



SSAP/RED Protocol

**SOYBEAN SUSTAINABILITY ASSURANCE PROTOCOL /RENEWABLE
ENERGY DIRECTIVE**

SSAP/RED

(SSAP/RED Protocol)

Document to be used by SSAP/RED system users

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Introduction and Scope

The more than 300,000 American soybean producers apply the principles of sustainability every day. Their production adheres to the U.S. federal, state and local laws and regulations, implemented using the best agricultural production practices.

The U.S. Soybean Sustainability Assurance Protocol/RED (SSAP/RED), hereinafter referred to as the “protocol” has originally been developed to demonstrate compliance with the requirements of the European Renewable Energy Directive 2009/28/EC (RED) and its relevant EC Communications and Regulations. When referring in this document to SSAP-RED it refers to the updated version of the program, revised in accordance with the stipulations of the recast Renewable Energy Directive 2018/2001/EU (RED II) which entered into force in December 2018 and to be transposed into national law by Member States by 30 June 2021.

Therefore, the U.S. SSAP/RED describes the regulations, processes and management practices that ensure both sustainable soybean production in compliance with the requirements of the RED II as well as according to all relevant U.S. laws and regulations. The SSAP/RED forms part of the overall U.S. soybean producer sustainability program which includes a national monitoring and measurement system of positive environmental outcomes by producers.

Scope:

The applicable feedstock is soybeans cultivated in the United States for the production of biodiesel in the European Union. **Soybean waste and residual streams are excluded.** This scheme does not include ligno-cellulosic and non-food cellulosic material or the production of biogas fuels and biogas. The Chain of Custody coverage is the cultivation stage and transport to the First Gathering Point only, without having an option for individual farm or farm group certification. Both soybean processing steps, and the use of waste/residues are not covered in this scheme.

Objective

The aim of this voluntary scheme is to ensure that the certified soybeans meet the requirements of the European RED II so that those soybeans can be used as feedstock for the production of RED II compliant biomass, bioliquids and biofuels, The aforementioned products are defined as below:

‘Biomass’ is defined as the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste;

‘Bioliquids’ are defined as liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass; and

‘Biofuels’ are defined as liquid or gaseous fuel from transport produced from biomass;

Additional terms used in this document are defined in the Glossary, Annex I. Where this document refers to specific U.S. laws and regulations, the respective regulations and paragraphs are also referenced to in Annex II at the end of this document.

- **Sustainability Requirements**

Introduction

The SSAP/RED sustainability requirements are based on the national program SSAP, i.e. the U.S. Soybean Sustainability Assurance Protocol consisting of the following 4 PILLARS:

PILLAR 1: Biodiversity and High Carbon Stock Production Control Measures and Regulations

PILLAR 2: Production Practices Control Measures and Regulations

PILLAR 3: Public and Labor Health and Welfare Control Measures and Regulations

PILLAR 4: Continuous Improvement of Production Practices and Environmental Protection Control Measures and Regulations

In this section, it is described how the requirements as formulated by the RED II are reflected in the above PILLARS whilst outlining the respective content of the RED II requirements. All aspects as being required by the RED II are referred to **in bold**.

PILLAR 1: BIODIVERSITY AND HIGH CARBON STOCK PRODUCTION CONTROL MEASURES AND REGULATIONS

Soybeans are produced only on existing agricultural land as defined in CFR Title 40 Part 80 Subpart M 80.1401 as cropland, pastureland, primary forest and land enrolled in the Conservation Reserve Program that was cleared or cultivated prior to December 19, 2007 and that, on December 19, 2007 was non-forested and actively managed as agricultural land, as evidenced by records traceable to the land in question.

For the specific purpose of demonstrating compliance with the land use requirements of **Article 29** of the RED II and subsequent Commission communications and regulations, it is required that soybeans will not be produced in the following areas:

- a) Soybeans are not produced on land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:
 - i) Highly biodiverse grassland (**Article 29 (3) d**) spanning more than one hectare defined as a terrestrial ecosystem dominated by herbaceous or shrub vegetation for at least 5 years continuously, including meadows and pasture that is cropped for hay but excludes land cultivated for other production and cropland lying temporarily fallow and grassland that is:
 - i) natural, namely grassland that would remain grassland in the absence of human intervention (defined as managed grazing, mowing, cutting, harvesting or burning) and that maintains the natural species composition and ecological characteristics and processes; or
 - ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and that is species-rich and not degraded and has been identified as being highly biodiverse by the relevant competent authority,

unless evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland. Based on the risk assessment conducted by the CB, the

lead auditor must judge whether an assessment of the status of the land as highly biodiverse grassland is necessary. A qualified independent specialist must conduct this assessment, as described in Chapter 5 of the SSAP RED Governance.

- ii) Primary forest and other wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed (**Article 29 (3) a**);
 - i) Producers are in compliance with U.S. laws prohibiting conversion of primary forests to other uses. Primary forests are defined as forest or wooded land of native species where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed.

- iii) Highly biodiverse forest and other wooded land which is species-rich and not degraded, or has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes (**Article 29 (3) b**);
 - Producers are in compliance with U.S. laws prohibiting the conversion of public lands in National Forests and National Grasslands

- iv) Soybeans are not produced in a habitat where endangered or threatened species are found, in such a way that disrupts essential behavioural patterns, including but not limited to: breeding, feeding, sheltering.
 1. Producers are in compliance with U.S. laws that prohibit altering the habitat where endangered or threatened species are found
 2. Producers are in compliance with U.S. Endangered Species Act to protect listed animal and plant species from extinction by preserving the ecosystems in which they survive.
 3. A Habitat Conservation Plan is required as part of an application by private entities prior to undertaking projects that might result in the destruction of an endangered or threatened species.
 4. Producers are in compliance with Federal Migratory Bird Treaty for protection of shared migratory bird resource

- b) Soybeans are not produced on land with high-carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status:
 - i) Soybeans are not produced on forestland; defined as a land cover/use category that is at least 10 percent canopy cover stocked by single stemmed woody species of any size that will be at least 4 meters tall at maturity. The minimum areas for classification as forestland is one acre and the area must be at least 100 feet wide. (**Article 29 (3) a; (4) b, (4) c**).

- ii) Soybeans are not produced on wetlands (**Article 29 (4) a**)
- 1. Producers are in compliance with Section 404 of Clean Water Act regarding agricultural impacts on wetlands; defined as land that is covered with or saturated by water permanently or for a significant part of the year.
- 2. Producers are in compliance with U.S. Wetlands Conservation provisions that prohibit production of an agricultural commodity of peatland converted after December 23, 1985, which means:
 - a) USDA keeps record of Wetland Determinations. Producers may obtain aerial imagery of their farms and a printout of their farm and tract records from local USDA office administering their farm
 - b) Producers will maintain compliance with wetland conservation regulations by creating a required conservation system plan
 - c) Producers will not plant on a converted wetland
 - d) Producers will not convert a wetland to make possible production of agricultural commodity
- c) Soybeans are not produced on peatland; Producers shall not produce raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil (**Article 29 (5)**).
 - i) Producers planning to remove fence rows, combine crop fields, divide a crop field into two or more fields, or improve or modify existing drainage must notify USDA-FSA for appropriate technical determinations and obtain prior approval. Improving or modifying existing drainage should not result in drainage of deeper soil layers compared to the drainage existing in January 2008.
- d) Soybeans are not produced on highly erodible land
 - i) Producers are in compliance with Highly Erodible Land Conservation program
 - i) USDA maintains records of all land used and cultivated in the United States including land classified as highly erodible land. Producers may obtain aerial imagery of their farms and a printout of their farm and tract records from local USDA office administering their farm.
 - ii) Producers will maintain compliance with highly erodible land regulations by creating a required conservation system plan.
- e) Soybeans are not produced on designated protected areas (**Article 29 (3) c**)
 - i) By law or by the relevant competent authority for nature protection purposes; or
 - ii) For the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the first subparagraph of Article 30(4),
 - i) Producers are in compliance with U.S. laws that prohibit the production of soybeans on land under federal protected status, land designated Wilderness or Research Natural Areas, protected land in National Forests and Grasslands, and land in the National Landscape Conservation System
 - ii) Producers are in compliance with U.S. laws that prohibit production of soybeans on land protected by National Park Service

For the purpose of cross referencing, below the RED II **articles 29(1) – (5) and (10) – (13)** are referred to in full. (6) – (9) only refer to biofuels, bioliquids and biomass fuels produced from forest biomass and are therefore excluded as they are not applicable for the production of soybean. In case the above definitions and wordings differ from the RED II definitions below, the RED II definitions shall prevail.

Article 29

Sustainability criteria for biofuels, bioliquids and biomass fuels

- Energy from biofuels, bioliquids and biomass fuels shall be taken into account for the purposes referred to in points (a), (b) and (c) of this subparagraph only if they fulfil the sustainability and the greenhouse gas emissions saving criteria laid down in paragraphs 2 to 7 and 10:
 - contributing towards the Union target set in Article 3(1) and the renewable energy shares of Member States;
 - measuring compliance with renewable energy obligations, including the obligation laid down in Article 25;
 - eligibility for financial support for the consumption of biofuels, bioliquids and biomass fuels.

However, biofuels, bioliquids and biomass fuels produced from waste and residues, other than agricultural, aquaculture, fisheries and forestry residues, are required to fulfil only the greenhouse gas emissions saving criteria laid down in paragraph 10 in order to be taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph. This subparagraph shall also apply to waste and residues that are first processed into a product before being further processed into biofuels, bioliquids and biomass fuels.

Electricity, heating and cooling produced from municipal solid waste shall not be subject to the greenhouse gas emissions saving criteria laid down in paragraph 10.

Biomass fuels shall fulfil the sustainability and greenhouse gas emissions saving criteria laid down in paragraphs 2 to 7 and 10 if used in installations producing electricity, heating and cooling or fuels with a total rated thermal input equal to or exceeding 20 MW in the case of solid biomass fuels, and with a total rated thermal input equal to or exceeding 2 MW in the case of gaseous biomass fuels. Member States may apply the sustainability and greenhouse gas emissions saving criteria to installations with lower total rated thermal input.

The sustainability and the greenhouse gas emissions saving criteria laid down in paragraphs 2 to 7 and 10 shall apply irrespective of the geographical origin of the biomass.

- Biofuels, bioliquids and biomass fuels produced from waste and residues derived not from forestry but from agricultural land shall be taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 only where operators or national authorities have monitoring or management plans in place in order to address the impacts on soil quality and soil carbon. Information about how those impacts are monitored and managed shall be reported pursuant to Article 30(3).
- Biofuels, bioliquids and biomass fuels produced from agricultural biomass taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 shall not be made from raw material obtained from land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:

- primary forest and other wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed;
- highly biodiverse forest and other wooded land which is species-rich and not degraded, or has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;
- areas designated:
 - by law or by the relevant competent authority for nature protection purposes;
or
 - for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the first subparagraph of Article 30(4),

unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

- highly biodiverse grassland spanning more than one hectare that is:
 - natural, namely grassland that would remain grassland in the absence of human intervention and that maintains the natural species composition and ecological characteristics and processes; or
 - non-natural, namely grassland that would cease to be grassland in the absence of human intervention and that is species-rich and not degraded and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland.

The Commission may adopt implementing acts further specifying the criteria by which to determine which grassland are to be covered by point (d) of the first subparagraph of this paragraph. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(3).

- Biofuels, bioliquids and biomass fuels produced from agricultural biomass taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 shall not be made from raw material obtained from land with high-carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status:
 - wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year;
 - continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ;
 - land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is

such that, when the methodology laid down in Part C of Annex V is applied, the conditions laid down in paragraph 10 of this Article would be fulfilled.

This paragraph shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008.

- Biofuels, bioliquids and biomass fuels produced from agricultural biomass taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 shall not be made from raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.

The greenhouse gas emission savings from the use of biofuels, bioliquids and biomass fuels taken into account for the purposes referred to in paragraph 1 shall be taken into account. See chapter 5 of this Protocol for more details.

PILLAR 2: PRODUCTION PRACTICES CONTROL MEASURES AND REGULATIONS

2.1 Producers apply conservation tillage methods as appropriate. Conservation tillage control measures will:

- increase soil health and organic matter
- increase moisture retention
- reduce soil compaction and soil erosion
- reduce water and nutrient runoff
- reduce energy use

2.2 Soybean seed commerce is in compliance with the Federal Seed Act regarding fair trade and proper labeling

2.3 Producers are in compliance with Plant Protection Act regulation importation of plants and plant products

2.4 Producers apply crop rotation to improve soil health and biodiversity

2.5 Producers apply Precision Farming Techniques as appropriate utilizing Global Positioning System (GPS) and other advanced technologies

- variable rate fertilizer and herbicide application
- field mapping for seed planting and herbicide and pesticide application
- field mapping for fertilizer application
- grid soil sampling
- yield mapping

2.6 Producers will limit irrigation and comply with all applicable water conservation efforts in their irrigation districts to ensure effective and equitable allocation of water resources.

2.7 Producers apply measures to reduce and recycle waste and meet all local regulations as related to waste recycling

PILLAR 3: PUBLIC AND LABOR HEALTH AND WELFARE CONTROL MEASURES AND REGULATIONS

- 3.1. Producers are in compliance with U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agriculture Pesticides meeting regulations for: pesticide safety training, notification of pesticide application, use of personal protective equipment, restricted-entry intervals after pesticide application, decontamination supplies, and emergency medical assistance
 - 3.1.1 An application exclusion zone of 100 feet horizontally from application equipment is required whether the pesticide is applied by air blast application, as a spray or fumigant, mist, or fog. Applicators must suspend application if they are aware of any person in the application exclusion zone per regulation in Worker Protection Standard by Environmental Protection Agency
- 3.2 Producers are in compliance with Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) maintaining compliance with agricultural chemical handling, storage, and application regulations
 - 3.2.1 All pesticides are registered with EPA with proper labels and used in accordance with specifications including how and under what conditions chemicals can be applied
 - 3.2.2 Certification and training required for pesticide applicators using restricted use pesticides
 - 3.2.3 Producers adhere to EPA regulations concerning rotation of chemical active ingredients
 - 3.2.4 Requires that pesticides be classified for general or restricted-use
 - 3.2.5 Provides that pesticides in the restricted category may be used only under the direct supervision of certified applicators, or under such other regulatory restrictions as the EPA administrator may require
 - 3.2.6 Establishes general categories of certified applicator: private applicator and commercial applicator
 - 3.2.7 U.S. regulation provide penalties for violations of FIFRA regulations and violation of these instructions is equivalent to violating the law; consequences can include criminal prosecution, civil remedies for damages, and loss of license
 - 3.2.8 Provide states the authority to regulate the sale or use of any federally registered pesticides in that state
 - 3.2.9 Producers adhere to all Federal regulations and guidelines on farm chemical application and producers observe best management practices. Additionally, producers who apply WHO Class Ia, Ib, and II pesticides shall not apply them within 500 meters of populated areas or water bodies
- 3.3 U.S. is signatory to Rotterdam Convention of the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade enforcing a banned list of chemicals for producer use
 - 3.3.1 Producers are complaint with Toxic Substances Control Act to regulate chemicals that pose an unreasonable risk to health or to the environment and to regulate these chemicals' distribution and use
- 3.4 Producers are in compliance with Fair Labor Standards Act which prescribes standards for basic minimum wage and prohibits the employment of children under age 16 during school hours and in certain jobs deemed dangerous
- 3.5 Producers are in compliance with Federal Equal Employment Opportunity Law
 - 3.5.1 Prohibits discrimination against:
 - prohibits employment discrimination based on race, color, religion, sex, or national origin
 - protects men and women who perform substantially equal work in the same establishment from sex-based wage discrimination
 - protects individuals who are 40 years of age or older

- prohibits employment discrimination against qualified individuals with disabilities
- prohibits employment discrimination based on genetic information
- provides guidelines on employee selection procedures

3.6 Producers are in compliance with Occupational Health and Safety Act (OSHA) to assure safe and healthful working conditions including workplace violence guidelines

3.6.1 OSHA provides ability to:

- Request OSHA to inspect workplace
- Employees may use rights under law without retaliation and discrimination
- Employees receive training about hazards, methods to prevent harm, and the OSHA standards that apply to their workplace
- The training must be in a language employees understand
- Employees can be terminated for noncompliance with safety regulations and employers are at risk when employees don't follow OSHA regulations

3.7 Producers are in compliance with Migrant and Seasonal Agricultural Worker Protection Act which provides safeguards to migrant and seasonal agricultural workers

3.8 Producers are in compliance with the Abolition of Forced Labor Act in that they shall not make use of any type of forced or compulsory labor including:

- As a means of political coercion or education or as a punishment for holding or expressing political view or views opposed to the established political, social or economic system
- as a method of mobilizing and using labor for purposes of economic development
- as a means of labor discipline
- as a punishment for having participated in strikes
- as a means of racial, social, national, or religious discrimination

3.9 Producers are in compliance with Victims of Trafficking and Violence Protection Act providing protection and assistance for victims of trafficking regardless of immigration status

3.10 Producers follow federal and state regulations prohibiting assault and battery

3.11 Producers will recognize the Right of Association for workers, including the right to unionize or engage in collective bargaining in accordance with applicable federal and state laws.

3.12 Producers are in compliance with the Clean Air Act and its amendments to protect and enhance air resources to promote public health and welfare

3.13 Producers are in compliance with the Resource Conservation and Recovery Act which controls hazardous waste, non-hazardous solid waste, and underground storage tanks

3.14 Producers are in compliance with Safe Drinking Water Act to protect public health by preventing contamination of surface and ground sources of drinking water

3.15 Producers shall have documented evidence of land ownership, leases, or other legal agreements to utilize land for purpose of soy production and land owners were compensated with prior and informed consent.

1. The Federal Land Policy Management Act protects public lands for exploitation without authorization or rental agreement
2. Land use contracts are governed by state statutory and U.S. common law
3. The U.S. court system is the mechanism for mediating land use disputes

3.16 Producers shall engage with local communities including traditional land users to ensure that communications of concerns, complaints, or other grievances between community members and producers are understood and addressed in a collaborative manner

- i) The Emergency Planning and Community Right-to Know Act supports community awareness and response to hazardous substances used in society
- ii) USDA cooperative extension system office is nationwide educational network that provides research based information regarding standard agricultural practices
- iii) Producers will follow all local regulations pertaining to burning crop residue leaving crop residue in place to provide desirable agronomic advantages including water storage and soil fertility
- iv) The Environmental Protection Agency Surf Your Watershed provides information about potential watershed contamination

3.17 Producers will comply with Clean Water Act Law 40 parts 116-117 which regulate discharges of designated hazardous substances. Facilities must immediately notify the National Response Center and State Agencies of any unauthorized discharge of reportable quantity of designated hazardous substance into navigable waters, the shorelines of navigable waters and contiguous zones. Discharge of harmful quantities of oil must also be reported immediately.

- Watershed with stream reaches with demonstrated water quality concerns are listed by each state government on the U.S. EPA Clean Water Act 303 list
- State governments may require monitoring under Clean Water Act section 319 to insure the implementation of Best management practices and to determine how conservation measures affect water quality
- Producers will comply with National Pollutant Discharge Elimination System (NPDES) requirements on discharges of biological pesticides, and chemical pesticides that leave a residue, into waters of the U.S.

PILLAR 4: CONTINUOUS IMPROVEMENT OF PRODUCTION PRACTICES AND ENVIRONMENTAL PROTECTION CONTROL MEASURES AND REGULATIONS

To ensure producers continually seek improvement to production practices and environmental protection, a variety of regulated Conservation programs and technology transfer systems for best management practices have been established.

- 1) Conservation Reserve Program to protect the most sensitive areas by providing financial assistance to set aside on a long-term basis for cropland vulnerable to soil erosion or critical to wildlife habitat
- 2) Conservation Stewardship Program to reward producers for overall conservation performance across entire operations
- 3) Environmental Quality Incentive Program to provide financial and technical assistance to increase environmental quality of farmland still in production
- 4) Regional Conservation Partnership Program provides financial and technical assistance for multi-state or watershed-scale projects.
- 5) Conservation Effects Assessment Project to quantify the environmental effects of conservation practices and programs on the environment and develop the science base for managing the agricultural landscape for environmental quality
- 6) Cooperative Conservation Partnership Initiative to provide financial assistance for partnerships between producers and Indian Tribes, state and local government units, producer associations, farmer cooperatives, institutions of higher education, and NGOs
- 7) The National Sustainable Soybean Initiative will develop Best Management Practices (BMP) by region and determine BMP adoption rates
- 8) Producers apply technology transfer of Best Management Practices available in numerous informational mechanisms such as: Certified Crop Advisors, Discovery Farms, on-line crop rotation data for specific geographies and soil types, plot tours, experimental field and research field days, Tactical Agriculture Programs
- 9) Producers and grain handlers utilize transportation methods such as barge and rail to reduce greenhouse gas emissions and fossil fuel use
- 10) Technology transfer and conservation programs are available to all producers regardless of size
- 11) Field Office Technical Guides customized for local soil and conditions are available to enable better production and conservation measures by producers
- 12) Development of Additional Performance Metrics Scalability of Performance Metrics – raw data used to provide aggregated national data can be scaled down to state, or even district level crop reporting. Additional information is available to customers of U.S. soy willing to collaborate on development of quantifying smaller scale sustainability metrics
- 13) The National Association of Conservation Districts represents the United States' 3,000 conservation districts and the 17,000 men and women who serve on their boards. Conservation districts are local units of government established under state law to carry out natural resource management programs at the state level.

- **Chain of Custody**

This version of the SSAP/RED will only focus on chain of custody from farm to First Gathering Point (FGP), as per below diagram:

The chain of custody consists of the following supply chain elements:

- **Farmer – compliance with self-assessment and self-declaration**

Each farmer that supplies under the SSAP/RED Protocol has to execute a self-assessment and sign a self-declaration, confirming his compliance with the sustainability requirements of this protocol. A template for this self-declaration is attached. Farmers must maintain all relevant documents, including self-declarations, delivery notes and Conservation Plans, for at least five years and need to make this available during an audit (their signature on the self-declaration confirms their commitment to this obligation).

To demonstrate compliance with the land-related sustainability criteria specified in section 1 of the SSAP/RED Protocol, farmers supplying an elevator/FGP must be located in areas that are near each other and have similar characteristics.

- **The First Gathering Point (FGP)- first certified entity in the supply chain**

SSAP/RED considers the FGP as the first SSAP/RED certified entity in the supply chain. The company operating the FGP is the group manager responsible for the internal management system that goes beyond its own operation and also includes the operations of individual group members, which could be farmers (a) or elevators (d). The FGP needs to collect the farmer's self declarations and to keep mass-balance registrations for all elevators where it owns soybeans in their elevators/storages, for all the soybean that will be traded with an SSAP/RED compliant claim. The volumes delivered by the farmers that signed the declaration (volumes to be checked on the delivery notes) can be claimed as SSAP/RED compliant. For outgoing shipments, the FGP can obtain the SSAP/RED Sustainability Declaration (which can be the annex of the Export Certificate for overseas shipments). Requirements for this document are attached to this protocol. The FGP will provide copies of farmer self-declarations to the SES.

The FGP needs a documentation management system that provides the following aspects, in such a way that they are auditable:

- 1) SSAP/RED scope certificate or scope certificate of other RED II voluntary scheme (if they have other than SSAP/RED);
- 2) Make available to the auditors all relevant information, including the mass balance data and the auditing reports from other RED II voluntary scheme certifications;
- 3) Assurance mechanism and procedure that the same soybeans do not get marketed twice as RED compliant, or if farmers supply twice under different voluntary schemes;
- 4) List of all farms supplying soybean including, at least the full names and addresses of the farms;
- 5) Self-declarations of farms delivering soybeans for the respective certification period. At the date of the audit at least one self-declaration must be in place;
- 6) Certificate numbers, the name of certification scheme (SSAP/RED, or reference to other RED II voluntary scheme);
- 7) List of all storage facilities which store soybeans on behalf of the first gathering point with names and addresses;
- 8) Contracts with all elevators/storage facilities which include their confirmation to relevant obligations to compliance with this protocol, detailed contractual terms in the contract between Elevators and certified FGPs are given in "SSAP/RED Requirements for elevators operating under

the scope of certified FGPs”. Alternatively, the FGP can prove this is covered by having ownership on the respective elevator, and assure that contractual requirements are embedded in the internal quality management system;

- 9) Quantity bookkeeping: If elevators/dependent storage facilities are used, individual quantity bookkeeping is necessary for each storage facility. This is further explained in chapter 3 of this protocol;
- 10) The FGP will maintain a documentation management system that ensures transparency and commercial viability; and prevents double counting of SSAP/RED, or another EU recognized voluntary scheme, claims.

The FGP may delegate execution of tasks to soy elevators or crop reporting districts, but it remains responsible for correct implementation of SSAP/RED requirements. Examples of delegated tasks to elevators are listed in SSAP/RED Requirements for elevators operating under the scope of certified FGPs, and could be the collection of self-declarations of farmers, and operating the management system that stores transport documents. Examples of delegated tasks to crop reporting districts could be providing (historical) data on compliance of sustainability requirements in the district.

The following obligations can only be conducted by the FGP, as the SSAP/RED certified entity with the group manager responsibility for farms, and if applicable also for elevators. In both cases the group manager needs to:

- 1) Have a system in place to inform group members about their responsibilities to comply to relevant SSAP/RED requirements, and any applicable changes that are implemented thereto over time;
- 2) Organise internal audits at least on an annual basis, most likely shortly before the external certification audit. The internal audit must be documented containing the auditor, the participants, the timeframe and the subjects reviewed, which are specified below for farms and elevators separately.

Group manager of farms

Before accepting a farmer as an SSAP/RED compliant supplier, the FGP shall check if the farmer provided a self-declaration, signed latest on the date of physical dispatch of the soy and confirm correctness of the declaration, for which satellite imagery starting 1 January 2008 from the USDA and NRCS may be used. When accepting new farmers, the FGP shall also consider the following group requirements for farmers:

- The farmers are based in the same region (geographic proximity);
- The climatic conditions for agricultural production are similar;
- Similar agricultural production methods are applied;
- The risk assessment has shown a similar risk exposure for the group members.

The FGP shall have a monitoring system in place that includes at least one self-assessment (internal audit) per year. This self-assessment shall check if the FGP, the elevators used and the supplying farmers all comply to the SSAP/RED Protocol. The assessment shall include:

1. Check on availability and validity of contracts and self-declarations;
2. Check on availability, correctness and completeness of delivery notes and if reported amounts match with records from the elevator;
3. Check if mass-balance calculation rules are followed in line with chapter 3 of the protocol;

4. Check if all other requirements of their internal management system related to SSAP/RED compliance are implemented accordingly.

Group manager of elevators

The FGP may work with various elevators that supply soybean to the FGP prior to export. There are no specific group requirements for elevators, but the following assessment items

5. Check on availability and validity of contracts;
6. Check on correct implementation of “SSAP RED Requirements for elevators operating under the scope of certified FGPs”;
7. Check on availability, correctness and completeness of delivery notes and sustainability declarations, and if reported amounts on these two documents match with each other and with those of the supplying farmer.

- **Trader – certified entity after the FGP**

All companies that wish to trade soybeans with an SSAP/RED compliant claim but are not buying the material directly from farmers, but from SSAP/RED certified FGPs or other SSAP/RED certified traders, must be certified under the SSAP/RED Protocol with the trader scope.

The Trader needs a documentation management system that provides the following aspects, in such a way that they are auditable:

- 11) SSAP/RED scope certificate or scope certificate of other RED II voluntary scheme (if they have other than SSAP/RED);
- 12) Make available to the auditors all relevant information, including the mass balance data and the auditing reports from other RED II voluntary scheme certifications;
 - Assurance mechanism and procedure that the same soybeans get marketed twice as RED compliant, or if farmers supply twice under different voluntary schemes;
 - Certificate numbers, the name of voluntary scheme (SSAP/RED, or reference to another RED II voluntary scheme);
 - Once obtained, the sustainability declarations numbers for all SSAP/RED compliant and other RED compliant consignments (chapter 3 provides more information on the different compliance claims);
- 13) List of all storage facilities which store soybeans on behalf of the trader with names and addresses
- 14) Contracts with all Elevators/storage facilities which include their confirmation to relevant obligations to compliance with this protocol;
- 15) Quantity bookkeeping: If elevators/dependent storage facilities are used, individual quantity bookkeeping is necessary for each storage facility, this is further explained in chapter 3 of this protocol;
- 16) The trader will maintain a documentation management system that ensures transparency and commercial viability; and prevents double counting of SSAP/RED, or another EU recognized voluntary scheme, claims.
- 17) The trader will maintain all documents for no less than five years.

The trader may delegate execution of tasks to soy elevators, but it remains responsible for correct implementation of SSAP/RED requirements. Examples of delegated tasks to elevators could be operating the management system that stores transport documents.

- **Elevators– operating under the scope of a certified FGP**

The elevator needs to have a management system in place to record incoming and outgoing delivery notes, based on which the FGP can operate the mass balance system for the product with an SSAP/RED compliant claim. Further requirements for elevators operating in the scope of a certified FGP are set in “SSAP/RED Requirements for elevators operating under the scope of certified FGPs”. These requirements recognise a different process of implementation for elevators in case they are owned or not owned by the company certified as FGP. Individual certification of the elevator, then becoming the certified FGP, is voluntary under SSAP/RED. Delivery notes should at least contain information on the type of product, quantity, and delivery or dispatch date. In order to determine the quantity upon delivery and dispatch, the elevator needs to have access to an independently calibrated weighbridge. When desirable, FGPs can delegate the collection of self-declarations to the elevators that source the soybean locally and forward this to the FGP. By doing so, the elevators act as mass-balance location of the soybeans, under the responsibility of the certified FGP. The FGP shall therefore take elevators they use into account in the chain of custody section of their risk assessment and internal audit procedures. The elevator is obliged to provide above documentations and give insight in its management system (which must be covered in its contract or other written confirmation with the Certified FGP) when requested by the SSAP/RED auditor.

The elevator will maintain documents for at least five years and in a format available for auditing purposes.

- **Storage locations – operating under the scope of a certified Trader**

The storage location needs to have a management system in place to record incoming and outgoing delivery notes, based on which the Trader can operate the mass balance system for the product with an SSAP/RED compliant claim. Delivery notes should at least contain information on the type of product, quantity, and delivery or dispatch date. In order to determine the quantity upon delivery and dispatch, the storage location needs to have access to an independently calibrated weighbridge. The storage location is obliged to provide above documentations and give insight in its management system (which must be covered in its contract or other written confirmation with the Certified FGP) when requested by the SSAP/RED auditor.

Documentation on above chain of custody requirements needs to be maintained for at least five years and in a format available for auditing purposes.

- **Mass Balance**

This section describes which procedures should be followed to preserve the SSAP/RED compliant claim throughout the supply chain. procedures should be followed to preserve the SSAP/RED compliant claim throughout the supply chain. The main purpose of managing a mass balance system, is to assure that SSAP/RED system users and any voluntary scheme system users downstream the supply chain can assure compliance with Article 26 and 27 of the RED II. The elevators and the FGP act as physical collecting point, and are therefore subject to implementing a correct mass balance, they are together referred to as Mass Balance Location in Annex I of this protocol. The mass balance system operates at the level of a site which is defined as a geographic location with precise boundaries within which

products can be mixed. If more than one legal entity operates at a given site, then each entity is required to operate their own mass balance system. The certified entity is responsible for correct implementation. In the section below, the mass balance principles, calculation rules, different types of claims and mass balance period are described.

3.1 Mass Balance Principle

The mass balance principle is widely used in supply chains through which material with a certified claim physically flows through several locations. It is very common that the different companies are trading material with a certified claim simultaneously with a non-certified claim. In order to avoid limitations in storage facilities, the certified claim can be disconnected from the physical soybeans, when mass balance calculation rules are followed, as per **Article 30 (1)** in the RED II.

(a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed for instance in a container, processing or logistical facility;

(b) allows consignments of raw material with differing energy content to be mixed for the purposes of further processing, provided that the size of consignments is adjusted according to their energy content;

(c) requires information about the sustainability and greenhouse gas emissions saving characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and

(d) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture requires that this balance be achieved over an appropriate period of time.

To summarize: the main principle of mass balance is:

Amount of outgoing soybeans ≤ Amount of incoming soybeans per location.

It has to be assured that the company owning the soybeans stored in a mass balance location never sells more soybeans with a SSAP/RED compliant claim than they have on stock within the relevant period, on which further information can be found in section 3.3.

3.2 Transferring sustainability characteristics

Transferring sustainability characteristics towards the next certified SSAP/RED system user must always be accompanied by a physical transfer of material. The information is transferred on a “sustainability declaration”, which can be issued by every certified SSAP/RED system user. As soon as a Union database is coming into force, all SSAP/RED system users are obliged to transfer the required information through this database.

The following sustainability characteristics are defined and must be passed down the supply chain on sustainability declarations:

Product related information:

- **Outgoing** sustainable product **specification** (soybean)
- **Quantity** of sustainable soybean (in metric ton)
- Country of origin of the soybean, where the soybean was cultivated
- Statement “SSAP/RED Compliant” (if applicable), or statement “EU RED Compliant” (if applicable)

GHG related information:

The relevant RED calculation formula elements have to be reported separately. For SSAP/RED certified soybean, these elements are:

- e_{ec} : Emissions from the extraction or cultivation of soybean
- e_i : Annualised emissions from carbon stock changes caused by landuse change (if applicable)
- e_{td} : Emissions from transport and distribution of soybean

In case the exporter has not made individual GHG calculations, the following statement shall be made:

Statement: **“Use of disaggregated default value for cultivation, transport and distribution”**

In case the soybean exporter has made individual calculations on the soybean GHG emissions, the following statement shall be made:

Statement of **an actual value in kg CO₂eq per dry-ton of product, per formula element**. As an alternative for e_{td} (transport and distribution) the means of transport and the transporting distance from the supplier to the recipient can be provided on the Sustainability Declaration, if no actual value for e_{td} is calculated. This means the receiver of the product will be able to calculate e_{td} .

More information on GHG emissions can be found in chapter 5 of the SSAP/RED protocol.

Alongside the above information, there is general information that has to be provided, which is given in *SSAP RED Sustainability Declaration Requirements*.

3.3 Mass Balance Claims

As per above mass balance definition point (a) above, there are different sustainability characteristics that should be registered. One of these characteristics is the sustainability claim of the product. The SSAP/RED Protocol considers two different sustainability claim options:

1) SSAP/RED compliant claim

For all material included in a soybean export that was received under the control of the SSAP/RED Protocol. If this is not specifically defined on the sustainability declaration, the receiver must assume option 2

2) RED compliant claim

For all material included in a soybean export that was received by the exporter with a claim from another RED II voluntary scheme that meets SSAP/RED recognition requirements.

More information on recognition of other RED II schemes within SSAP/RED can be found in chapter 6 of the protocol.

Whenever the mass balance location also stores soybeans certified under another RED II sustainability scheme, proof should also be shown that the balance prevents double counting on the sustainability requirements (e.g. applying sustainability characteristics from SSAP/RED soy to soy from other RED compliant soy and to soy from non-sustainable sources). This must be proven by administrating unique reference numbers in outgoing batches that are linked to the different soy purchase batches with these different claims. Allocating unique reference numbers to all outgoing batches is considered best

practice with respect to the prevention of multiple counting. The same would apply when soybeans without a sustainability claim are part of the mixture. This means that soybean can be stored with a SSAP/RED compliant claim, a RED compliant claim or without any sustainability claim. Physical mixing of soybean with different claims is allowed, as long as the mass balance administration proves that no more soybean with SSAP/RED claim is shipped out, than the amount that entered the location.

3.4 Mass Balance Period

There are various options in maintaining a mass balance under RED II. Section 3.3.1 describes the two options that are required for traders. Section 3.3.2. sets less strict requirements that apply only for producers and FGPs.

3.4.1. requirements for traders

In order to assure practical implementation of mass balance rules, the RED II allows the balance between incoming and outgoing products to be **continuous in time**, but with the assurance that the system foresees that at any point in time no more sustainable material has been dispatched compared to what has been received (i.e., that no “deficit” occurs). Alternatively, the regulation allows the mass balance principle to be applied on a periodic basis of maximum 3 months, rather than real time application (**Article 30 (1)**). The length of the period can be chosen freely but consequent, up to a length of 3 months. Within such a periodical approach, the aforementioned deficit may occur, meaning that it is allowed to sell and ship material from the location with an SSAP/RED compliant claim in advance of the physical arrival of the incoming material carrying that claim. However, it has to be assured that before the end of the mass balance period, enough compliant soybean physically entered the mass balance location to represent the volume of the material sold and shipped from the location. Furthermore, it is possible to transfer mass balance claims to the next mass balance period up to the amount of soy that is physically in stock at the moment the new mass balance period starts.

By implementing above mass balance rules, it is prevented on a periodical basis that more material with a SSAP/RED compliant claim is sold than physically available. Another important aspect is, the certified entity should prevent multiple claiming, in the event that the entity is certified under multiple RED II schemes. For the SSAP/RED recognition on other RED II schemes, see chapter 6.

More specific requirements on this topic can be found in the audit procedures of SSAP/RED.

3.4.2 requirements for first gathering points

FGPs may implement the mass balance period as described above in section 3.4.1, either continuous in time or with a deficit to be compensated within a 3 months' timeframe. However, for FGPs and producers of agricultural biomass, a third option can be permitted. These system users may apply the **mass balance period up to 12 months**, under the condition that any deficits can only occur for a period up to 3 months. Other than that, the same mass balance requirements apply as for the 3 months' periodical approach from section 3.4.1.

3.5 Mass Balance audit requirements

The following requirements are subject to audits:

- The company shall submit the mass balance datasheet at least 2 weeks prior to the audit. This is both for initial audits as for the annual audits thereafter
- For an initial certification audit before participation in a scheme, the auditor shall check the existence and set-up of the mass balance system.
- For annual audits thereafter, the auditor shall check at least the following:
 - List of all sites that are under the scope of certification. Each site shall have its own mass balance records.
 - List of all soybean input per site, including details of all suppliers.

- List of all soybean output per site, including details of all customers.
- The mass balance records must contain information on both the inputs and the outputs of sustainable and unsustainable soybean handled by the sites.
- Mass balance timeframe, which should be transparent, documented and consistent, and an appropriate period of time (see section 3.4)
- A sample of the calculations (inputs, outputs, conversion factors, and any balances carried forward). All data should be checked against the book keeping system.
- Inputs and outputs should be accompanied, where relevant, by a set of sustainability characteristics. Auditors should check that sustainability characteristics have been allocated appropriately. At the end of the mass balance period, the sustainability data carried forward should be equivalent to the physical stock.

- **Risk Assessment and Mitigation**

The SSAP/RED is only applicable to soybeans with a U.S. origin. Therefore, this section sets out a list of U.S. specific aspects to be taken into account by the SSAP/RED 3rd party auditor. All items refer specifically to U.S. based regulators and control bodies, that verify compliance with requirements relevant to the RED II. Those aspects can therefore contribute to the risk assessment, when the data referred to is made available to the auditor. More information on applicable U.S. laws can be found in Annex II of this document.

- Soybean producers file annually form AD-1026 (Conservation Plan), self-certifying compliance with all U.S. land use and conservation regulations. Forms AD-1026 are subject to random auditing by the Natural Resources Conservation Service (NRCS).
- Annual data collection and analysis of satellite imagery will confirm compliance with the land use requirements of the RED II.
- USDA will monitor soil erosion and maintain several programs to incentivize soil erosion reduction.
- USDA will monitor fossil fuel use by producers and maintain several programs to incentivize fossil fuel reduction.
 - Producers will monitor and reduce fossil fuel use for management records and to increase enterprise viability
- Producers crops will be grown under the Federal Government Coordinated Framework for Regulation of Biotechnology which is a coordinated, risk-based system to ensure that new biotechnology products are safe for the environment and human and animal health.
 - The USDA's Animal and Plant Health Inspection Service (APHIS) is responsible for protecting agriculture from pests and diseases including regulatory oversight over products of modern biotechnology that could pose such a risk.
 - The Environmental Protection Agency (EPA) through a registration process regulates the sale, distribution and use of pesticides in order to protect health, and the environment, regardless of how the pesticide was made or its mode of action. This includes regulation of those pesticides that are produced by an organism through techniques of modern biotechnology.
 - The Food and Drug Administration is responsible for ensuring the safety and proper labeling of all plant-derived food and feed, including those developed through genetic engineering.
 - Additional federal guidelines are in consideration under the by USDA as presented by the Advisory Committee on Biotechnology and 21st Century Agriculture report: Enhancing Coexistence.

- Complexity of the audited system user should be checked, based on the following indicators
 - o Amount of farmers and their spread in size, homogeneity, spread over different regulatory areas, risk of non-compliance to the key RED II sustainability requirements as in RED II Article 29
 - o Amount of elevators and level of proof of control of the operations on these locations with regard to SSAP/RED sustainability requirements by the FGP or Trader audited.
 - o Present or past participation of the system user or any of its farmers or elevators.
- Transparency on other voluntary scheme participation
 - o All SSAP/RED system users need to declare the names of all voluntary schemes approved by the European Commission under the [Directive \(EU\) 2018/2001](#) they have or have been participating in.
 - o If the system user is using multiple schemes, the audit findings of these schemes need to be available prior to the onsite audit of the SSAP system user the risk assessment of the SSAP/RED audit. The system user must provide the full audit reports and may be obliged to request these reports with its previous CB. The risk level of the SSAP/RED will at a minimum be the same as the highest risk level of the other schemes and extra.
 - o During the onsite audit, the auditor needs to have access to the full mass-balance to also check double claiming of the same soy under the different voluntary schemes.
 - o If the system user has failed previous audits under other voluntary schemes but successfully passed the SSAP/RED audit, the SSAP/RED certification body shall inform all other voluntary schemes the system user has or has been operating prior to issuance of the certificate.
- Rigorousness of the internal audit procedures and execution of the SSAP/RED system user with respect to all above mentioned risk indicators, but specifically related to key sustainability requirements of RED II **Article 29**.

o **GHG Emissions**

5.1 Introduction

Under the SSAP/RED Protocol the use of disaggregated default values for Cultivation and Transport & Distribution as determined according to RED II methodology can be applied. The values determined by the European Commission must be applied by the European buyers of the soy with an SSAP/RED compliant claim.

As per EU requirements, the SSAP/RED Protocol requires a minimum level of GHG savings for final biofuels. These minimum savings consider emissions that are caused over the whole supply chain and include at the minimum, Cultivation emissions (e_{ec}), Land use change emissions (e_l) if relevant), Transport & Distribution emissions (e_{td}) and Processing emissions (e_p). The following emissions are covered in the RED II:

$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr}$$

where

E total emissions from the use of the fuel,

e_{ec} emissions from the extraction or cultivation of raw materials,

e_l annualised emissions from carbon stock changes caused by land-use change,

e_p emissions from processing,

e_{td} emissions from transport and distribution,

e_u emissions from the fuel in use,

e_{sca} emission saving from soil carbon accumulation via improved agricultural management,

e_{ccs} emission saving from carbon capture and geological storage,

e_{ccr} emission saving from carbon capture and replacement.

SSAP/RED is only focussing on soybeans that are exported to Europe before processing, therefore the element “emissions from processing” is not included in the scope of this protocol. Also the two last elements “emission saving from carbon capture and geological storage” and “emission saving from carbon capture and replacement” are not included as they are not relevant for the system users of SSAP/RED. The soybean exporter must declare GHG emission values for Cultivation and Transport & Distribution. Declaring land use change emissions is only required when land use changes have occurred. In line with Article 29(10) from RED II, SSAP/RED ensures that operators deliver accurate data on GHG emissions of soybean produced for biofuels and bioliquids. The “emission saving from soil carbon accumulation via improved agricultural management” are not covered under this version of the protocol. In case farmers do apply any of these practices referred to in the RED II, the emission saving as a result of this practice can therefore not be taken into account. A separate guidance document on such calculation may be published in the future.

Note: EU based importers may require maximum GHG values for Cultivation and Transport & Distribution to assure that they meet the minimum GHG savings on the final biofuel (as presented in table 1 below) produced from U.S. soybeans against the fossil fuel references. These values are given in table 2.

Table 1: Relevant minimum GHG saving threshold for Sustainable biofuels under the RED II

Requirement	Minimum saving potential
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Biofuel and bioliquids production - installation in operation on or before 15th of October 2015	50%
Biofuel and bioliquids production - installation in operation after 15th of October 2015	60%
Biofuel and bioliquids production - installation in operation after 1 st of January 2021	65%

Table 2: Emission values for fossil references

Biofuel/bioliquid end use purpose	Reference value
Biofuels for transport:	94 g CO ₂ eq/MJ fossil fuel
Bioliquids used for electricity production:	183 g CO ₂ eq/MJ fossil fuel
Bioliquids used for the production of heating and cooling:	80 g CO ₂ eq/MJ fossil fuel

As SSAP/RED has no processing in its audit and certification scope, auditing of the date of operation of final processing facilities and their compliance towards the saving targets is not directly in the scope of SSAP/RED. However, it is up to SSAP/RED system users to assure that the GHG emissions for the relevant supply chain elements (e.g. at a minimum “cultivation” and “transport&distribution”) can be accepted by operators downstream the supply chain.

GHG emission values can be determined by:

- 1) Referring to default values as written in the RED II Annex V (A) or (B) for biofuels and bioliquids
 - a) Total default value (not used on SSAP/RED sustainability declarations)
 - b) Disaggregated default value per supply chain element
- 2) Individual calculated GHG emission value per SSAP/RED certified operator, as per the methodology of RED II Annex V (C).

In order to give the final biofuel producers the option to calculate their processing emissions, reference to total default value will not be allowed under SSAP/RED. The U.S. exporter only has to confirm either the actual calculated value for the applicable emission, or use of disaggregated default values by adding one of the following claims on the Sustainability Declaration:

Claim in case of use of actual calculated values:

E_{ec}: “-actual value- in kg CO₂eq per dry-ton of product for cultivation”

E_t: “-actual value- in kg CO₂eq per dry-ton of product for annualised emissions from carbon stock changes caused by land-use change” E_{td}: “-actual value- in kg CO₂eq per dry-ton of product for transport and distribution”

Claim in case of use of disaggregated default values:

E_{ec}: “Use of disaggregated default value for cultivation”

E_{td}: “Use of disaggregated default value for transport and distribution”

Note: it is possible to combine above claims, for example by using the disaggregated default value for Cultivation and an actual value for Transport & Distribution. The requirements for Sustainability Declarations as well as the audit procedures determine the requirements for companies in order to assure the correct declaration of GHG values. SSAP/RED certified FGPs or traders are only allowed to forward actual GHG values when this is specifically mentioned on their certificate. Only in that way the buyer can verify that the GHG calculation has been verified as part of the audit process.

5.2 Calculation methodology

This section describes the detailed calculation methodology to be applied under SSAP/RED. The calculation methodologies described in this Protocol refer to the following methodologies in RED II:

1) Only **actual values**

Actual values can be calculated in accordance with the methodology laid down in Annex V (C) for biofuels and bioliquids;

2) A combination of applicable **disaggregated default values and actual values** according to one of below methodologies:

- a) values calculated as the sum of the factors of the formulas referred to in point 1 of of Annex V (C), where disaggregated default values in Annex V (D) + (E) may be used for some factors, and actual values, calculated in accordance with the methodology laid down in Annex V (C), are used for all other factors
- b) values calculated as the sum of the factors of the formulas referred to in point 1 of Annex VI (B), where disaggregated default values in of Annex VI (C) may be used for some factors, and actual values, calculated in accordance with the methodology laid down in Annex VI (B), are used for all other factors.

Section 5.2.1 describes the cultivation calculation methodology, section 5.2.2. describes the methodology for transport & distribution. In order to comply with the calculation requirements of the RED II, the formulas in this protocol are using the SI base units. The sub-sections “data gathering and data use” describe the conversion from U.S. customary units towards SI base units.

General rules for calculating own GHG emissions are:

- i) the calculation must be based on a data collection period of 12 months for existing companies. For new companies, the calculation can be based on expected data, but within 6 months after operations the calculation must be filled with actual data, which needs to be submitted to the certification body. After verification and approval, the updated GHG value(s) must be used from that moment until the next recertification audit.
- ii) the EC standard calculation values and emission factors published on the Commission website and/or included in the Implementing Act shall be applied. The emission factors most relevant for soybean cultivation and transport are presented in Annex III of this document. In cases where a company uses products that are not listed in Annex III, or in case its product carries a significant different amount of emissions, alternatives to these emission factors may be presented to the SSAP/RED scheme for review. This submission must include scientific literature as evidence. In case there is no literature available, a laboratory analysis or individual calculation might be possible if methodology complies with RED II methodology and is verifiable. In case inputs are used that are not listed in Annex III but can be found on the Commission website and/or included in the Implementing Act may be used without prior approval from the SSAP/RED scheme.

- iii) every SSAP/RED system user must submit its actual GHG calculation latest two weeks prior to the annual audit to the CB for desk review. This includes input data and any relevant evidence, information on the emission factors and standard values applied and their reference sources. In case the desk review or the audit itself results in changes or updates of the calculation, the final version needs to be re-submitted.

5.2.1 Emissions for Cultivation

The emissions for cultivations must be allocated to the dry ton weight of the soybean, therefore the following formula must be applied to calculate the dry weight of the soybean yield:

$$e_{ec\,soybean} \left[\left[\frac{kg\ CO_2eq}{MT_{dry\ soybean}} \right] \right] = \frac{e_{ec\,soybean} \left[\left[\frac{kg\ CO_2eq}{MT_{fresh\ soybean}} \right] \right]}{(1 - moisture\ content)}$$

The moisture content can be determined based on the maximum moisture value allowed as per supply contract, or it can be measured after delivery.

For the calculation of cultivation emissions, various different inputs have to be considered. The below cultivation calculation formula is including those:

$$e_{ec} \left\langle \left(\frac{kg\ CO_2eq}{MT_{soybean}} \right) \right\rangle = \frac{(E_{diesel} + E_{electricity} + E_{seed} + E_{ppp} + E_{fertilizer} + E_{N2O}) \left[\left[\frac{kg\ CO_2eq}{acre*yr} \right] \right]}{yield \left[\left[\frac{MT_{soybean}}{acre*yr} \right] \right]}$$

Below, the different formula sections are explained and calculated in sub-formulas.

The emissions for diesel use shall be calculated as per below:

$$E_{diesel} = diesel\ amount \left[\left[\frac{liter}{hectare*yr} \right] \right] * EF_{diesel} \left[\left[\frac{kg\ CO_2eq}{liter} \right] \right]$$

The emissions for electricity use shall be calculated as per below:

$$E_{electricity} = electricity\ amount \left[\left[\frac{kWh}{hectare*yr} \right] \right] * EF_{electricity} \left[\left[\frac{kg\ CO_2eq}{kWh} \right] \right]$$

The emissions for seed use shall be calculated as per below:

$$E_{seed} = seed\ amount \left[\left[\frac{kg}{hectare*yr} \right] \right] * EF_{seed} \left[\left[\frac{kg\ CO_2eq}{kg} \right] \right]$$

The emissions for plant protection products (PPP) shall be calculated as per below:

$$E_{ppp} = ppp\ amount \left[\left[\frac{kg}{hectare*yr} \right] \right] * EF_{ppp} \left[\left[\frac{kg\ CO_2eq}{kg} \right] \right]$$

The emissions for fertilizer use shall be calculated as per below:

$$E_{fertilizer} = fertilizer\ amount \left[\left[\frac{kg\ nutrient^*}{hectare*yr} \right] \right] * EF_{production} \left[\left[\frac{kg\ CO_2eq}{kg\ nutrient} \right] \right]$$

¹Note: for fertilizer only the kg nutrient needs to be taken into account.

N₂O Emission calculation

Both synthetic and organic nitrogen fertilisers and crop residues being left on the field are causing additional N₂O-field emissions that must be taken into account. To calculate N₂O emissions from soils the IPCC methodology must be applied, addressing both “direct” and “indirect” N₂O emissions of synthetic as well as organic nitrogen fertilisers and crop residues. All three IPCC Tiers could be used by SSAP/RED system users. The methodology can be found at

“IPCC guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11”: http://www.ipccnggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_11_Ch11_N2O&CO2.pdf

When using IPCC Tier 1 methodology the “Annotated example of a GHG calculation using the EU Renewable Energy Directive methodology” provides further practical guidance, to be found here: https://ec.europa.eu/energy/sites/ener/files/2010_bsc_example_ghg_calculation.pdf

Data gathering and data use

It is likely that farmers prefer to supply the data to elevators/FGPs in the U.S. customary units. For efficiency it is recommended that farmers do not need to convert their data towards the SI base units, this can be done by the FGP centrally. The below table shows how to convert the inputs relevant to calculate the cultivation emissions:

Input	Likely to be provided in following units by farmers (U.S. customary units)	Must be converted in following units by FGP (SI base units)	Relevant conversion factor ²
Amount of soybean	Bushels	MT	1 MT soybeans = 36.74 bushels (https://ussec.org/resources/conversion-table/)
Diesel	$diesel\ amount \left[\left[\frac{gallon}{acre*yr} \right] \right]$	$diesel\ amount \left[\left[\frac{liter}{hectare*yr} \right] \right]$	1 gallon = 3.785411784 liter 1 acre = 0.4046856422 hectare
Electricity	$electricity\ amount \left[\left[\frac{kWh}{acre*yr} \right] \right]$	$electricity\ amount \left[\left[\frac{kWh}{hectare*yr} \right] \right]$	1 acre = 0.4046856422 hectare
Seeds	$seed\ amount \left[\left[\frac{pounds}{acre*yr} \right] \right]$	$seed\ amount \left[\left[\frac{kg}{hectare*yr} \right] \right]$	1 pound (lbs) = 0.45359237 kg 1 acre = 0.4046856422 hectare
PPPs solid	$ppp\ amount \left[\left[\frac{pound}{acre*yr} \right] \right]$	$ppp\ amount \left[\left[\frac{kg}{hectare*yr} \right] \right]$	1 pound (lbs) = 0.45359237 kg 1 acre = 0.4046856422 hectare
PPPs liquid³	$ppp\ amount \left[\left[\frac{gallon}{acre*yr} \right] \right]$	$ppp\ amount \left[\left[\frac{kg}{hectare*yr} \right] \right]$	1 pound (lbs) = 0.45359237 kg 1 acre = 0.4046856422 hectare
Fertilizers solid	$fertilizer\ amount \left[\left[\frac{pound\ nutrient^1}{acre*yr} \right] \right]$	$fertilizer\ amount \left[\left[\frac{kg\ nutrient^1}{hectare*yr} \right] \right]$	1 pound (lbs) = 0.45359237 kg 1 acre = 0.4046856422 hectare
Fertilizers liquid³	$fertilizer\ amount \left[\left[\frac{gallon\ nutrient^1}{acre*yr} \right] \right]$	$fertilizer\ amount \left[\left[\frac{kg\ nutrient^1}{hectare*yr} \right] \right]$	1 pound (lbs) = 0.45359237 kg 1 acre = 0.4046856422 hectare

¹Note: for fertilizer only the kg nutrient needs to be taken into account.

²source for conversion factors used is <https://www.unitconverters.net/> unless notified otherwise.

³Note: to convert from gallon to kg, the density of the product must be taken into account

For implementing the calculation formulas for cultivation, data must be gathered from a representable sample of participating farmers. Data is required from at least the square root (rounded up) of the group of farmers. The FGP should select this sample taking a risk based approach with an equal geographical spread over its sourcing region and the various farm sizes. The SSAP/RED auditor will review and confirm if the sample approach was an appropriate representation of the whole group of supplying farmers. After using the input data from the different farmers in the calculation, the highest GHG value (e.g. the least performing farm) must be used as the own calculated cultivation value of the FGP. The following data must be gathered and serves as input for the calculation:

- Amount of soybean seeds in kg seeds per ha and yr
- Amount of plant protection products (PPP) in kg active ingredient per ha and year (for example: $\left[\left[\frac{kg \text{ glyphosate}}{hectare*yr} \right] \right]$)
- Amount of synthetic fertilizers: phosphorus (P2O5)-, potassium (K2O)-, lime (CaO)- and nitrogen (N)- fertilizer in kg nutrient per ha and year in $\left[\left[\frac{kg \text{ nutrient}}{hectare*yr} \right] \right]$
- Amount of organic nitrogen (N)- fertilizers in $\left[\left[\frac{kg \text{ nitrogen}}{hectare*yr} \right] \right]$ if applicable
- Amount of soybean crop residues in $\left[\left[\frac{kg \text{ nitrogen}}{hectare*yr} \right] \right]$ if applicable
- Diesel consumption, electricity consumption and other energy consumption (for any work related to the cultivation and drying of soybean, if applicable)
- Yield of the soybean in $\left[\left[\frac{MT}{hectare*yr} \right] \right]$ fresh weight and moisture content to determine the dry matter yield. If moisture content or yield of dry matter are not known, emissions can be calculated based on fresh yield and adapted by applying a moisture factor, see the first formula in this section. As an alternative, the moisture content can be measured after delivery to the FGP or be based on the maximum value allowed by the delivery contract with the FGP
- Any further input used during cultivation that is causing emissions must be collected in relevant amounts per ha and included in the calculation

Companies that operate as traders under SSAP/RED may not aggregate/average different GHG values from different suppliers (FGPs). In this case the different values must be forwarded on different sustainability declarations, referring to the corresponding amounts from those suppliers. As an alternative, one sustainability declaration for the full outgoing batch can be created with the highest GHG value.

The following elements of the formula must be drawn from the list of emission factors in the Annex III of this protocol, or have to be derived from another recognised/certified source:

- Emission factors (EF) for soybean seed in $\frac{kg \text{ CO}_2eq}{kg \text{ seed}}$

- Emission factors for plant protection products (PPP) in $\frac{kg\ CO_2eq}{kg\ active\ ingredient\ of\ PPP}$
- Emission factors for synthetic fertilizers which must reflect the emissions of production, extracting and processing of the fertilizers in $\frac{kg\ CO_2eq}{kg\ nutrient}$ (to be applied for P2O5-, K2O-, CaO- and synthetic N-fertiliser)
- Emission factor for field emissions of all Nitrogen-fertilizers including synthetic and organic N-fertilizer and crop residues in $\frac{kg\ CO_2eq}{kg\ nitrogen}$ (EF_{field})

Emission factors for diesel, electricity or other energy source in kg CO2eq per unit energy used

5.2.2. Annualised emissions from carbon stock changes caused by land-use change

According to EC Communication 2010/C 160/02, land-use change refers to changes in terms of land cover between the six land categories used by the IPCC (forest land, grassland, cropland, wetlands, settlements and other land). This means, for example, that a change from grassland to cropland is a land-use change, while a change from one crop (such as corn) to another (such as soy) is not. Cropland includes fallow land (i.e. land set at rest for one or several years before being cultivated again). A change of management activities, tillage practice or manure input practice is not considered land-use change.

Annualised emissions from carbon stock changes caused by land-use change, e_l , shall be calculated by dividing total emissions equally over 20 years. For the calculation of those emissions, the following rule shall be applied:

$$e_l = (CS_R - CS_A) \times 3,664 \times 1/20 \times 1/P - e_B$$

where

e_l annualised greenhouse gas emissions from carbon stock change due to land-use change (measured as mass (grams) of CO₂-equivalent per unit of biofuel or bioliquid energy (megajoules)). 'Cropland'¹ and 'perennial cropland'² shall be regarded as one land use;

CS_R the carbon stock per unit area associated with the reference land-use (measured as mass (tonnes) of carbon per unit area, including both soil and vegetation). The reference land-use shall be the land-use in January 2008 or 20 years before the raw material was obtained, whichever was the later;

CS_A the carbon stock per unit area associated with the actual land-use (measured as mass (tonnes) of carbon per unit area, including both soil and vegetation). In cases where the carbon stock accumulates over more than one year, the value attributed to CS_A shall be the estimated stock per unit area after 20 years or when the crop reaches maturity, whichever the earlier;

3,664 This number is a quotient obtained by dividing the molecular weight of CO₂ (44,010 g/mol) by the molecular weight of carbon (12,011 g/mol):

1/20 As the formula is based on the carbon stock difference ($CS_R - CS_A$) that occurs, this element is added to the formula as it should not be attributed to a single harvest and claimed all at once, but is aimed to be claimed over a period of 20 years;

P the productivity of the crop (measured as biofuel or bioliquid energy per unit area per year) and

e_B bonus of 29 g CO₂eq/MJ biofuel or bioliquid if biomass is obtained from restored degraded land shall be attributed, but only if evidence is provided that the land:

- was not in use for agriculture or any other activity in January 2008; and
- is severely degraded land, including such land that was formerly in agricultural use.

e_B shall apply for a period of up to 20 years from the date of conversion of the land to agricultural use, provided that a steady increase in carbon stocks as well as a sizable reduction in erosion phenomena for severely degraded land are ensured.

¹ Cropland as defined by IPCC

² Perennial crops are defined as multi-annual crops, the stem of which is usually not annually harvested such as short rotation coppice and oil palm.

Data gathering and data use

The above presented calculation formula for land-use change emissions implies a significant data gathering mechanism by the SSAP/RED system user in cases where land-use change applied. Only in case farmland has been used where the actual land use (cropland) was different in January 2008 or 20 years before the harvest of the soybeans, the land use change calculations must be implemented.

The documents referred to in RED II are listed below:

- the 2006 IPCC Guidelines for National Greenhouse Gas Inventories – volume 4
- Regulation (EU) No 525/2013 and Decision No 529/2013/EU (OJ L 156, 19.6.2018, p. 1)
- Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework

As per RED II Annex V Part C point 10, the Commission shall review, by 31 December 2020, guidelines for the calculation of land carbon stocks drawing on the above reference documents. The guidelines resulting from this review shall serve as the basis for the calculation of land carbon stocks for the purposes of RED II and therefore for this Protocol. When appropriate, a guidance document will be published by the SSAP/RED scheme. Until this time, Commission Decision (2010/335/EU) of 10 June 2010 on guidelines for the calculation of land carbon stocks for the purpose of Annex V to Directive 2009/28/EC shall be applied.

5.2.3. Emissions for Transport and Distribution

For the calculation of transport emissions, there are two different calculation formulas that may be used, mainly depending on the type of transport. For truck transport it is common practice that soybeans are moved in a loaded trip, and that the truck has an empty return trip and therefore calculation formula 1 must be used. In the case of train and vessel movements the return trip must not be considered and therefore calculation formula 2 must be used. In cases where a company can provide evidence that truck movements do not have empty returns, it may use calculation formula 2 also for this transport.

Calculation formula 1

Calculating transport emissions of soybean transport by truck must be done by using the following calculation formula:

$$e_{td} \left(\frac{kg \ CO_2eq}{MT_{dry \ soybean}} \right) = \frac{M_{amount \ of \ movements} * (d_{loaded} * C_{loaded} \left[\frac{liter}{km} \right] + d_{empty} * C_{empty} \left[\frac{liter}{km} \right]) * EF_{fuel} \left[\frac{kg \ CO_2eq}{liter} \right]}{total \ amount \ MT_{dry \ soybean}}$$

$M_{amount \ of \ movements}$

This is the number of truck movements needed to transport the total amount MT dry soybean. This number can be calculated by dividing the total amount MT dry soybean by the weight capacity of the truck. In the case of 1,000 MT soybeans transported and the trucks have a capacity of 20 MT, then M equals 50.

$d_{loaded} \ and \ d_{empty}$

This is the transported distance on which the soybeans are transported, which regularly includes a loaded trip and an empty return trip.

C_{loaded} and C_{empty}

This is the fuel consumption of the truck in liter per km for the loaded and empty trip

EF_{fuel}

This is the Emission factor of the fuel used in kg CO₂ equivalent per liter.

In case the company is not able to collect data on the fuel consumption of the trucking companies, a transport calculation methodology such as applied in Biograce 4d, 2014 can be used. That methodology results mostly in more conservative figures but can be adopted when only the distances towards the farmers are known.

Calculation formula 2

Calculating transport emissions of soybean by train or vessel must be done by using the following calculation formula:

$$e_{td} \left(\frac{kg \ CO_2eq}{MT_{dry \ soybean}} \right) = \frac{(total \ amount \ MT_{dry \ soybean} \ transported * d_{transport} \ [km]) * EF_{transport \ vehicle} \ \left[\frac{kg \ CO_2eq}{ton \ per \ km} \right]}{total \ amount \ MT_{dry \ soybean}}$$

$d_{transport}$

This is the distance on which the transport takes place.

$EF_{transport \ vehicle}$

This is the Emission factor of the transport vehicle in kg CO₂ equivalent per ton per km.

Data gathering and data use

It is likely that data on above formula elements are available primarily in the U.S. customary units. For efficiency it is recommended that conversion of data towards the SI base units is done centrally by the FGP. The below table shows how to convert the inputs relevant to calculate the transport emissions:

Input	Likely to be provided in following units by farmers (U.S. customary units)	Must be converted in following units by FGP (SI base units)	Relevant conversion factor ²
Amount of soybean	<i>Bushels</i>	<i>MT</i>	1 MT soybeans = 36.74 bushels (https://ussec.org/resources/conversion-table/)
Diesel	<i>diesel amount</i> $\left[\frac{gallon}{acre*yr} \right]$	<i>diesel amount</i> $\left[\frac{liter}{hectare*yr} \right]$	1 gallon = 3.785411784 liter 1 acre = 0.4046856422 hectare
Distance	<i>d_{loaded} and d_{empty}</i> or <i>d_{loaded} and d_{empty}</i> <i>d_{transport}</i> in miles	<i>d_{loaded} and d_{empty}</i> or <i>d_{loaded} and d_{empty}</i> <i>d_{transport}</i> in km	1 mile = 1.609344 km
F u e l c o n s u m p t i o n	<i>C_{loaded} and C_{empty}</i> in gallon/mile	<i>C_{loaded} and C_{empty}</i> in liter/km	1 gallon = 3.785411784 liter 1 mile = 1.609344 km

²source for conversion factors used is <https://www.unitconverters.net/> unless notified otherwise.

For implementing the calculation formulas for Transport and Distribution, the following data must be gathered and serves as input for the calculation:

- Transport distance (d_{loaded} and d_{empty} or $d_{transport}$), note that it is not allowed to average transport distances or from calculated transport emissions of calculated emissions of different transport modes.
- The transport vehicle type, and in case of trucks their loading capacity
- The amount of soybean transported

Companies that operate as traders under SSAP/RED may not aggregate/average different GHG values from different suppliers (FGPs). In this case the different values must be forwarded on different sustainability declarations, referring to the corresponding amounts from those suppliers. As an alternative, one sustainability declaration for the full outgoing batch can be created with the highest GHG value.

The following elements of the formula must be drawn from the list of emission factors in the Annex III of this protocol, the European Commission website and/or the Delegated Act, or have to come from another recognised/certified source:

- Fuel consumption C_{loaded} and C_{empty}
- Emission factor of the fuel EF_{fuel} (when using formula 1)
- Emission factor of the transport vehicle $EF_{transport\ vehicle}$ (when using formula 2)

- **Recognition of other RED II schemes**

SSAP/RED is a scheme that is focusing on soybeans from U.S. origin. In case U.S. soybeans are bought with a claim of another RED II voluntary scheme recognized and approved by the European Commission under the [Directive \(EU\) 2018/2001](#) which includes all SSAP/RED scope elements of this protocol (e.g. soybeans from U.S. origin), and sold by companies operating under SSAP/RED, it is allowed to use the RED compliant claim. The SSAP/RED compliant claim is only allowed when the full supply chain up to the soybean exporter is covered under the SSAP/RED protocol. It is explicitly not allowed to:

1. Bring other feedstocks than soybean under the scope of SSAP/RED
2. Import soybeans from outside the U.S. (with another RED compliant claim) and sell those soybeans with a SSAP/RED claim.

Annex I - Glossary

Continuously Forested Land

Continuously forested land is defined as a land cover/use category that is at least 30 percent stocked by single stemmed woody species of any size that will be at least 4 meters tall at maturity. The minimum areas for classification as forestland is 1 acre and at least 100 feet wide. **(Article 29 (3) a, (4) b).**

Other Forested Land

Other forested land is defined as land cover/use category that is between 10 and 30 percent stocked by single stemmed wood species of any size that will be at least 4 meters tall at maturity. **(Article 30 (3) a, (4) c).**

Crop reporting District

This is the regional administrative office at county level in the U.S.. Data from crop reporting districts can be helpful to cross check compliance of farmers in the area against specific SSAP/RED requirements. Certified FGPs may use this information in their internal audits, but remain responsible for their conclusions based on information provided by the crop reporting district.

Certificate Holder

The legal entity responsible for making an SSAP/RED compliant claim on soybean needs to be certificate holder of a valid SSAP/RED scope certificate. This certificate confirms the legal entity has procedures and system in place for correct implementation of SSAP/RED requirements. The document also assures buyers that the legal entity is able to sell them the soybean with a RED compliant claim.

Certificate Scopes

Each SSAP/RED scope certificate mentions the certification scope of the legal entity, which describes the activities of the company. Together, they are referred to as “Certified Main Entity” SSAP/RED has defined 2 different scopes:

- First Gathering Point (FGP)** – buying material based on farmer self-assessment, selling material with a SSAP/RED compliant claim.
- Trader** – buying and selling material with a SSAP/RED compliant claim.

Certified Main Entity

This is the company that applies for SSAP/RED certification, acting either as certified FGP or Trader. The certified FGP can include Elevators and Farms in its certification scope. The certified Trader can only buy material from certified FGPs and can have Storage locations in its scope.

Default Value

Means a value derived from a typical value by the application of pre-determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value.

Elevator

The elevator acts as the first physical collection point of the Soybean. It will act as a mass-balance location in the SSAP/RED supply chain under the responsibility of a certified FGP. Individual certification of the elevator, then becoming the certified FGP, is voluntary under SSAP/RED. Administration responsibility of the mass balance location is with the certified legal entity (e.g. FGP), but administration should always be linked to information collected at the elevator. The elevator may take up delegated tasks from the FGP, such as the collection of self-declarations to the elevator, but the FGP remains responsible for the internal monitoring system.

Export Certificate

This is the document created by the soybean exporter, which confirms U.S. legal requirements for the export of soybean are met.

Degraded

Is **grassland** that is characterised by long-term loss of biodiversity due to for instance overgrazing, mechanical damage to the vegetation, soil erosion or loss of soil quality.

FGP (First Gathering Point)

This is the first SSAP/RED certified entity in the supply chain, normally the soybean exporter. This entity is buying soybean and receives Self-declarations from the farmers that produced the soy. The entity is certified and can therefore bring the soybean to the market with a SSAP/RED compliant claim. The FGP may delegate execution of tasks to soy elevators or crop reporting districts, but it remains responsible for correct implementation of SSAP/RED requirements. Examples of delegated tasks to elevators could be the collection of self-declarations of farmers, and manage the system that stores transport documents. Examples of delegated tasks to crop reporting districts could be providing (historical) data on compliance of sustainability requirements in the district.

Grassland

Means terrestrial ecosystems dominated by herbaceous or shrub vegetation for at least 5 years continuously. It includes meadows or pasture that is cropped for hay but excludes land cultivated for other crop production and cropland lying temporarily fallow. It further excludes continuously forested areas as defined in Pillar 1 paragraph 1.3 unless these are agroforestry systems which include land-use systems where trees are managed together with crops or animal production systems in agricultural settings. The dominance of herbaceous or shrub vegetation means that their combined ground cover is larger than the canopy cover of trees

Human Intervention

Means managed grazing, mowing, cutting, harvesting or burning

Mass Balance

Each physical location that stores soybean that is no longer in legal ownership of the farmer is subject to mass balance and its calculation rules. These are described in section 3.1 of this protocol. A mass balance system

a) allows consignments of soybeans with differing sustainability characteristics to be mixed for instance in a container, processing or logistical facility;

(b) allows consignments of raw material with differing energy content to be mixed for the purposes of further processing, provided that the size of consignments is adjusted according to their energy content;

(c) requires information about the sustainability and greenhouse gas emissions saving characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and

(d) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture requires that this balance be achieved over an appropriate period of time.

Whenever the physical location also stores soybeans certified under another RED II sustainability scheme, proof should also be shown that the balance prevents double counting on the sustainability requirements (e.g. applying sustainability characteristics from SSAP/RED soy to soy from other RED compliant soy and to soy from non-sustainable sources). This must be proven by administrating unique reference numbers in outgoing batches that are linked to the different soy purchase batches with these different claims. The same would apply when soybeans without a sustainability claim are part of the mixture. This means that soybean can be stored with a SSAP/RED compliant claim, a RED compliant claim or without any sustainability claim. Physical mixing of soybean with different claims is allowed, as long as mass balance administration proves that no more soybean with SSAP/RED claim is shipped out, than the amount that entered the location.

Mass Balance Location

The physical location where soybeans are stored that is no longer in legal ownership of the farmer. The mass balance system operates at the level of a site which is defined as a geographic location with precise boundaries within which products can be mixed. If more than one legal entity operates at a given site, then each entity is required to operate their own mass balance system.

Outermost regions

Outermost regions have a specific situation which has been addressed in the RED II, referring to Article 349 TFEU. The energy sector in the outermost regions is often characterised by isolation, limited supply and dependence on fossil fuels while those regions benefit from significant local renewable sources of energy. The outermost regions could thus serve as examples of the application of innovative energy technologies. For SSAP/RED, this definition is mainly relevant for cases where soybean could be used for electricity generation. If this happens in outermost regions, the emissions can be calculated against a higher fossil fuel comparator, resulting in a better saving value.

Peatland

Peatland soils are soils with horizons of organic material (peat substrate) of a cumulative thickness of at least 30 cm at a depth of down to 60 cm. The organic matter contains at least 20 mass percent of organic carbon in the fine soil

Primary Forest

Primary forests are defined as forest or wooded land of native species where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed.

Producers

This term is not referring to a group of farmers associated with each other as a group or managed by a group manager, but merely referring to a multitude of single farmers operating independent from each other. The SSAP/RED Protocol does not include farm group auditing and certification, as farmer compliance is covered as part of the scope of the FGP audit.

Self-Declaration

This is the document that shall be filled out and signed by the farmer representing the trading entity of the farm. The document confirms the soybean are grown in compliance with the SSAP/RED requirements. The declaration also confirms that the farmer accepts additional evidence requests and/or onsite audits.

Soy Farmer

Person that represents the legal entity responsible for growing the soy. This may be done on own land or subcontracted/leased land. This person is responsible for the Self assessment/declaration.

Species Rich

- a) a habitat of significant importance to critically endangered, endangered or vulnerable species as classified by the International Union for the Conservation of Nature Red List of Threatened Species or other lists with a similar purpose for species or habitats laid down in national legislation or recognised by a competent national authority in the country of origin of the raw material; or
- b) a habitat of significant importance to endemic or restricted-range species; or
- c) a habitat of significant importance to intra-species genetic diversity; or
- d) a habitat of significant importance to globally significant concentrations of migratory species or congregatory species; or
- e) a regionally or nationally significant or highly threatened or unique ecosystem

SSAP/RED scope certificate

Legal entities that wish to collect and or trade soybean with a SSAP/RED compliant claim need a SSAP/RED scope certificate. This document is the proof for its buyers that it can supply soybean with an SSAP/RED compliant claim, including a Sustainability Declaration (as annex to the Export Certificate).

Sustainability Declaration

For all SSAP/RED compliant soybean exported, a Sustainability Declaration will be added to the Export certificate, to assure the buyer the soybeans are produced and gathered in line with the SSAP/RED requirements. This document will also provide the buyer with the necessary information that needs to be passed on to the final user of the biofuel produced from the soybean.

Storage location

This is the location where soybeans are stored which are under legal ownership of a SSAP/RED certified Trader. It will act as a mass-balance location in the SSAP/RED supply chain under the responsibility of a certified Trader. Individual certification is voluntary under SSAP/RED. Administration responsibility of the mass balance location is with the certified legal entity (e.g. Trader), but administration should always be linked to information collected at the elevator.

Tract

Field on which soybean are grown. One farmer can have different tracts. Tracts can be in legal ownership of the farm trading entity, or they can be subcontracted leased from other land owners.

Trader

This is a legal entity that wish to trade soybeans with an SSAP/RED compliant claim but are not buying the material directly from farmers, but from SSAP/RED certified FGPs or other SSAP/RED certified traders, must be certified under the SSAP/RED Protocol with the trader scope. The trader may delegate execution of tasks to soybean storage locations, but it remains responsible for correct implementation of SSAP/RED requirements. Examples of delegated tasks to storage locations could be operating the management system that stores transport documents.

Verification / 3rd party Assessment

All SSAP/RED certified legal entities (e.g. FGPs, traders) are subject to an annual 3rd party assessment that will verify if they act in compliance with the SSAP/RED requirements. After a completed verification without unsolved non-conformities, the legal entity receives a SSAP/RED scope certificate.

Wetland

Land that is covered with or saturated by water permanently or for a significant part of the year. In order to confirm if land complies to this definition, specific indicators are used to verify and reflect seasonal changes within a given year.

Annex II - Reference to U.S. Laws

SSAP/RED is referring to the following U.S. federal regulations:

Clean Air Act of 1990
Clean Water Act of 1987
Endangered Species Act of 1973
Federal Insecticide, Fungicide and Rodenticide Act
Federal Land Policy and Management Act of 1976
Fish and Wildlife Conservation Act of 1980
National Environmental Policy Act of 1969
National Trails System Act of 1968
National Wildlife Refuge System Act of 1966
National Forest Management Act of 1972
Occupational Safety and Health Act of 1970
Renewable Fuel Standard (CFR Title 40 Part 80 Subpart M 80.1401)
Soil and Water Conservation Act of 1977
Wild and Scenic Rivers Act of 1968
Wilderness Act of 1964

CFR Title 40 Part 80 Subpart M 80.1401 (the Renewable Fuel Standard), as amended, defines **existing agricultural land** as cropland, pastureland and land enrolled in the Conservation Reserve Program that was cleared or cultivated prior to December 19, 2007 and that, on December 19, 2007 was non-forested and actively managed as agricultural land as evidenced by records traceable to the land in question.

Clean Water Act Section 404 prohibits discharged of dredged or fill material into water including wetlands with perm it of the Army Corp of Engineering. Permit can be vetoed by the Environmental Protection Agency under Section 404 of the Clean Water Act.

[Section 404 of the Clean Water Act](#) (CWA) establishes a program to regulate the discharge of [dredged](#) or [fill](#) material into [waters of the United States](#), including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United Stated.

The basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation’s waters would be significantly degraded. In other words, when you apply for a permit, you must first show that steps have been taken to avoid impacts to wetlands, streams and other aquatic resources; that potential impacts have been minimized; and that [compensation](#) will be provided for all remaining unavoidable impacts.

Proposed activities are regulated through a permit review process. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404(b)(1) Guidelines, regulations promulgated by EPA.

Endangered Species Act of 1973 Sec 9 (a) 1 (G) and Sec 9 (a) 2 (e) as amended makes it unlawful for any person – including private and public entities – to “take” individuals of an endangered or threatened species. “Take” means to “harass,

harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” is further defined to include significant habitat modification or degradation which “actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering.”

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was first passed in 1947. It established procedures for registering pesticides with the U.S. Department of Agriculture and established labeling provisions. The law underwent major revision in 1972 and has been amended numerous times since including some significant amendments in the form of the Food Quality Protection Act (FQPA) of 1996. In 1972, FIFRA transferred responsibility of pesticide regulation to the Environmental Protection Agency (EPA) and shifted emphasis to protection of the environment and public health.

FIFRA mandates that EPA regulate the use and sale of pesticides to protect human health and preserve the environment. The EPA is specifically authorized to: strengthen the registration process by shifting the burden of proof to the chemical manufacturer and enforce compliance against banned and unregistered products. Further Amendments have strengthened the regulatory framework, including the authority to oversee the sale and use of pesticides, the registration process and determination of effectiveness for its intended use, appropriate dosage, and hazards of the particular material. FIFRA established a system of examination and certification both at the private level and at the commercial level for applicators who wish to purchase and use restricted use pesticides. The distribution of restricted pesticides is also monitored.

Food Security Act of 1985, as amended, suspends subsidies to farmers who covert wetlands to agricultural production. Wetlands are defined as an area that: has a predominance of hydric soils; is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of water tolerant vegetation typically adapted for life in saturated soil conditions.

Annex III - List of emission factors for calculating actual GHG emissions

Input	Unit	Factor	Source
N-fertiliser	kg CO ₂ eq/kg N	5.881	European Commission: Standard values for emission factors, v 1.0. 2015
Urea	kg CO ₂ eq/kg N	1.92	Biograce v 4d, 2014
Urea ammonium nitrate	kg CO ₂ eq/kg N	2.68	Biograce v 4d, 2014
Ammonium nitrate	kg CO ₂ eq/kg N	3.45	Biograce v 4d, 2014
Ammonium sulphate	kg CO ₂ eq/kg N	1.68	Ecoinvent v. 3.1, 2014: market for ammonium sulphate, as N, GLO
Ammonium nitrate phosphate	kg CO ₂ eq/kg N	RER: 1.9 RoW: 1.65	Ecoinvent v. 3.1, 2014: ammonium nitrate phosphate production, as N,
Calcium ammonium nitrate	kg CO ₂ eq/kg N	3.65	Biograce v 4d, 2014
Monoammonium phosphate	kg CO ₂ eq/kg N	1.82	Ecoinvent v. 3.1, 2014: monoammonium phosphate production, RER
Diammonium phosphate	kg CO ₂ eq/ kg N	2.05	Ecoinvent v. 3.1, 2014: diammonium phosphate production, RER
P2O5-fertilizer	kg CO ₂ eq/kg P ₂ O ₅	1.011	European Commission: Standard values for emission factors, v 1.0. 2015
Triple superphosphate (TSP)	kg CO ₂ eq/kg P ₂ O ₅	0.54	Biograce v 4d, 2014
Rock phosphate	kg CO ₂ eq/kg P ₂ O ₅	0.09	Biograce v 4d, 2014: 21%P ₂ O ₅ 23%SO ₃
K2O-fertilizer	kg CO ₂ eq/kg K ₂ O	0.576	European Commission: Standard values for emission factors, v 1.0. 2015
CaO-fertilizer	kg CO ₂ eq/kg CaO	0.13	European Commission: Standard values for emission factors, v 1.0. 2015
Pesticides	kg CO ₂ eq/kg a.i.	10.97	European Commission: Standard values for emission factors, v 1.0. 2015
Glyphosate	kg CO ₂ eq/kg a.i.	9.79	Ecoinvent v. 3.1, 2014: market for glyphosate, GLO
Seeds soybean non-GMO	kg CO ₂ eq/kg seed	0.40	Biograce v 4d, 2014: Non-GMO
Seeds soybean	kg CO ₂ eq/kg seed	1.81	Ecoinvent v. 3.1, 2014: soybean seed production for sowing (13% max H ₂ O)

Table 3: Emission factors for cultivation

Table 4: Emission factors for transport & distribution

Input	Unit	Factor	Source
Diesel consumption truck (loaded)	liter/km	0.49	BLE, 2010, Guideline Sustainable Biomass Production
Diesel consumption: truck (unloaded)	liter/km	0.25	BLE, 2010, Guideline Sustainable Biomass Production
Diesel	kg CO ₂ eq/liter	3.14	Biograce v 4d, 2014
HFO	kg CO ₂ eq/liter	3.42	Biograce v 4d, 2014
Electricity consumption train (electricity)	MJ/ton-km	0.06	Biograce v 4d, 2014. Conversion factor 1 MJ = 0.28 kWh
Freight train	kg CO ₂ eq/ ton-km	0.04	Ecoinvent v. 3.1, 2014: transport, freight train, RoW
Barge tanker	kg CO ₂ eq/ ton-km	0.04	Ecoinvent v. 3.1, 2014: transport, freight, inland waterways, barge tanker, GLO
Transoceanic tanker	kg CO ₂ eq/ ton-km	0.002	Ecoinvent v. 3.1, 2014: market for transport, freight, sea, transoceanic tanker, GLO

Note: for the purpose of calculating actual GHG emission, whenever available, the EC standard calculation values published on the Commission website and/or included in the Implementing Act shall be applied.