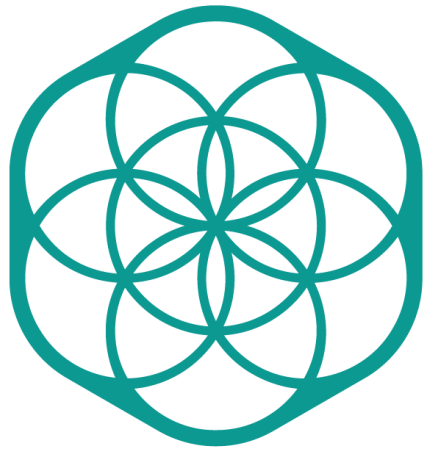
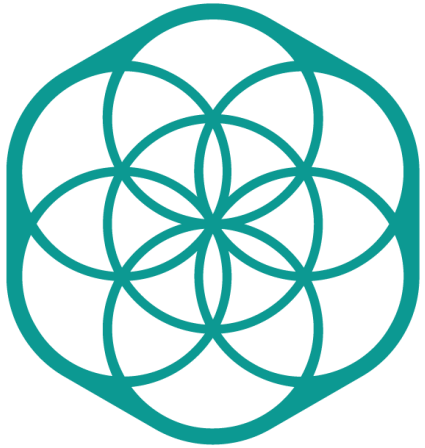


RSB®

Roundtable on
Sustainable Biomaterials

www.rsb.org



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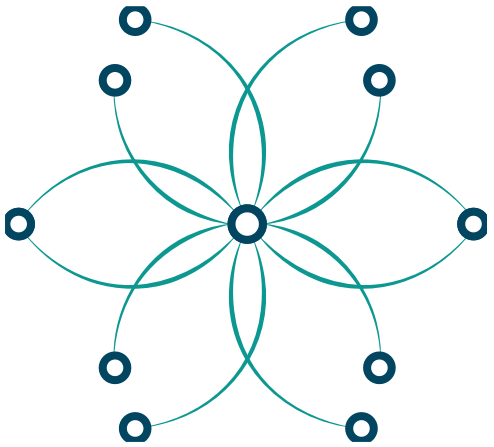
SAF Sustainability Certification Training

Presentation outline

1. Introduction to RSB
2. RSB and SAF in Africa
3. Sustainability requirements
4. Certification approach
5. Traceability and chain of custody
6. Q&A

Introduction to RSB

Our mission



To advance the just and sustainable transition to a net-positive world, in collaboration with global partners from industry, civil society, policymakers and academia.

Our activities

Certification

Providing clarity on what good looks like

Programmes

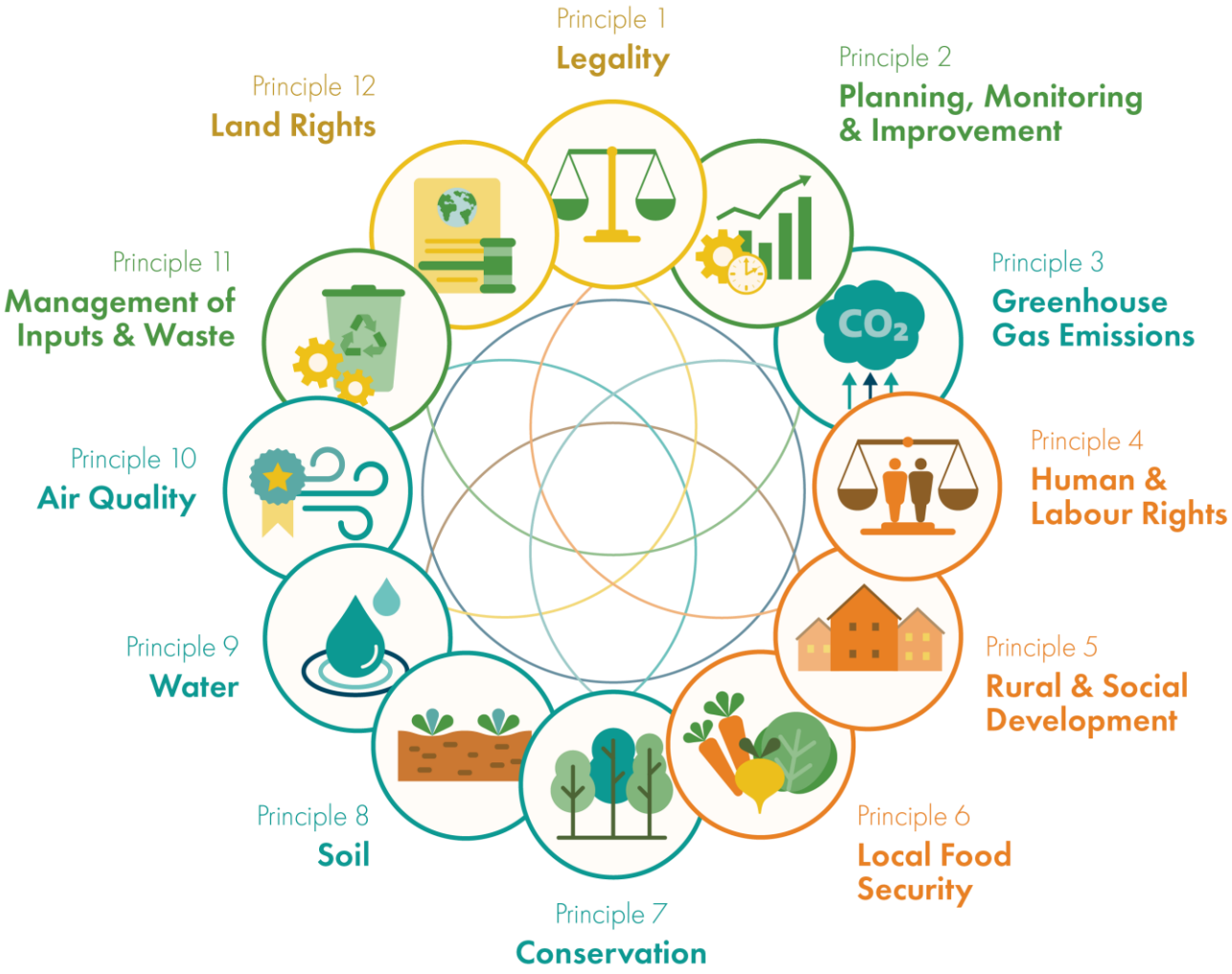
Building capability to make change happen

Community

Enabling collaboration for greater impact

Our global membership is highly diverse
A wide range of organisations across supply chains, regions and industries

Holistic approach to support creating a positive impact



RSB & SAF in Africa

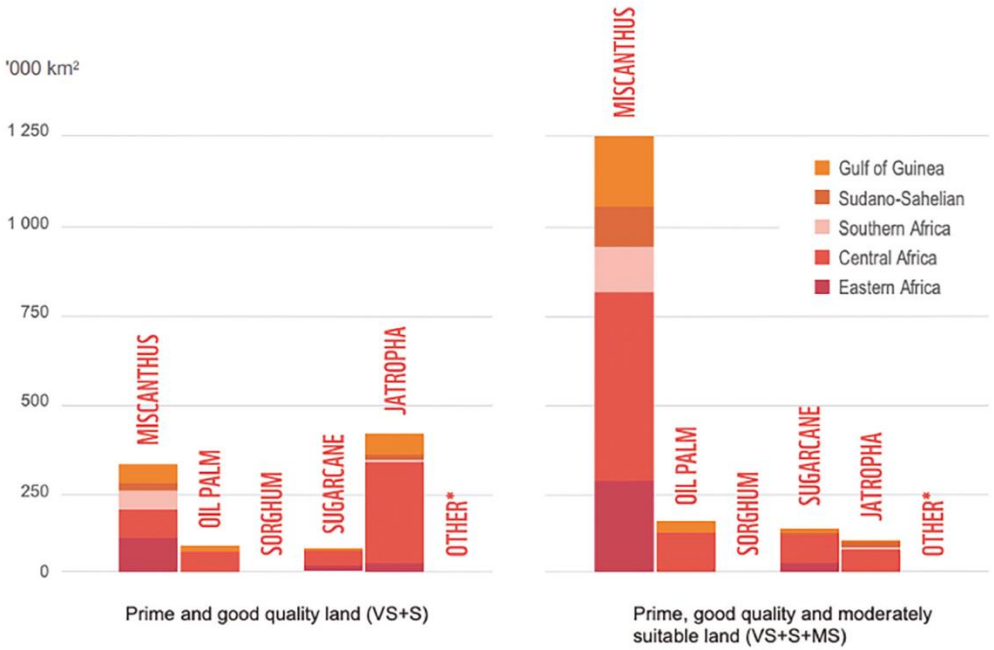
Fuelling the Sustainable Bioeconomy: Africa project outputs

Report on sustainable Aviation Fuel Potential in Sub-Saharan Africa

- International Institute for Applied Systems Analysis (IIASA) assesses pathways towards large-scale sustainable biofuel development in Sub-Saharan Africa.

- The report “Taking off: Understanding Sustainable Aviation Biofuel Feedstock Potential in Sub-Saharan Africa”, is based on a spatially detailed resource assessment for different biofuel feedstocks.

Figure 8: Geographical distribution of best-performing RSB-compliant feedstocks on REMAIN land under current conditions

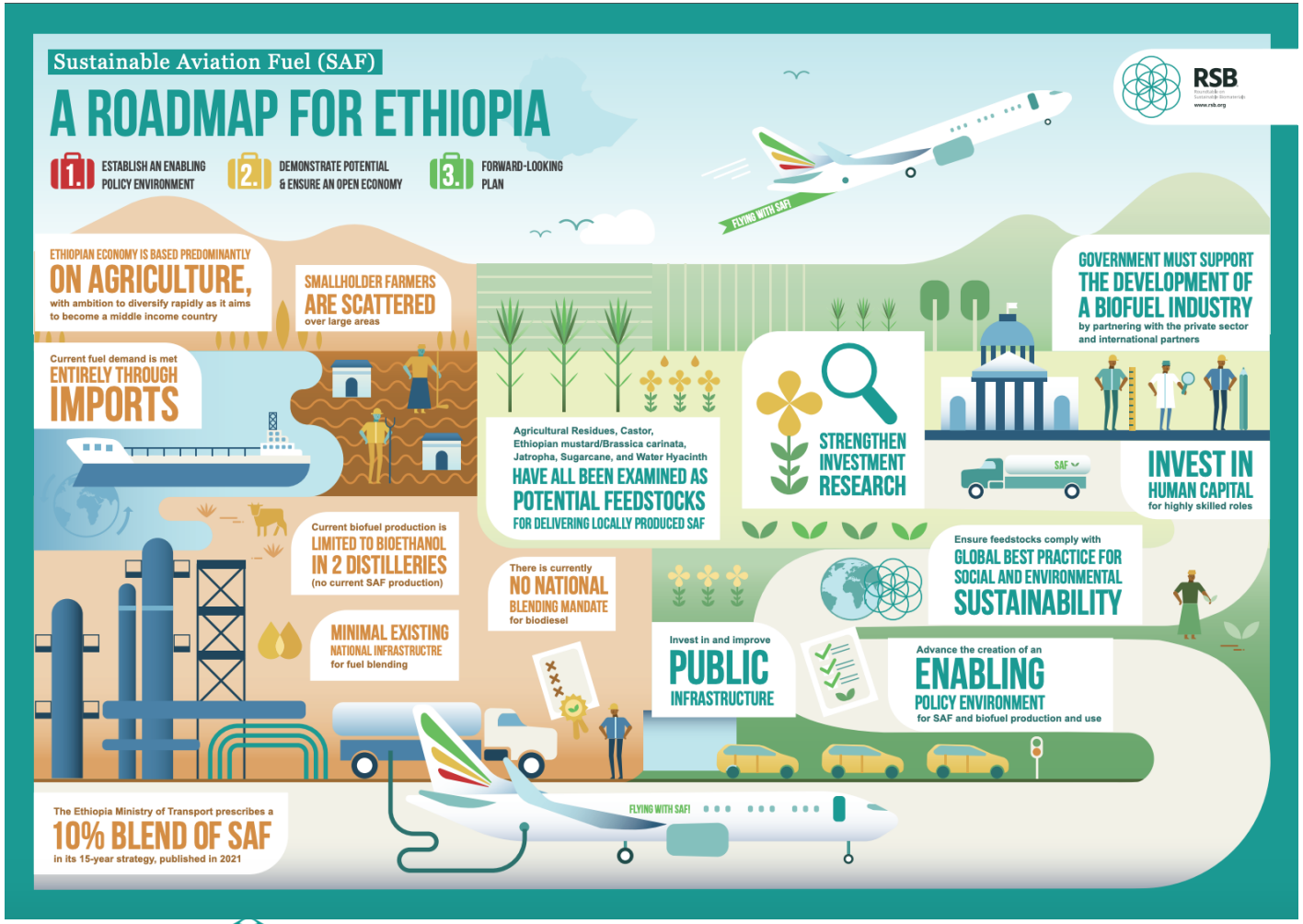


* These extents include small amounts of Solaris tobacco that meet the GHG savings criterion in southern Africa.
Source: Own calculations

Fuelling the Sustainable Bioeconomy: Africa project outputs

National SAF roadmap - Ethiopia

- To explore and advance Ethiopia's capacity to produce biofuels for use as Sustainable Aviation Fuel (SAF), RSB initiated the development of a 10-year SAF Roadmap for the country – with a report detailing a roadmap for SAF development in the country.

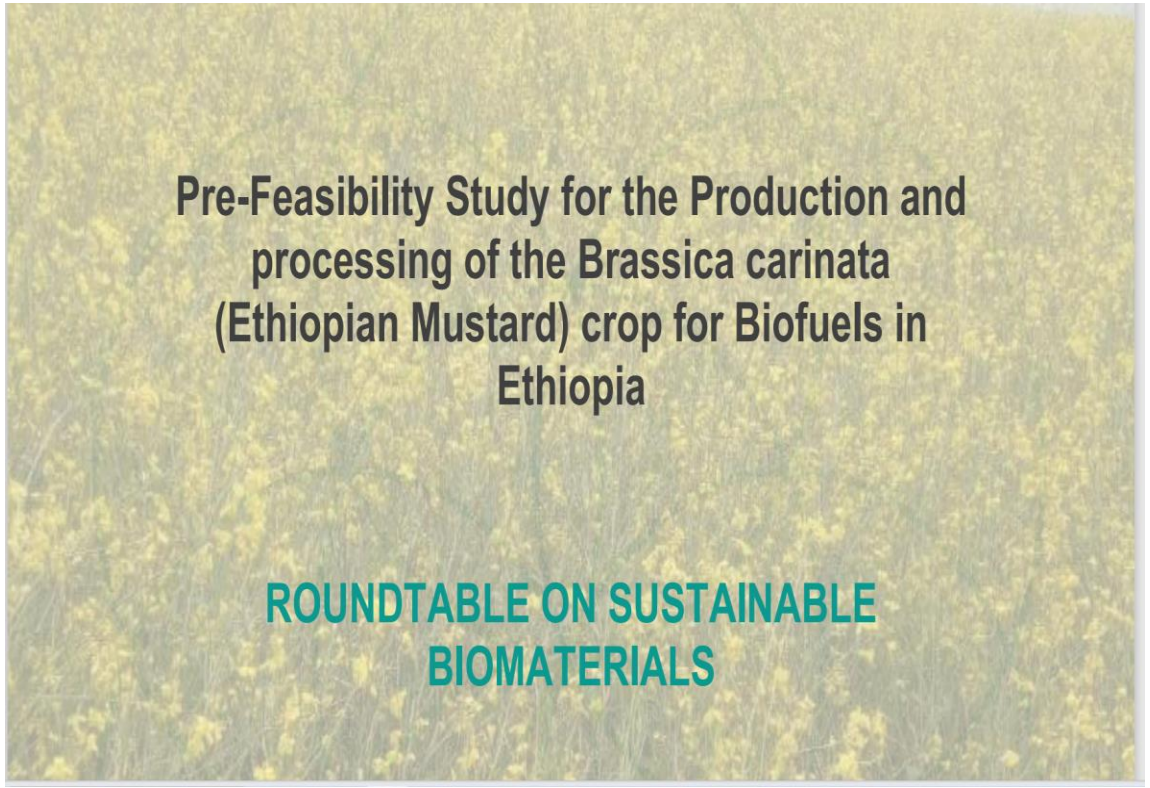


Fuelling the Sustainable Bioeconomy: Africa project outputs

Pre-feasibility study on Brassica Carinata as sustainable feedstock for SAF - Ethiopia

- The SAF roadmap has identified Brassica carinata as one of the potential feedstocks for SAF production in Ethiopia.

- Findings of the pre-feasibility study show the calculated cost of cultivation of seed production in Ethiopia is competitive with similar costs in other regions of the world



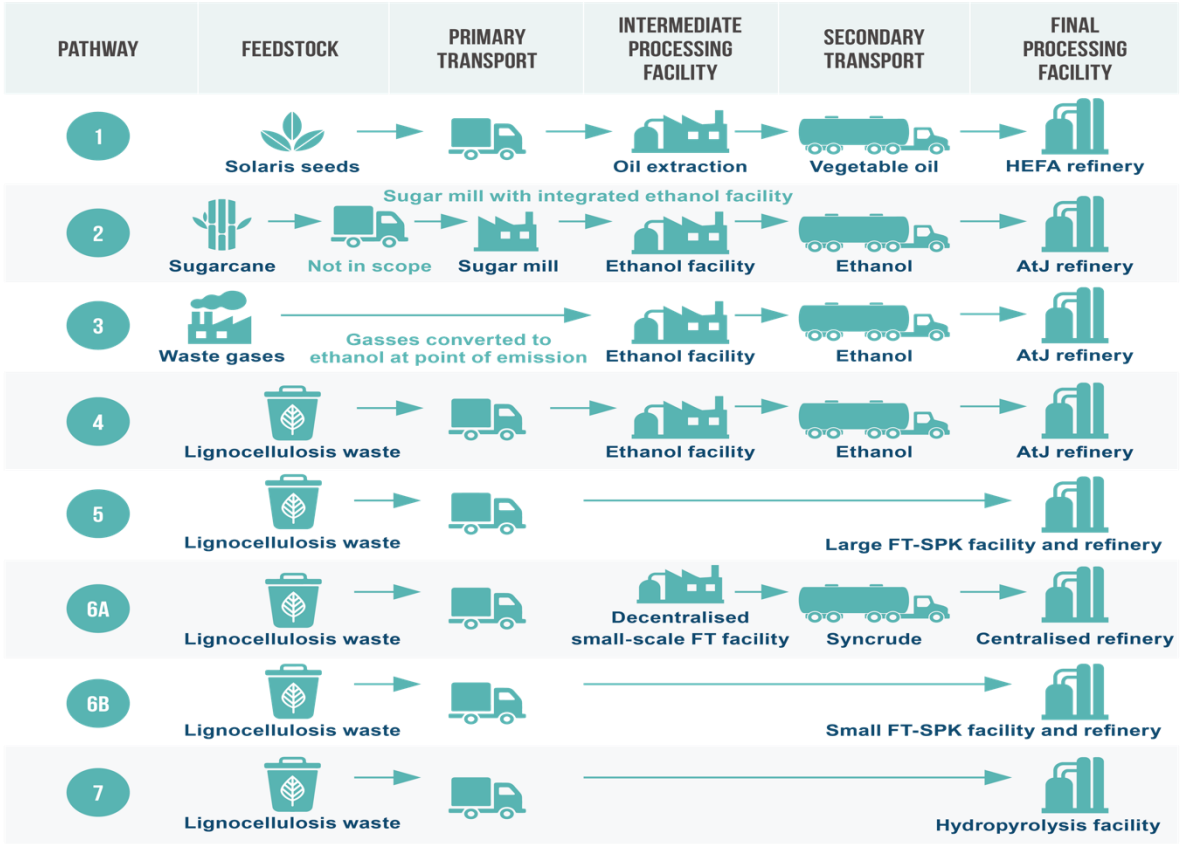
Fuelling the Sustainable Bioeconomy: Africa project outputs

Report on SAF production – South Africa

- WWF South Africa supports RSB in developing a techno-economic model of potential SAF pathways in South Africa.

- The report: "*Fuel for the future: A blueprint for the production of sustainable aviation fuel in South Africa*" finds that development of a new domestic SAF industry could be a pillar of South Africa's low-carbon economy and play an important role in a just energy transition.

Feedstock source supply chain diagrams for SAF pathways in South Africa



Fuelling the Sustainable Bioeconomy: Africa project outputs

Stakeholder meeting and SAF roadmap – South Africa

- RSB hosted a SAF stakeholder meeting to support South African stakeholders in developing the capacity and skills to bolster the local SAF economy, with strong sustainability principles at its core – in partnership with long-term partner WWF South Africa.
- RSB published the SAF roadmap and event outlining key conversations held at the event, outcomes, and the next steps that can be undertaken to make SAF a sustainable reality in the region.

Fuelling the Sustainable Bioeconomy: Africa project outputs

Invasive Alien Plants as sustainable feedstock for SAF – South Africa

- More than 10% of South Africa's land mass is covered by IAPs to some degree and they use up to 6% of the country's fresh water, which can potentially increase up to 16% without eradication measures, with an increase rate of 5-10% every year in land coverage.

- RSB has developed guidance to unlock the significant potential of invasive alien biomass to feed the biofuel and bioenergy markets

Fuelling the Sustainable Bioeconomy: Africa project outputs

SAF trainings

Ethiopia

- Developed and delivered SAF and carbon offset courses for the Ethiopian Airlines Aviation University
- RSB plans to offer SAF courses on online platform for a wider reach - RSB academy

South Africa

- Pilot of Sustainability certification approach on Invasive Alien Plants (IAPs) and
- pilot programme on Power to X course

RSB Certification approach

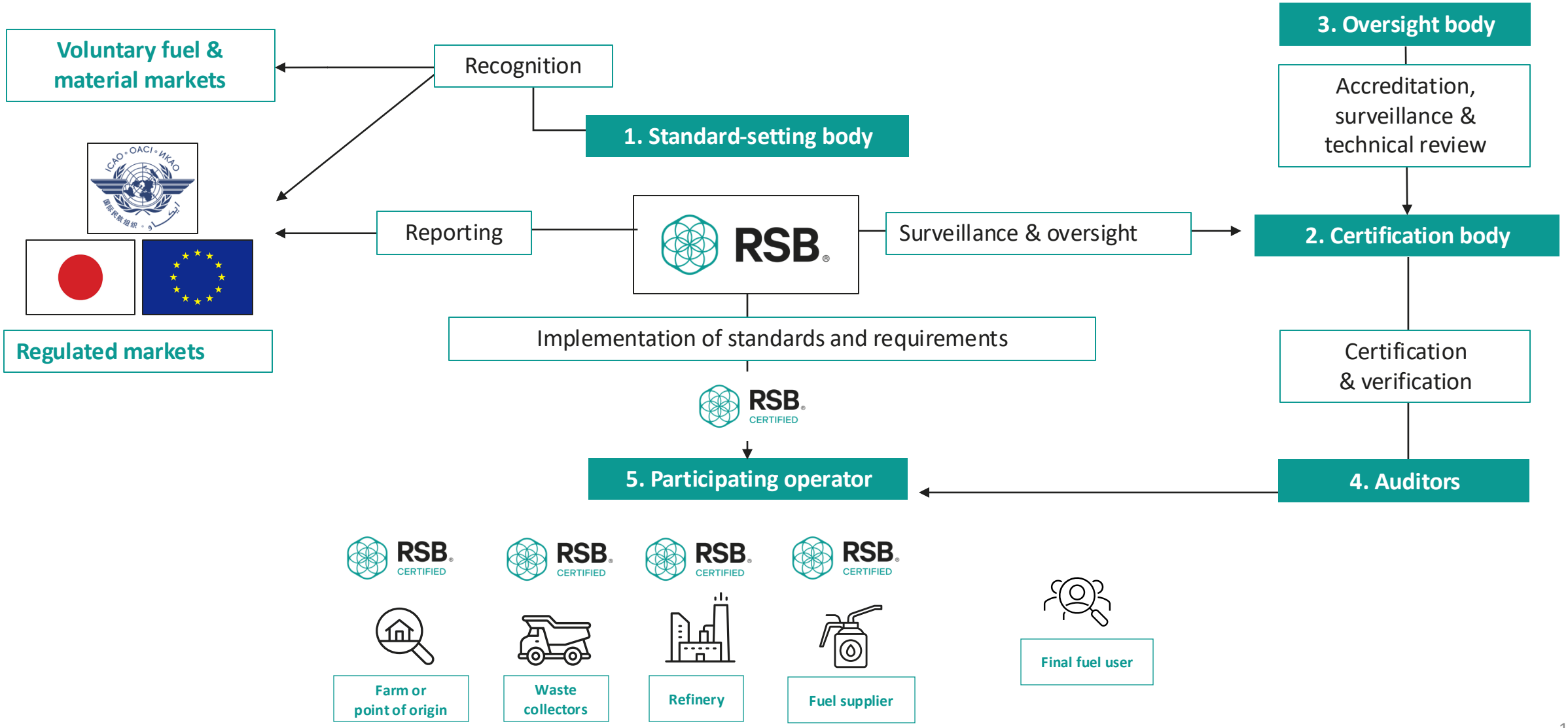
Certification schemes

	RSB Global Fuels & Advanced Products	RSB EU RED	RSB CORSIA	Japan FIT
Sustainability requirements	RSB Principles and Criteria			
Type of claim	Voluntary	Regulatory; linked to EU RED targets	Regulatory; linked to ICAO CORSIA targets	Regulatory; linked to METI targets
Scope	Fuels and materials produced from biocircular feedstock	Renewable fuels and energy produced with bio-based feedstock and RCF/RFNBOs	SAF from bio-based feedstock and waste gases	Bio-based wastes and residues from agri industry for energy production
Renewable input allocation	Across all outputs, based on energy or economic value. Flexible attribution options.	Across all outputs, based on energy value (LHV).	Across all outputs, based on energy value (LHV).	Across all outputs, based on energy value (LHV).
GHG reduction threshold	Fuel: 50% (60% after 2015) Products: 10%	60% (65% after 2021) RCF/RFNBO: 70%	50% core LCA (10% LCA+ILUC)	50% (70% after 2030)
Fossil baseline	Fuel: 90g CO2e/MJ Products: fossil comparator	94g CO2e/MJ RCF/RFNBO:	89g CO2e/MJ	180 g CO 2 /MJ electricity
Book and claim allowed?	Yes	No	No	No

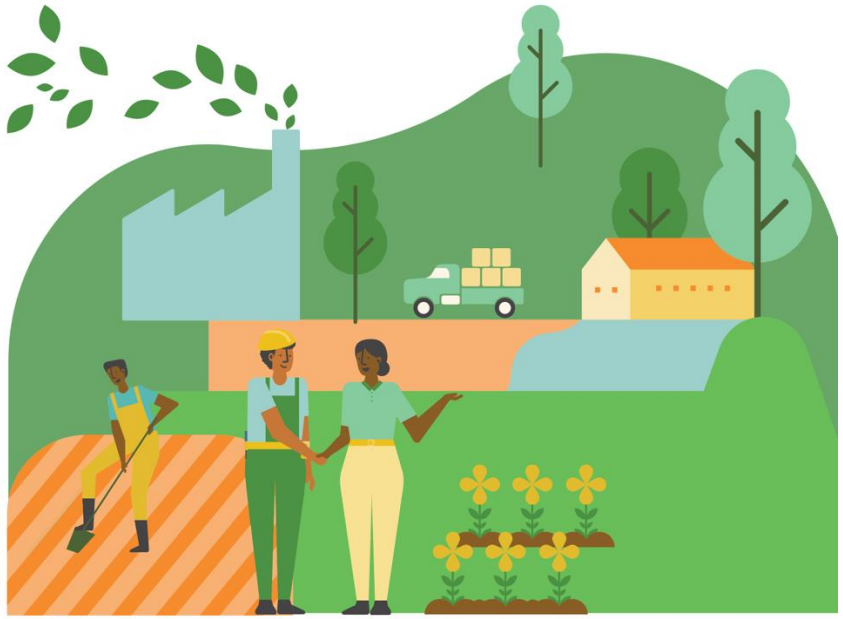
Pillars of Sustainability Certification

Management System	▪ **Clear responsibilities of staff pertaining to all relevant RSB requirements** (e.g., record keeping, GHG calculation, forwarding of sustainability documents) ▪ **Yearly internal audit** conducted and results kept for check by auditor ▪ **Management system fit for purpose**
Traceability and chain of custody system	▪ **Record of documentation** (e.g. Proofs of Sustainability documents, delivery documents, contracts, weighbridge tickets, etc.) ▪ Fit-for-purpose **traceability and mass balance system**
GHG emissions calculation	▪ **Availability, completeness and correctness of GHG calculation** ▪ Appropriate use of **emission factors** ▪ **Correct indication of GHG emission value on sustainability documents** (e.g., on Proof of Sustainability)
Sustainability	▪ **Meet the RSB 12 Principles and Criteria – Industrial and Agricultural sites** ▪ Meet social, legal & rights-based, environmental and management practices for sustainable production in a bio-based supply chain

The Certification Ecosystem



Economic Operator Activities



- **Primary Biomass Producer**: Organisation that applies for certification for a specific activity that includes the production of crops or woody material, for example farm operators or plantation owners.
- **Points of Origin**: The generator, such as companies, farms, forest areas, residences, industries and commercial facilities of end-of-life-products, production residues or other waste materials.
- **First Collectors**: Operator that receives end-of-life-products, by-products or production residues from points of origin.
- **Industrial Operators**: Organisation that applies for certification for a specific activity that includes feedstock processing and/or the production of intermediary products, fuels or advanced products.
- **Mechanical operator**: Subgroup of industrial operators only conducting mechanical or physical processing, (i.e. mixing, assembling, sorting, moulding, cutting, plastics extrusion).
- **Trader**: Organisation that applies for certification for a specific activity that includes buying and selling of materials or products, including raw materials, intermediates and final products.

The Certification Ecosystem: Fuels Example

Recognition

Reporting

RSB

Oversight body

Accreditation body

Accreditation & surveillance

Surveillance & oversight

Certification body

Certification & verification

Implementation of standards and requirements

Feedstock sustainability

Traceability & chain-of-custody

GHG emissions

RSB CERTIFIED

RSB CERTIFIED

RSB CERTIFIED

RSB CERTIFIED

Farm or point of origin

First collector

Refinery

Fuel supplier

Final fuel user

Overview of the certification process

1: DEFINE YOUR RSB CERTIFICATION SCOPE

- Define the certification scope
- Select the certification scheme/s applied (EU RED and/or CORSIA)

2: APPLY FOR CERTIFICATION

- Online application
- Select an auditor (certification body) and agree on an audit date
- RSB only 2 weeks public comment period

3: PREPARE FOR AN AUDIT

- Conduct a risk assessment
- Conduct a self-evaluation against applicable requirements
- Develop a sustainability approach
- Develop Chain of Custody procedure
- Perform GHG calculation

4: THE AUDIT

- Desk-based preparation
- On-site evaluation
- Identification of non-conformities, if any
- Time to address non-conformities
- SCS certificate issued
- Public audit summary published on SCS website

5: ONGOING

- Annual audits depending on your SCS

Sustainability Requirements

CORSIA themes are covered by the P&C

GHG	CORSIA SAF should generate lower carbon emissions on a life cycle basis = 10% reduction.	**RSB Principle 3**
Carbon stock	CORSIA SAF should not be made from biomass obtained from land with high carbon stock.	**RSB Principle 7**
Water	Production of CORSIA SAF should maintain or enhance water quality and availability	**RSB Principle 9**
Soil	Production of CORSIA SAFs should maintain or enhance soil health.	**RSB Principle 8**
Air	Production of CORSIA SAF should minimise negative effects on air quality	**RSB Principle 10**
Conservation	Production of CORSIA SAF should maintain biodiversity, conservation value and ecosystem services.	**RSB Principle 7**

CORSIA themes are covered by the P&C

Waste & chemicals	Production of CORSIA SAF should promote responsible management of waste and use of chemicals.	**RSB Principle 11**
Human rights	Production of CORSIA SAF should respect human and labour rights.	**RSB Principle 4**
Land-use rights	Production of CORSIA SAF should respect land rights and land use rights including indigenous and/or customary rights.	**RSB Principle 12**
Water-use rights	Production of CORSIA SAF should respect prior formal or customary water use rights.	**RSB Principle 9**
Local development	Production of CORSIA SAF should contribute to social and economic development.	**RSB Principle 10**
Food security	Production of CORSIA SAF should promote food security in food insecure regions.	**RSB Principle 6**

Traceability and Chain of Custody

What is a Chain of Custody system?

The RSB Chain of Custody requires:

- a robust and transparent system that provides traceability for the RSB Certified Material (e.g. biomass, chemical intermediaries, biofuel etc.) sourced from and/or delivered to other operators in the supply chain;

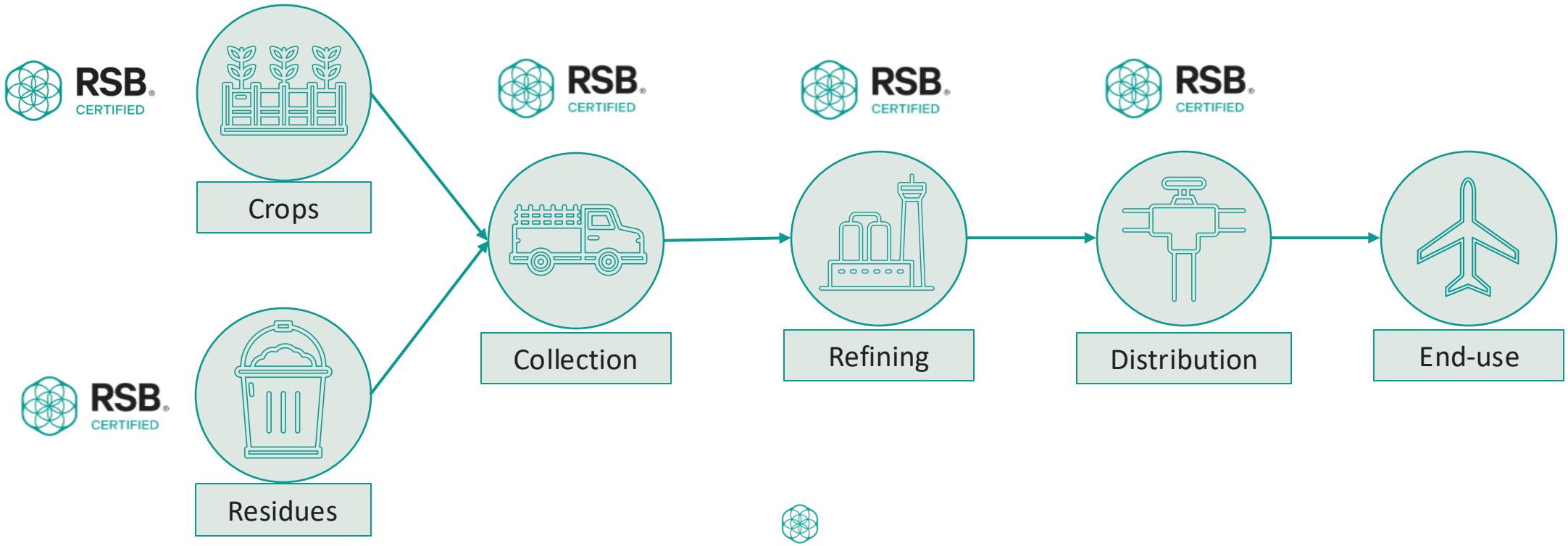
- that only certified operators associated with the RSB can make compliance claims with products that are compliant with the RSB Standards; and

- continuous documentation along the supply chain, which allows for identification of RSB compliant product in acquiring, handling and forwarding of product.

Chain of Custody system

The entire supply chain must be certified for the final product to carry a claim.

Each movement of the product along the supply chain needs to be accounted for and tracked, this is called the Chain of Custody.



Chain of Custody system models

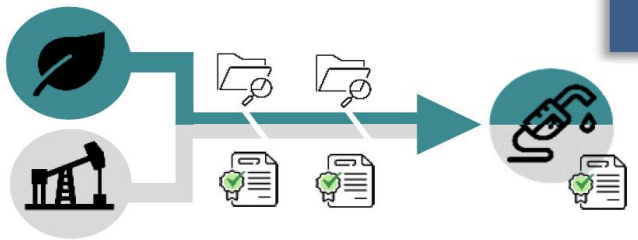
Identity preservation

PoS

Delivers consignments physically containing **100% certified products** from a **uniquely identifiable source**

Mass balancing

PoS

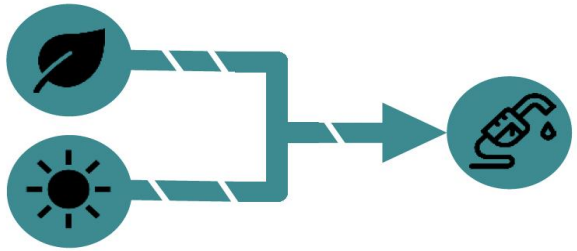


Physical product and **sustainability information** are **coupled** when they are traded between parties.
Products with different sustainability characteristics **can be physically mixed**, but are kept **administratively segregated**.

EU RED + CORSIA eligible

Segregation

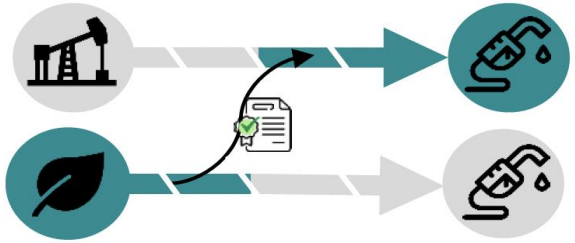
PoS



Delivers consignments physically **containing 100% certified products**; but the **exact origins** of the material in the consignment **can not be traced**.

Book & Claim*

GO or GO/PoS



Trade of **physical products** is **completely decoupled** from the trade of **sustainability certificates.**

Voluntary market only

Credit: German Energy Agency (DENA), Workshop: Traceability of Powerfuels, October 2022

Proof of Sustainability (PoS)

- With each shipment along the supply chain an RSB Operator should include a proof of sustainability (PoS) document.
- The proof of sustainability (PoS) shall include the product information described in the chain of custody standard – Annex 1.
- The operator may use regular sales documentation (invoices, bill of lading etc.) instead of the PoS provided it includes the product information described in the Chain of Custody Standard (RSB-PRO-11-001-20-001).
- RSB can provide templates for the PoS that may be used by the operator.

Proof of Sustainability (PoS)

Batch ID Number:	Batch_ID_2460101
Number of the Delivery Note	Invoice_2460101
Date of Shipment:	02-Jun-23
Date of Issuance:	02-Jun-23

Supplier (name of certified operator who issue the PoS)

Name:	Address:
Sustainable Aviation Fuel Ltd	01 London Square, London UK

Supplier - site from which the product is forwarded (if different from the supplier above)

Name:	Address:
N/A	N/A

Customer

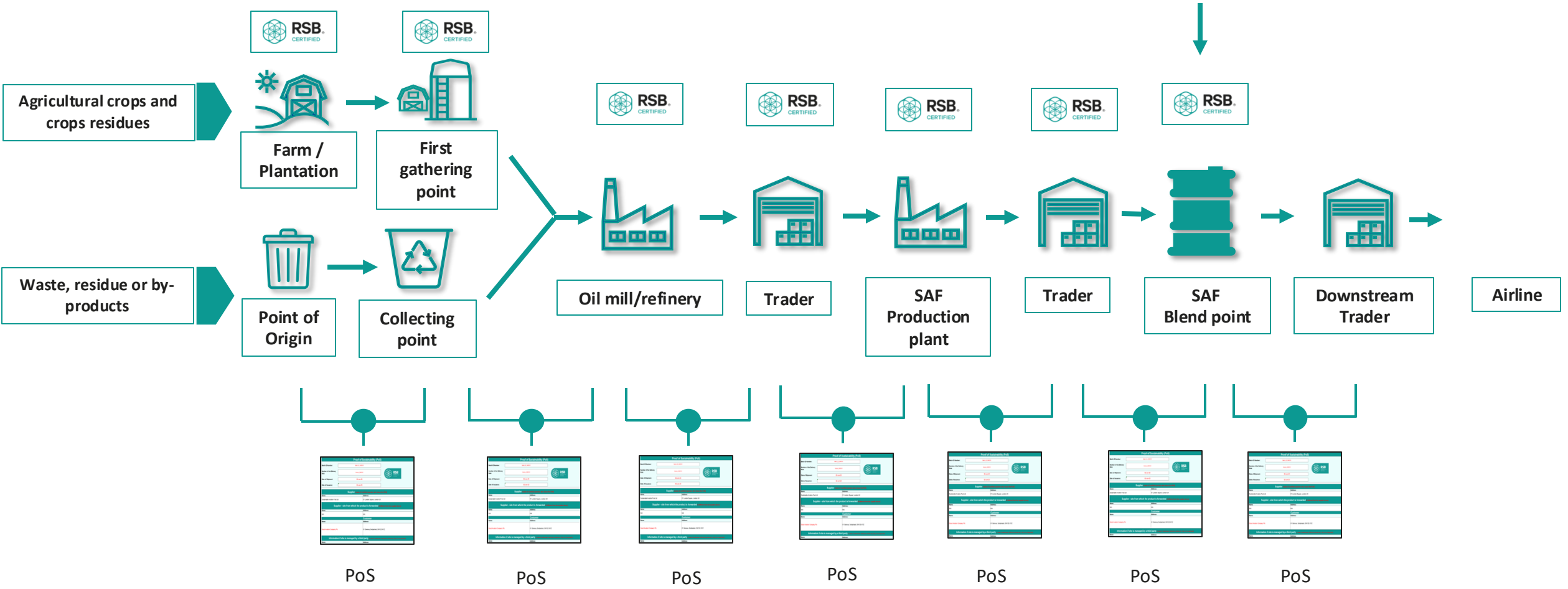
Name:	Address:
Good Aviation Company Plc	01 Geneva, Switzerland, SW123 XYZ

Information if site is managed by a third party (in case of warehouses, distributors centers etc); May it is not applicable

Name:	Address:

Flow of Sustainability Information

Sustainability information (e.g. on GHG emissions) is forwarded through the supply chain step-by-step.



Thank you!

Please get in touch with me at **yitatek.yitbarek@rsb.org**