



Bogotá, 6 March 2018

GRAS to Prepare for Certification – Verification of Land Use Change and Risk Assessments

Dr Jan Henke, GRAS



GRAS is a comprehensive solution to implement and monitor sustainable, deforestation-free supply chains

- ✓ Successful implementation and monitoring of sustainability and **zero-deforestation commitments**
- ✓ **Cost-efficient** sustainability assessments
- ✓ Support of **certification** processes
- ✓ **Efficient** supplier management
- ✓ Regular sustainability **reporting**
- ✓ **Independent** and objective analysis
- ✓ **Customized** solutions for specific needs
- ✓ Reliable and competent **customer support**

GRAS can verify and monitor compliance with the most relevant sustainability certification criteria

Biodiversity Areas



Deforestation



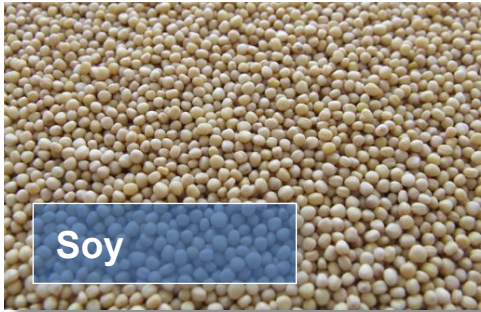
High Carbon Stock



Social Indices



GRAS analysis can be applied globally for a huge variety of crops



GRAS uses latest remote sensing technology and sensors to identify land use change, deforestation and degradation of land cover



GRAS is successfully used by its clients to verify and implement sustainability commitments by ...



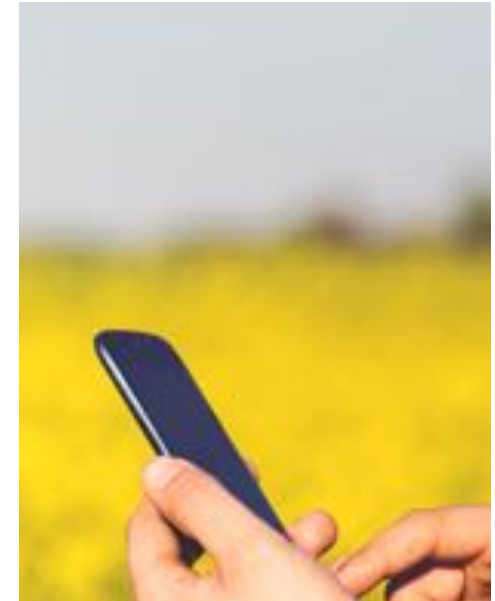
... identifying
deforestation and
degradation of high
biodiverse areas



... mapping and
managing risks in
agricultural production



... implementing
secure and efficient
monitoring of global
supply chains



... supporting
credible and cost-
efficient certification
processes

GRAS is a comprehensive solution to support auditors and auditee in efficient certification

Need:

- **Efficient preparation for audit.** Do my farmers comply with ISCC Principle 1, or similar principles?
- Management of **farm supply base**
- Determination of **risk level** and sample size
- Identification of high risk farms to set the right audit focus

Solution:

- Provision of detailed **information** on **land use change** and **HCV** areas
- **Objective** risk **assessment** and **ranking** of production areas
- Determine **audit-readiness** of company

With GRAS certification becomes...



More Digital



More Transparent

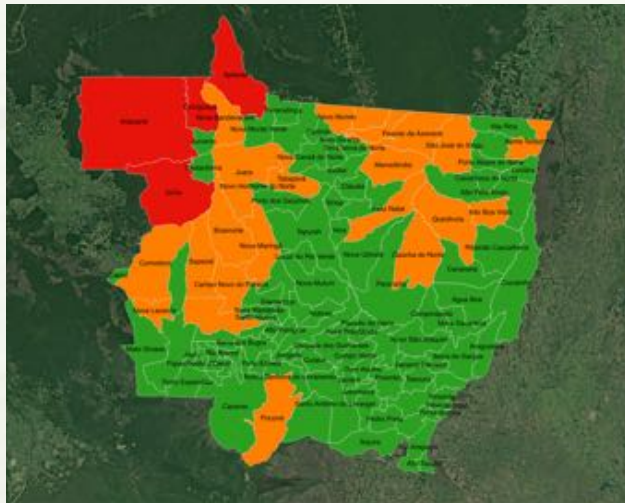


More Effective

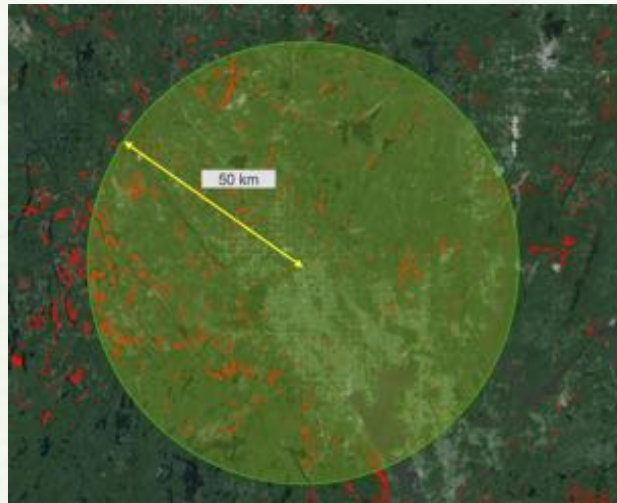


Less costly

GRAS analyses sustainability risks globally on different levels, depending on your strategy and goal



Administrative level and cluster analysis



Sourcing areas with a specific radius



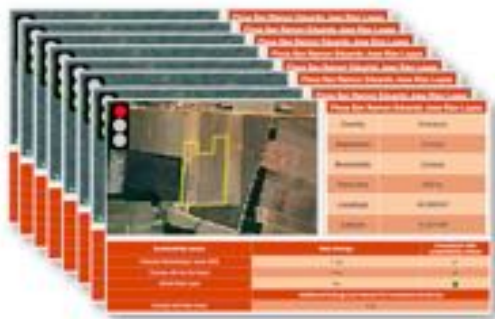
Detailed field analysis

Examples

Use the GRAS approach for profound and secure sustainable sourcing decisions

1. Semi-automated sustainability report

→ Cost-effective and quick analysis of all land parcels



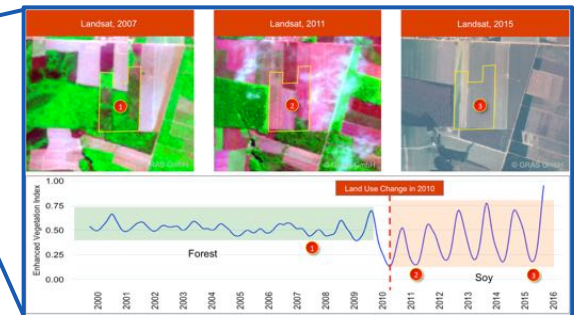
2. Risk ranking according to sustainability risk

→ Sourcing possible from low risk areas

Farm	Total Farm Area	Potential Deforestation*	Overlap with No Go Area	Overlap with Risk Area**	GRAS Risk Level†
Example Farm 109	254 ha	11.9 ha	0	0	high
Example Farm 221	988 ha	40 ha	0	988 ha	medium
Example Farm 30	790 ha	30 ha	0	0	medium
Example Farm 23	185 ha	5.5 ha	0	185 ha	low
Example Farm 5	477 ha	2.8 ha	0	0	low
Example Farm 12	427 ha	2.8 ha	0	0	low
Example Farm 342	527 ha	2.4 ha	0	0	low

3. Detailed analysis for high risk farms

→ Exclusion of suppliers which are not compliant



- ✓ Profound and objective sustainability analysis
- ✓ Efficient mapping and monitoring of risk clusters within the supply chain
 - ✓ Support of certification processes

Case Study: Sugar and ethanol producer

Analysis of sugar mills with sourcing radius

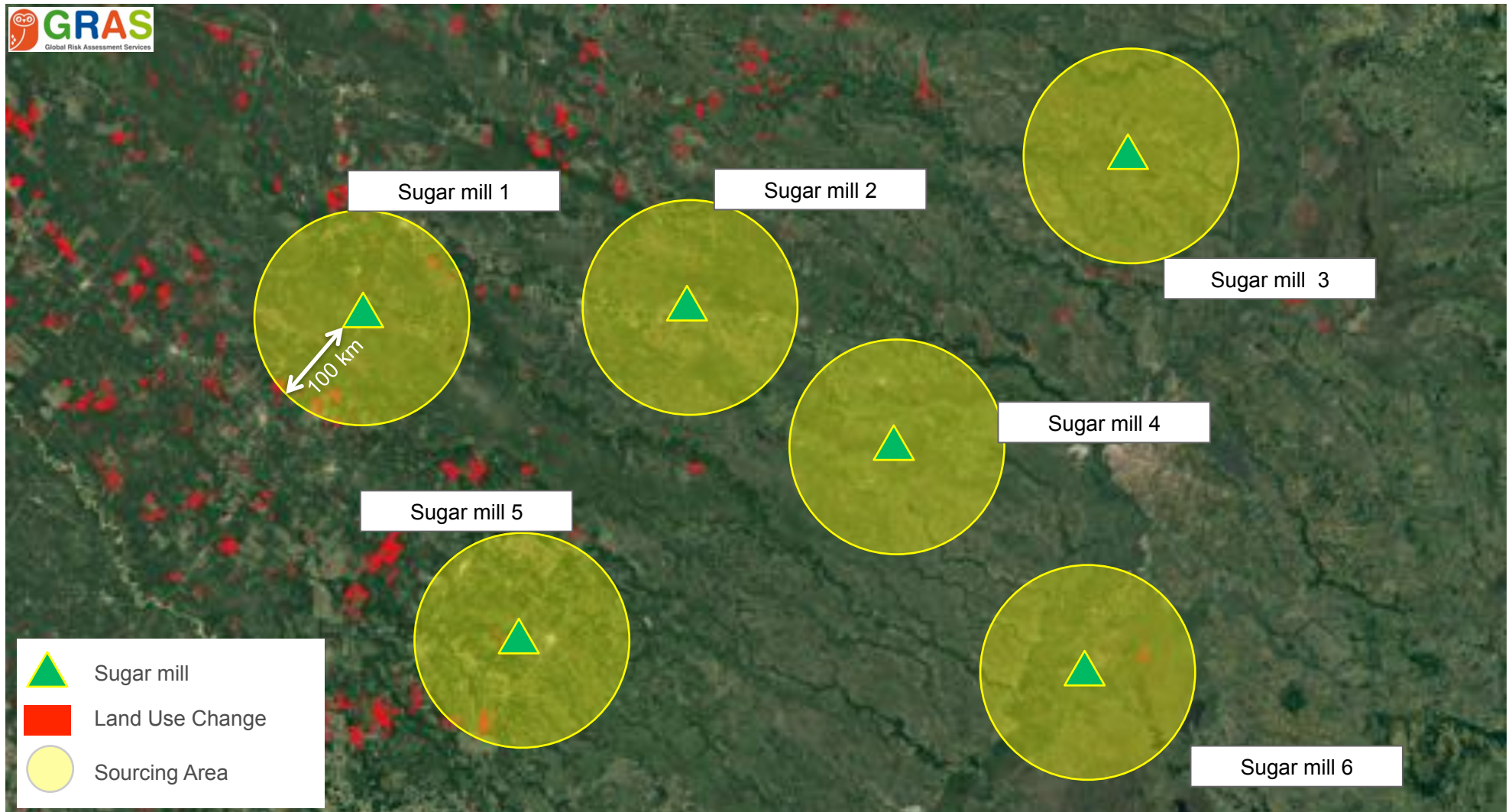
Need:

- Are my sugar mills deforestation free?
- From which farmers can the mills source sustainable feedstock?
- Which share of farmers can be **certified**?

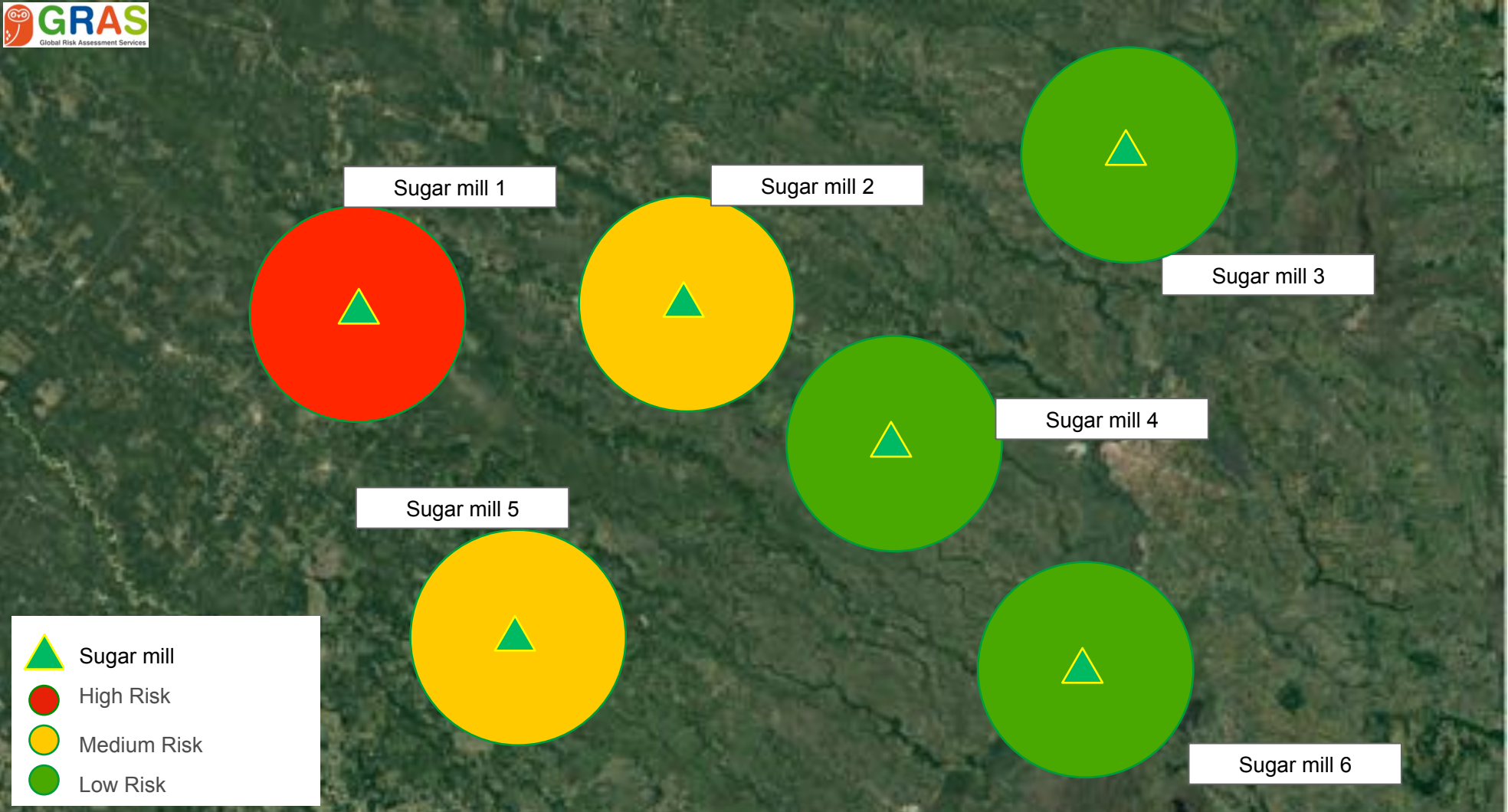
Solution:

- Analysis of mills based on a sourcing radius and/or individual farms
- Ranking of mills according to their sustainability risk

If only the locations of sugar mills are known, GRAS analyzes defined sourcing areas in a cost-efficient way



The analyzed sourcing areas can be ranked based on the sustainability risk. This helps to identify hotspot areas



Case Study: Palm oil company

Analysis of plantations

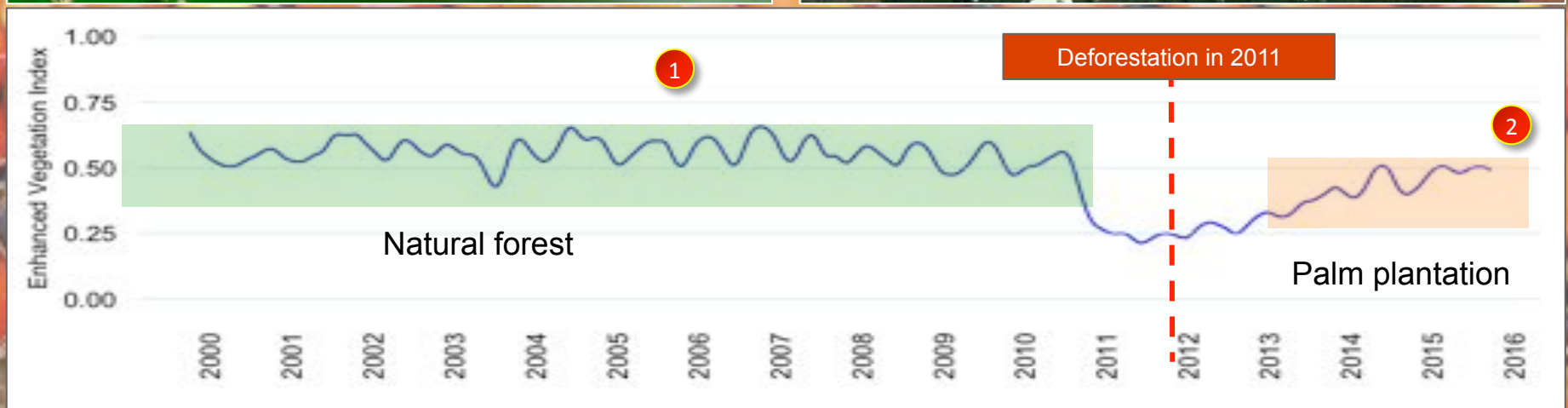
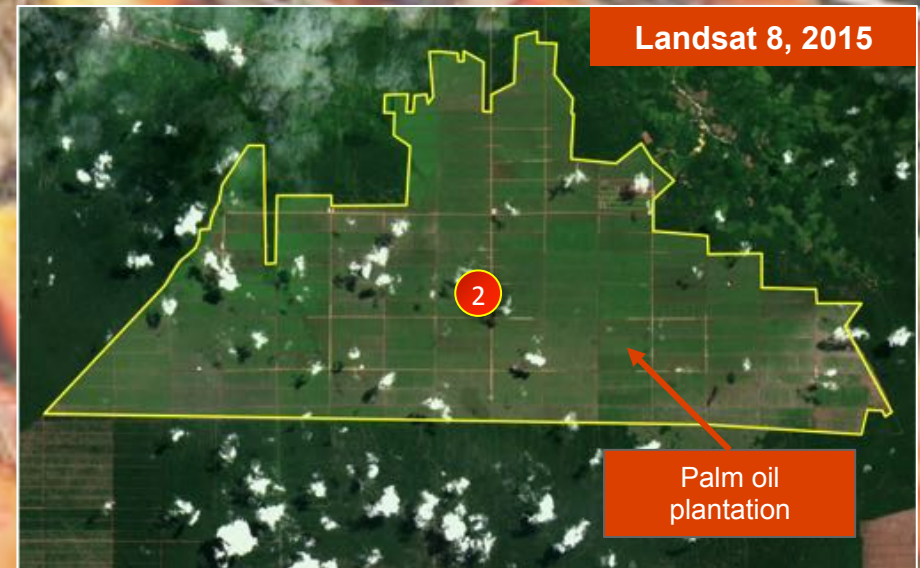
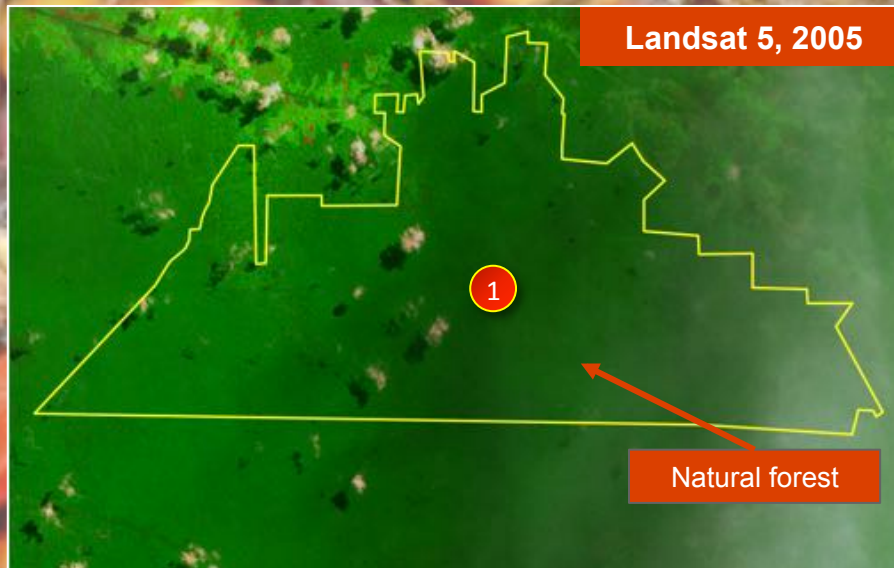
Need:

- Are my plantations deforestation free? Was there any replanting?
- Is the plantation located in HCV areas?
- Is the plantation suitable for **certification**?
- Evidence for auditor

Solution:

- Detailed land use change assessment over time for each plantation
- Check if plantation overlaps with HCV areas

On plantation level GRAS conducts detailed assessments to identify date and type of LUC



A background photograph showing several people in a rural setting, likely a coffee plantation. In the foreground, a person wearing a grey shirt and dark pants is working with a large pile of coffee beans. Other people are visible in the background, some wearing hats and light-colored shirts, engaged in similar activities. The scene is outdoors with trees and vegetation.

GRAS supports the certification of smallholder production with its innovative Landscape Approach

The Landscape Approach includes training and capacity building, certification and monitoring, leading to:

- ✓ Secure integration of smallholder production into sustainable supply chains
- ✓ Reduction of deforestation
- ✓ Improved agricultural practice
- ✓ Stable living standards of farmers

Thank you

Contact us

Dr. Jan Henke

GRAS Global Risk Assessment Services GmbH

Hohenzollernring 72

D-50672 Köln

Tel.: +49-221-50802030

Fax: +49-221-50802099

henke@gras-system.org

www.gras-system.org

Case Study: Coffee plantations

Analysis and management of supply base

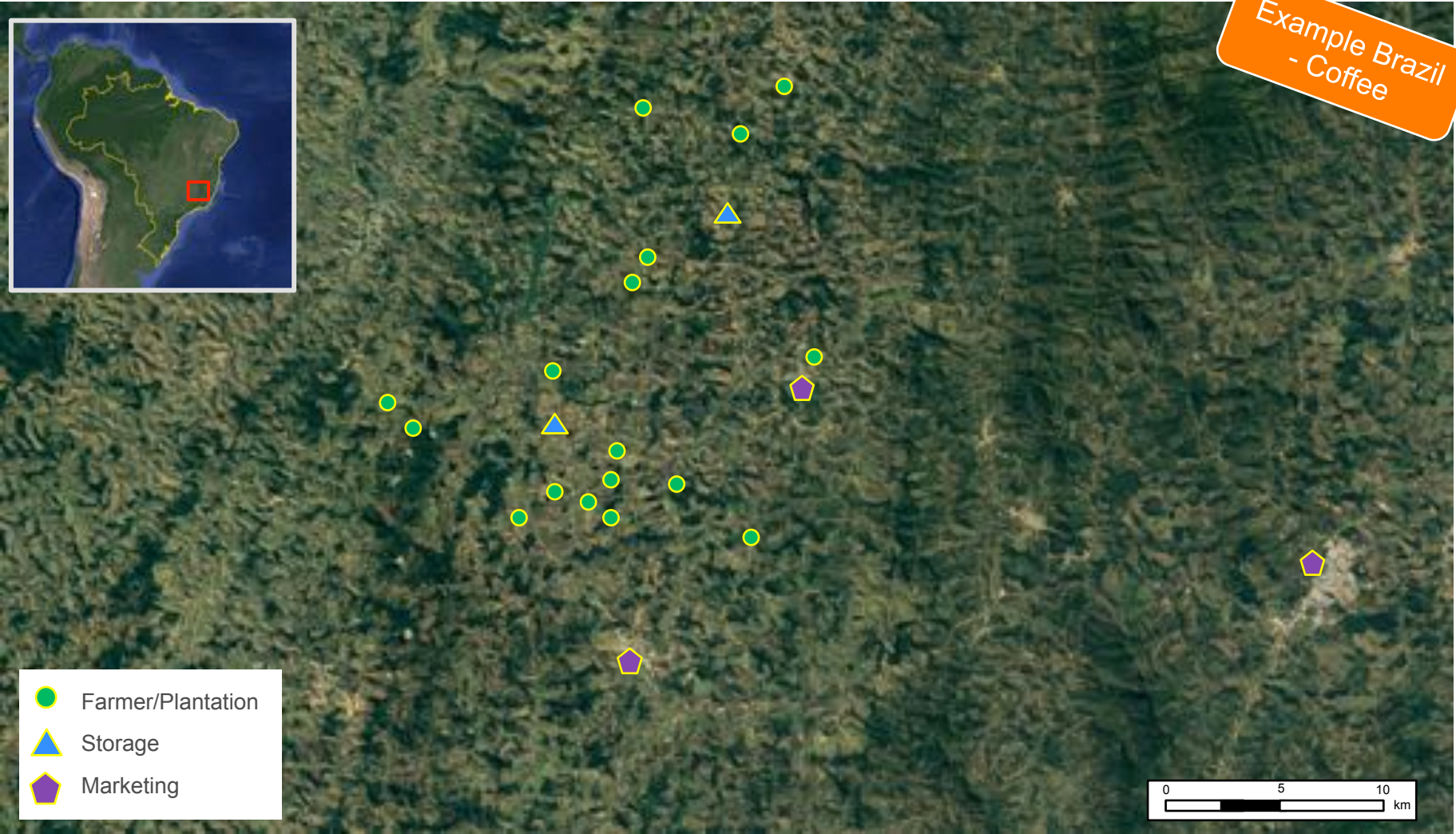
Need:

- Can deforestation be identified within the production areas of the suppliers?
- How can I select and exclude farmers?

Solution:

- Provide detailed information on deforestation and protected areas per farm and land parcel
- Provide ranking of farmers according to sustainability criteria
- Work with farmers on improvements

GRAS can be used to efficiently analyze and manage a large number of suppliers



Producers can be ranked according to their sustainability risk. High risk farmers can be analysed further in more detail

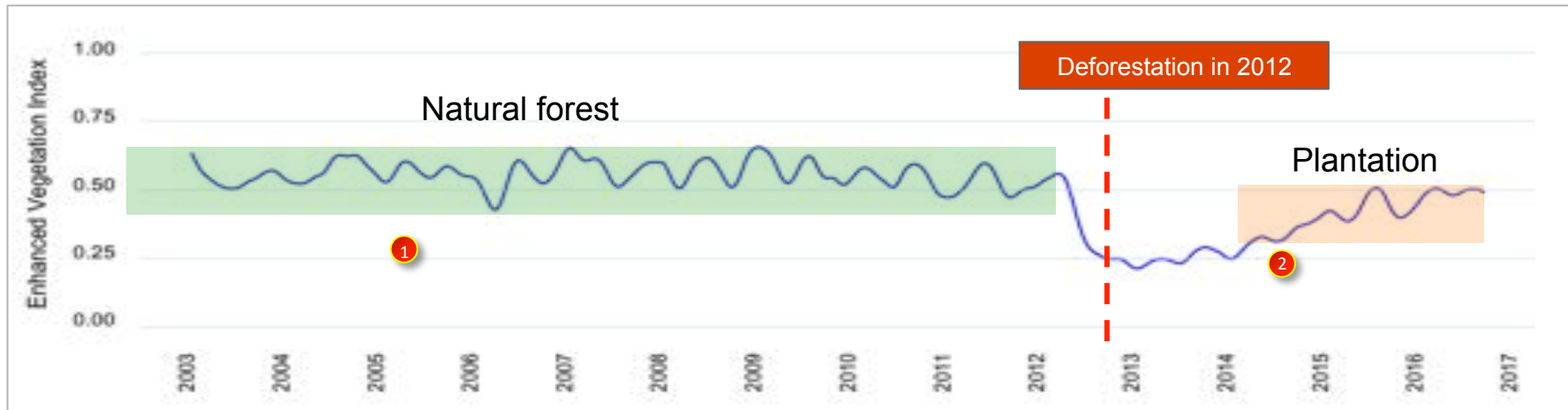
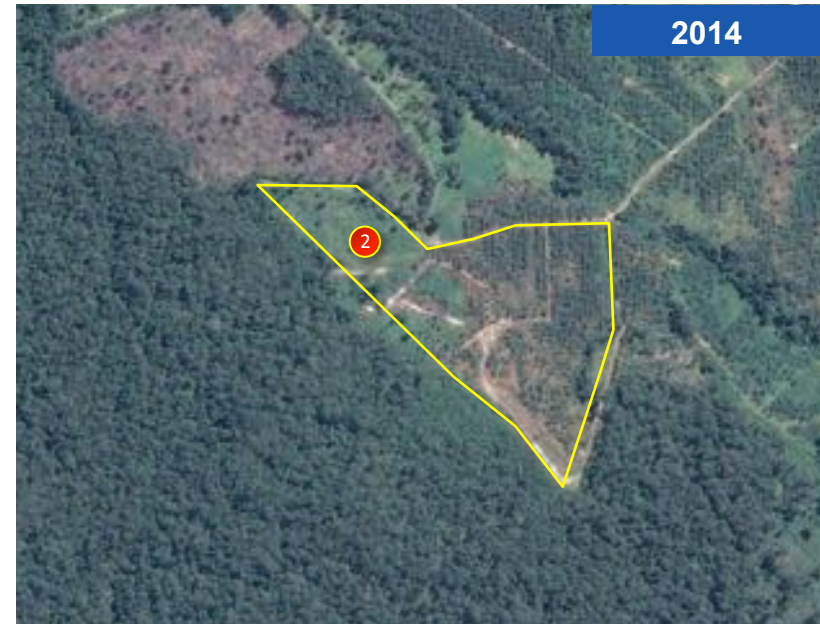
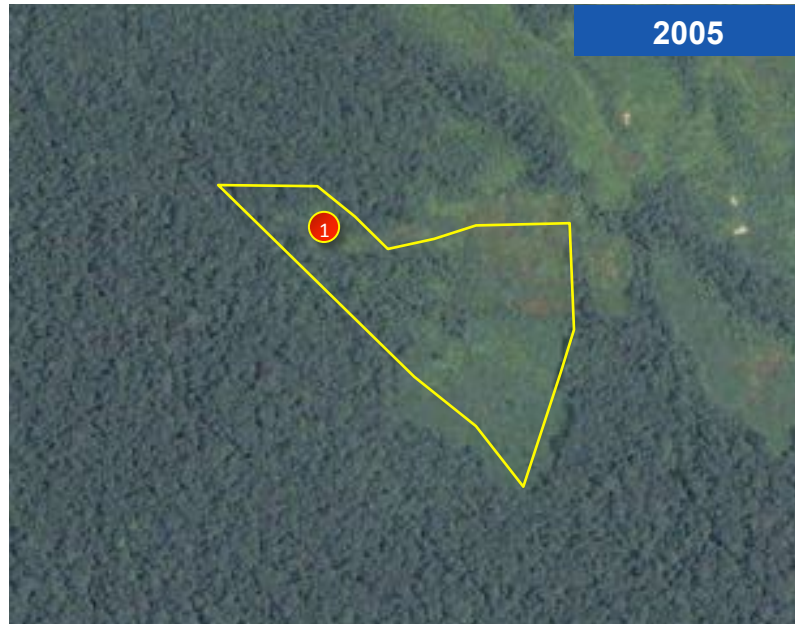
Rank	Producer	Biodiversity Risk Factor	Land Use Change Risk Factor	Carbon Risk Factor	Social Risk Factor	GRAS Index
1	Farmer 12	0.00	0.00	0.10	0.15	0.11
2	Farmer 568	0.00	0.00	0.11	0.15	0.11
3	Farmer 369	0.01	0.00	0.09	0.15	0.12
4	Farmer 85	0.00	0.01	0.10	0.15	0.13
5	Farmer 584	0.02	0.06	0.20	0.15	0.24
6	Farmer 128	0.04	0.05	0.21	0.20	0.26
7	Farmer 334	0.00	0.11	0.22	0.20	0.27
...
225	Farmer 477	0.08	0.13	0.19	0.15	0.36
226	Farmer 54	0.12	0.09	0.20	0.23	0.37
227	Farmer 365	0.13	0.14	0.15	0.22	0.38
...
613	Farmer 114	0.48	0.33	0.59	0.15	0.67
614	Farmer 554	0.52	0.29	0.40	0.23	0.69

Detailed analysis recommended for farms with high risk



- ✓ Mapping and monitoring of risk clusters within the supply base
- ✓ Support of certification processes
- ✓ Automated reports

For specific land parcels, EVI time series and satellite imagery can be used to verify Land Use Change activities on specific spots



Suppliers and partners along the supply chain can be securely managed with the customized GRAS Company Dashboards

Example Brazil - Coffee

Sustainability Analysis

Producer 48

Location: Example town
 Size (ha): XXXX
 Tons of Coffee / year: XXXX

GRAS Sustainability Analysis

Biodiversity:
 No protected areas: ✓

Land Use:
 No deforestation: ✓
 No steep terrain: ✓
 No pesticides: ✓
 No fragile soils: ✓

Emissions / t of Coffee
 Processing: XXXX
 Transportation: XXXX

Coffee delivered to
 - Collector 1 [\(more information\)](#)

Coffee Mapping

Sustainability Report

Search Operation

Search operation

Select unit or click on map:

Coffee Producer
 Coffee Collector
 Coffee Trader
 Processing Unit
 Warehouse

Coffee Collector

Collector 1
 Collector 2
 Collector 3

Operation

Select operation or click on map:

Coffee Producers
 Coffee Collector
 Trader

■ Deforestation
■ Conversion of Natural Vegetation

✓ = Criteria fulfilled — = Criteria not fulfilled

Case Study: Canola trader

Analysis of farms with a defined sourcing radius

Need:

- Can deforestation be identified in the sourcing areas of the farmers I am sourcing from?
- How can I select and exclude farmers?

Solution:

- Provide detailed information on deforestation and protected areas per farm
- Provide ranking of farmers according to sustainability criteria
- Work with farmers on improvements

GRAS analyzed the sourcing radius of farmers according to deforestation, grassland conversion or protected areas

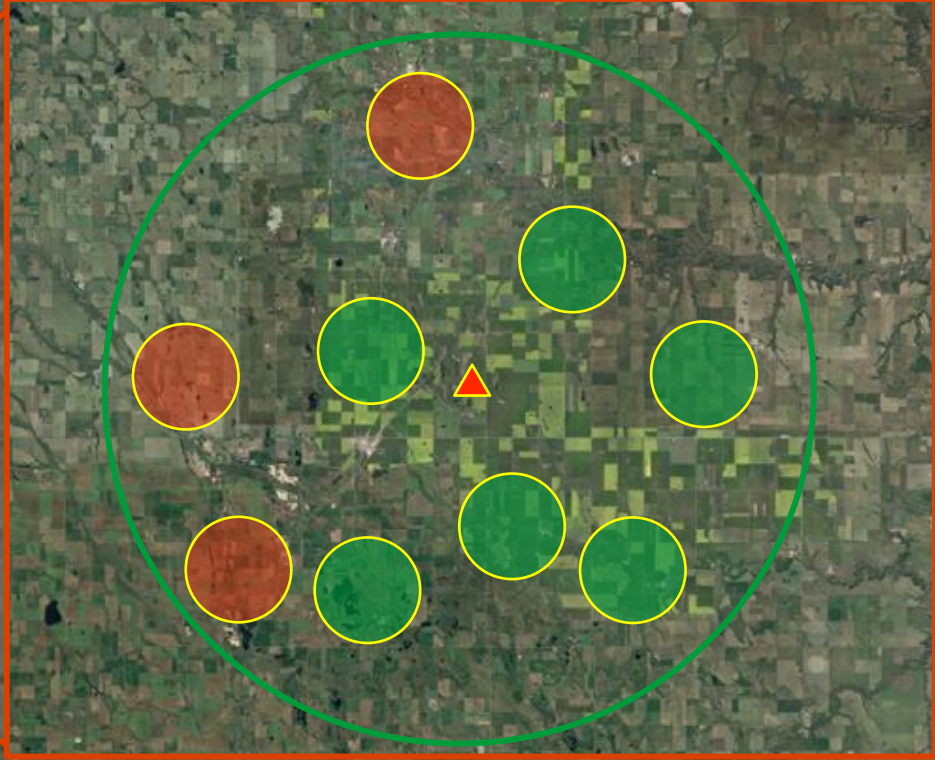
Fictive example only

© GRAS GmbH





Country elevator 1



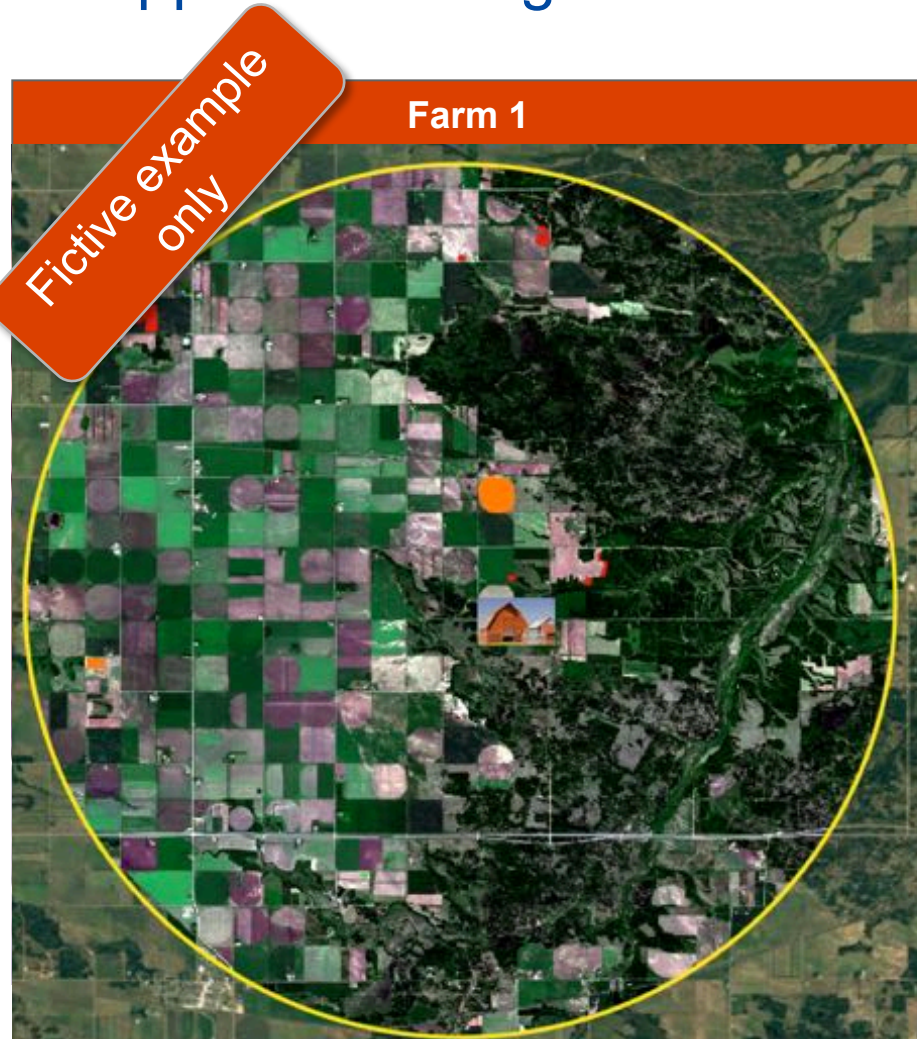
Supplying farmers to country elevator 1



Legend

-  Country elevator
-  Sourcing area
-
-  Farmers sourcing area linked to deforestation/ grassland conversion
-  Farmers sourcing area not linked to deforestation/ grassland conversion

GRAS automatically created reports for each farm. This approach can be applied to a huge amount of farmers



Summary		
Producer	Example Producer	
Address	Example Address	
Central Coordinates	Longitude, Latitude	
Total Area	314000 ha	
Cropland Area in 2007	156000 ha	
Deforestation	21 ha	X
Grassland Conversion	0 ha	✓

Farms can be ranked according to their sustainability risk. Only high risk farmers require further analysis

Rank	Producer	Biodiversity Risk Factor	Land Use Change Risk Factor	Carbon Risk Factor	Social Risk Factor	GRAS Index
1	Farmer 12	0.00	0.00	0.10	0.15	0.11
2	Farmer 568	0.00	0.00	0.11	0.15	0.11
3	Farmer 369	0.01	0.00	0.09	0.15	0.12
4	Farmer 85	0.00	0.01	0.10	0.15	0.13
5	Farmer 584	0.02	0.06	0.20	0.15	0.24
6	Farmer 128	0.04	0.05	0.21	0.20	0.26
7	Farmer 334	0.00	0.11	0.22	0.20	0.27
...
225	Farmer 477	0.08	0.13	0.19	0.15	0.36
226	Farmer 54	0.12	0.09	0.20	0.23	0.37
227	Farmer 365	0.13	0.14	0.15	0.22	0.38
...
613	Farmer 114	0.48	0.33	0.59	0.15	0.67
614	Farmer 554	0.52	0.29	0.40	0.23	0.69

Detailed analysis recommended for farms with high risk



- ✓ Mapping and monitoring of risk clusters within the supply base
- ✓ Support of certification processes
- ✓ Automated reports

Case Study: Financial institution

Sustainability due diligence

Need:

- Investments only in sustainable farms
- Farms must be deforestation free
- Efficient farm selection and monitoring process

Solution:

- Cost-efficient semi-automated analysis of all farms according to the sustainability criteria
- Detailed assessment for high risk farms
- Provide investment decision support