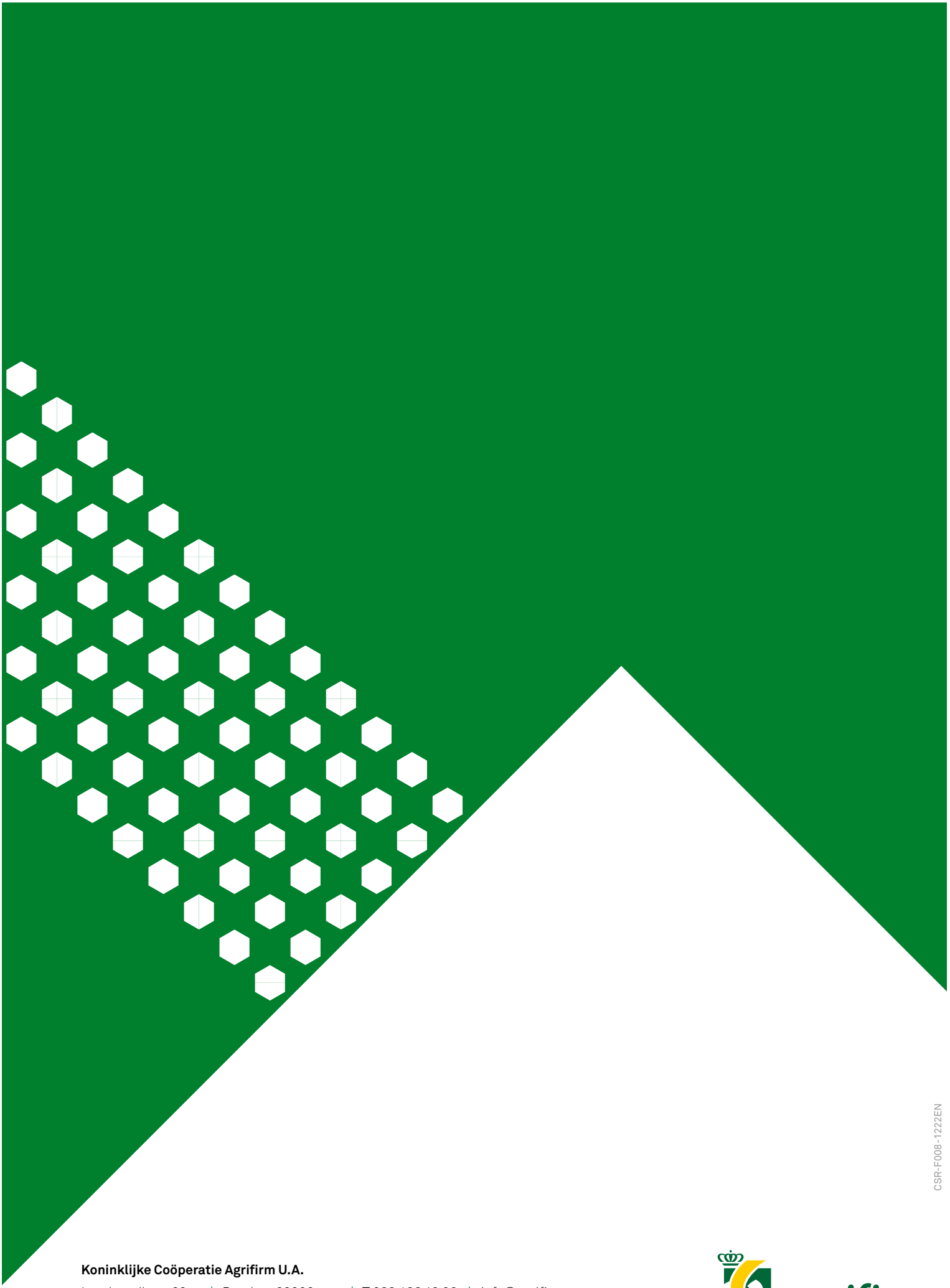
- A new PlowPrint report about 2020 is available. We added the updated information.
- We added information about CRP and Grassland CRP
- We removed the reference to the article looking into land conversion from 2009-2015. Since the cut-off date is 2020, it is not sufficiently up to date.
- We changed the risk-classification into low-risk.

Canada:

- We changed the risk-classification into low-risk

Brazil:

- We added Rondônia as a high-risk state.



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