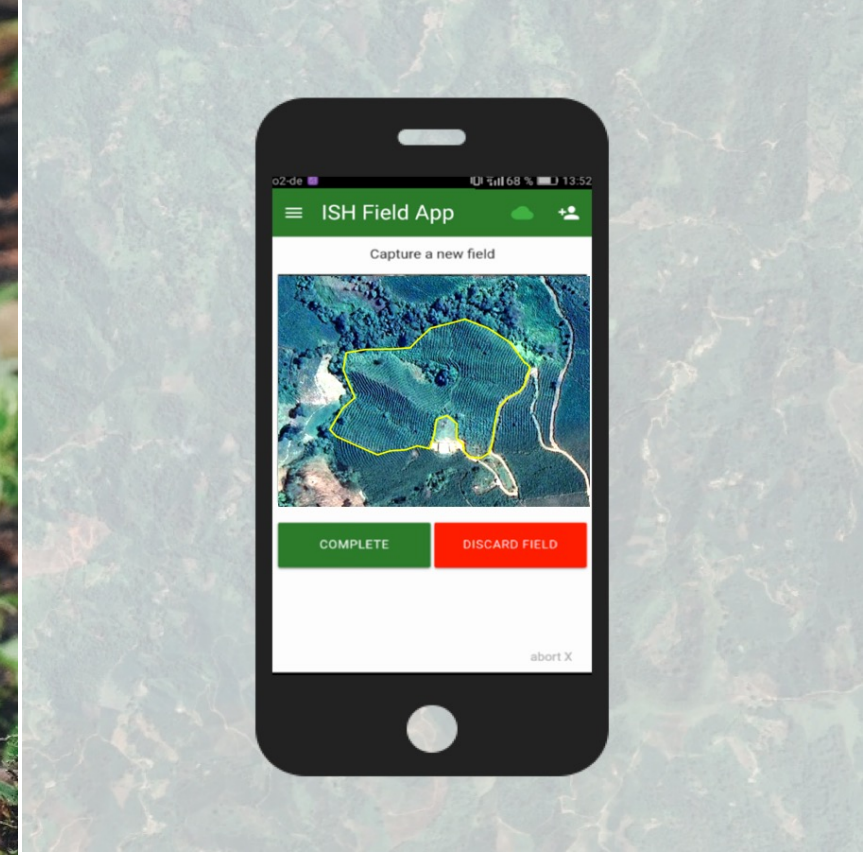




Innovative technologies to map deforestation risk and integrate supply chains traceability of Coffee growers

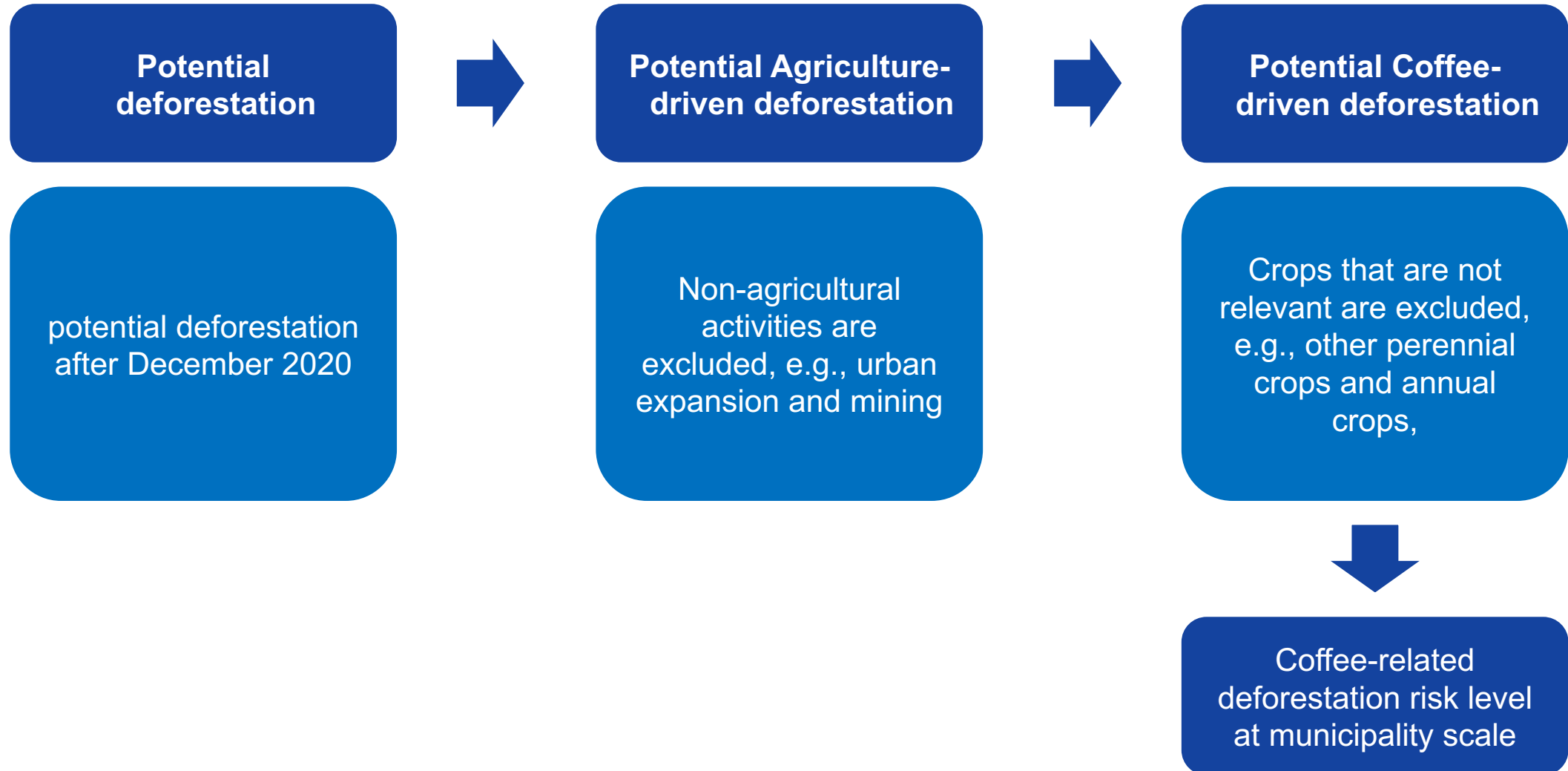
ECF Meets Supply Chains Mapping Service Providers

GRAS solutions can help to comply with the EC proposal for a regulation on deforestation-free products

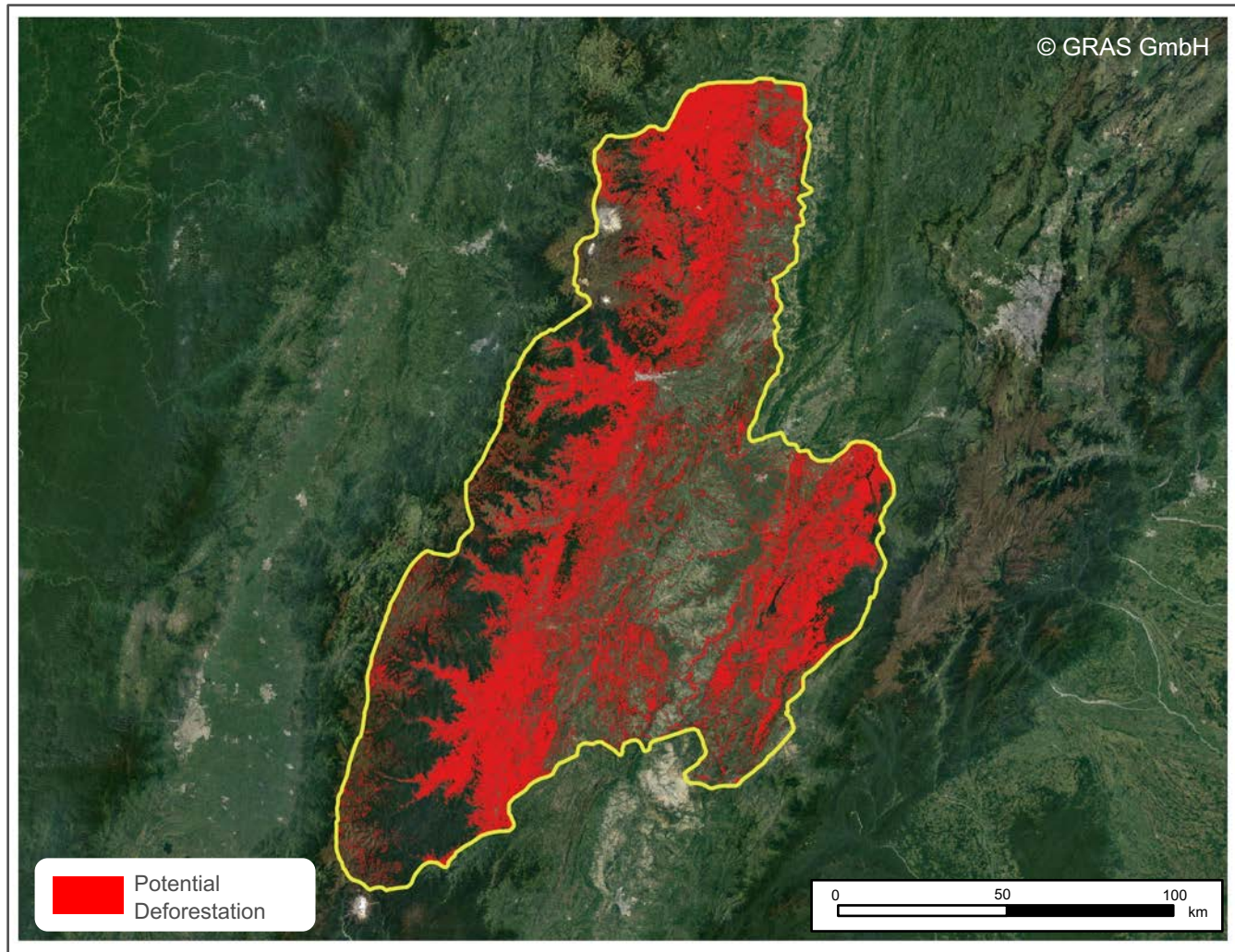
Risk Assessment Methodology

Growers data collection,
deforestation verification and
treaceability

Methodology of deforestation risk mapping – processing steps



Methodology of deforestation risk – gross potential deforestation



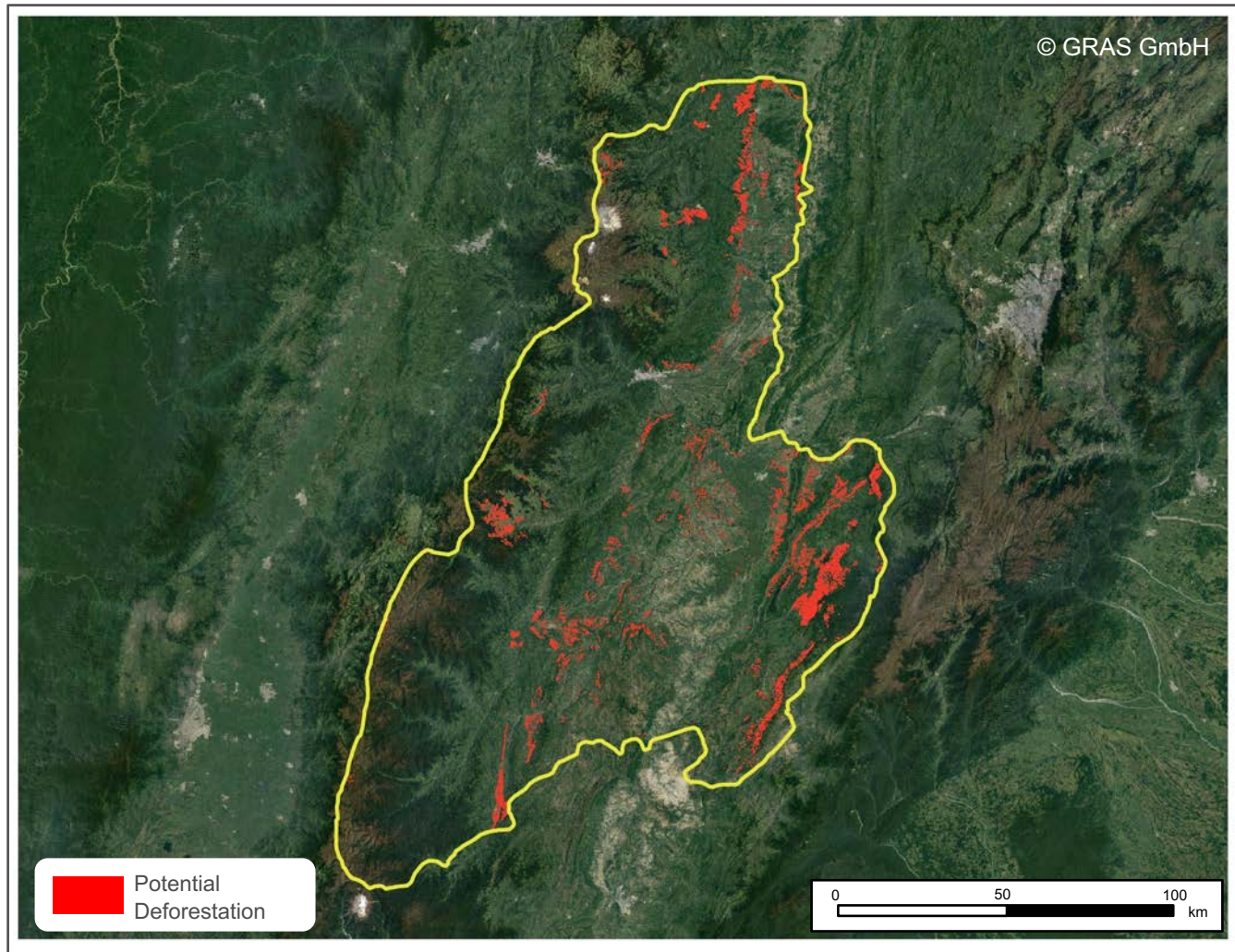
Source: Tropical Moist Forests; provided by the European Commission Joint Research Centre (EC JRC)

Potential deforestation Until today

Total potential deforestation	21,185 km ² (91 %)
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- Potential deforestation (marked red) has been identified in Tolima, Colombia
- The shown areas include all potential deforestation after 1990 until 2020 identified in the assessment area regardless of the land use category
- This also includes replanting activities

Methodology of deforestation risk – coffee-driven potential deforestation



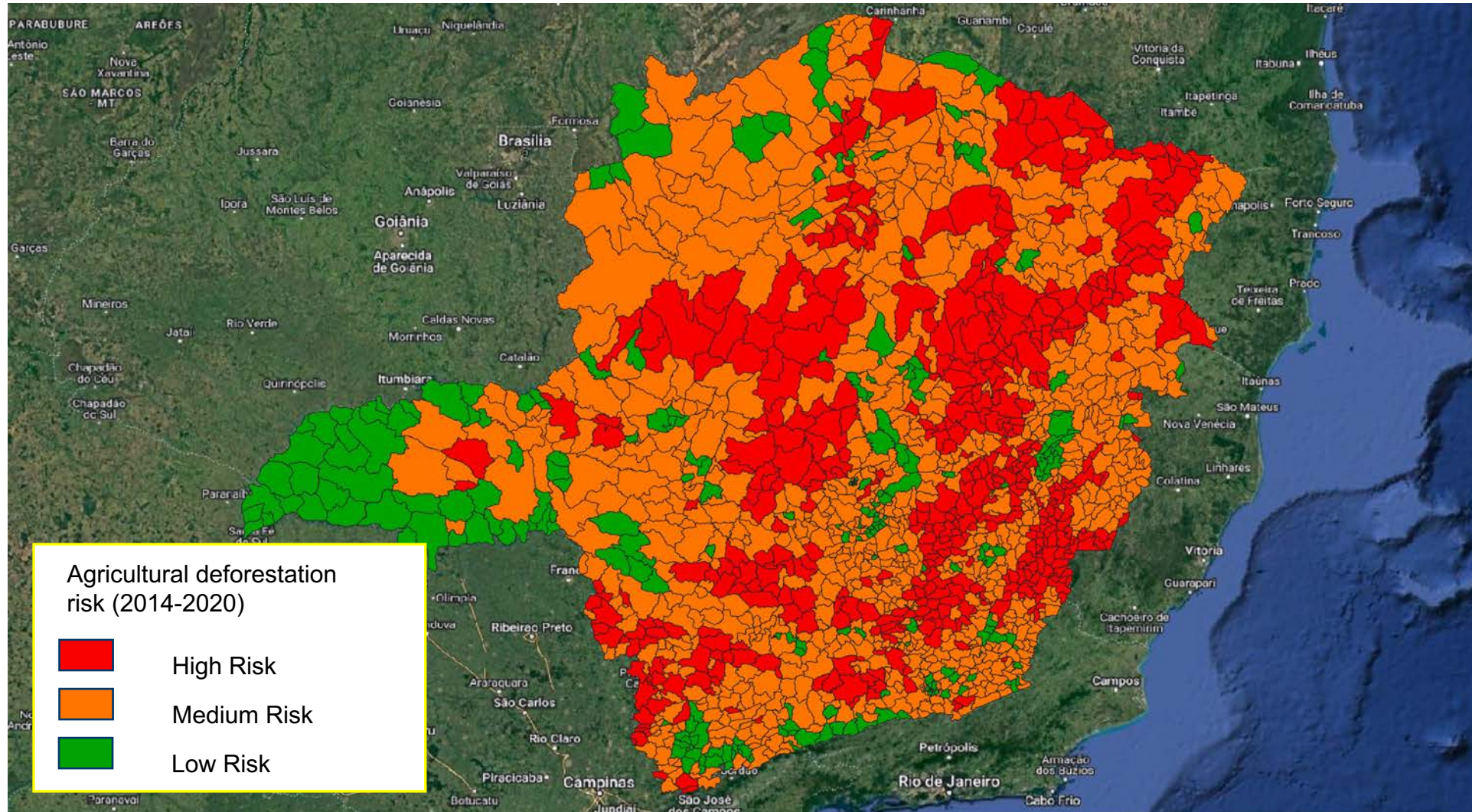
Potential coffee-driven deforestation

Total potential deforestation	28 km ² (0.1 %)
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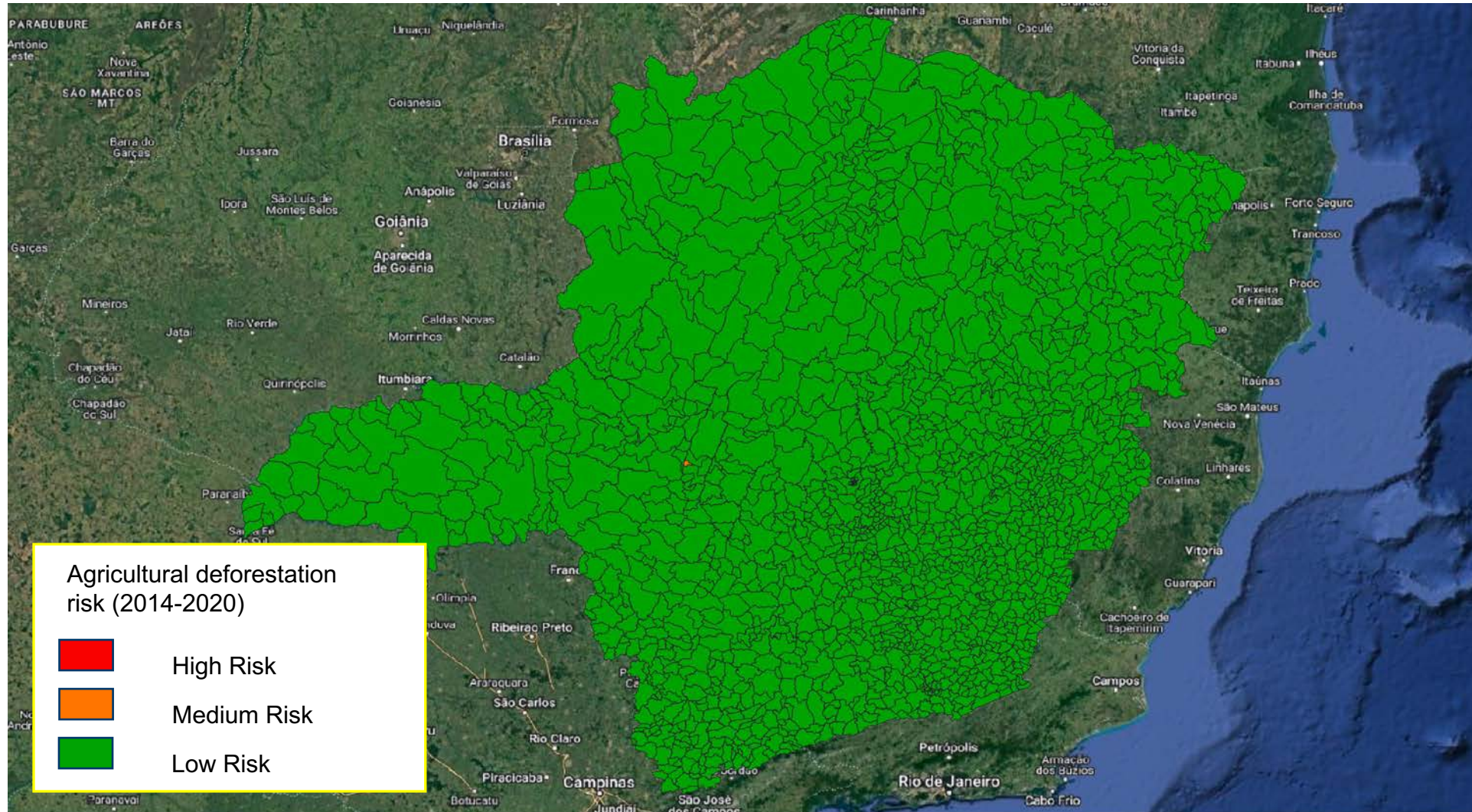
- Most of the deforestation is small-scale and scattered over the assessment area
- The shown areas only include potential deforestation on coffee related areas
- The perennial land cover categories excluding (e.g., palm, timber, acacia) is implemented to focus the deforestation on coffee related areas

Source: Tropical Moist Forests; provided by the European Commission Joint Research Centre (EC JRC)

Deforestation risk could be assessed at sub-national scale, e.g., Minas Gerais

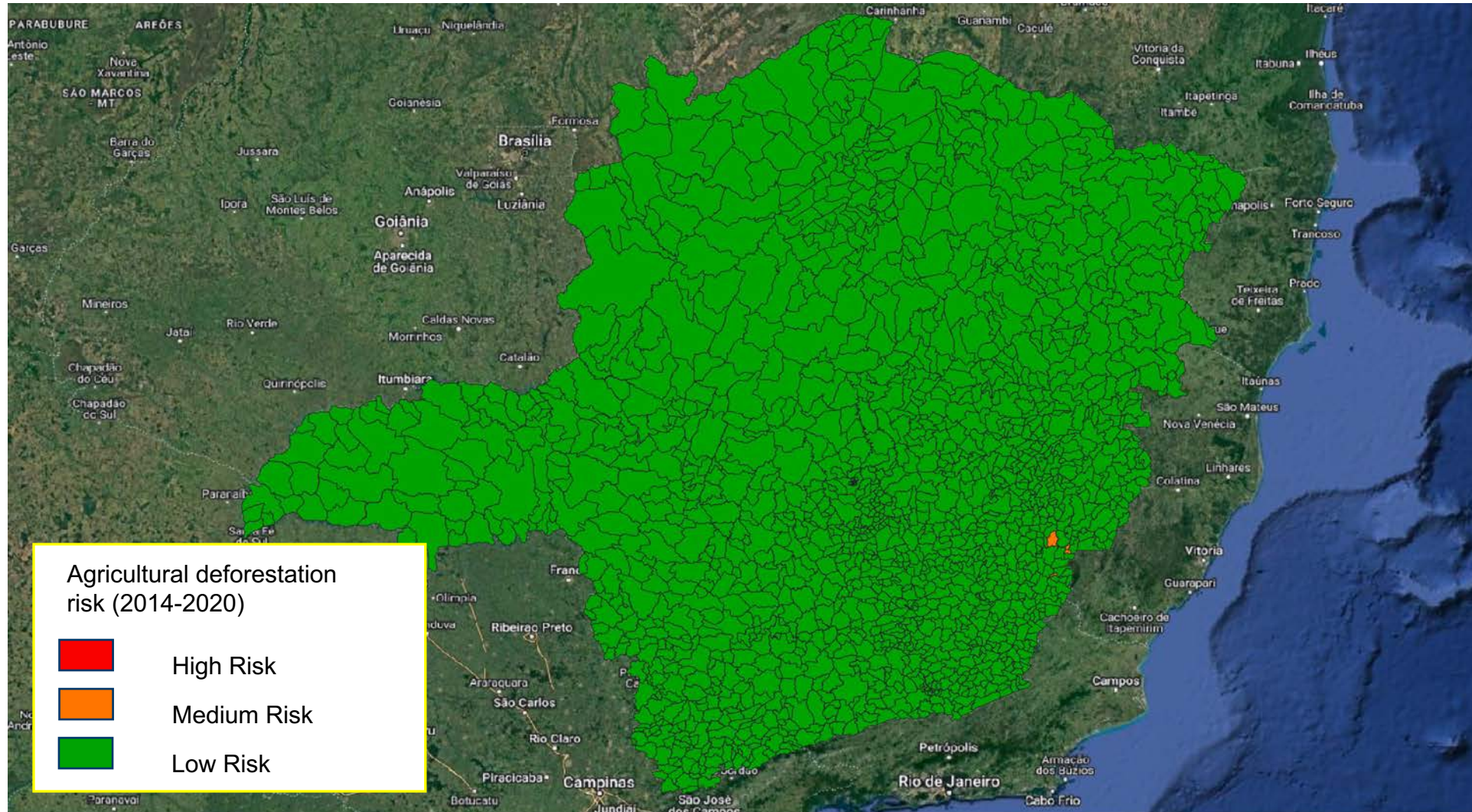


Soybean-driven deforestation risk



area more than

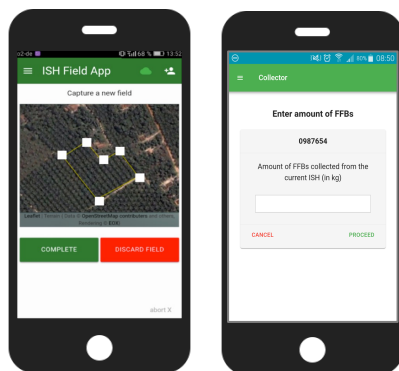
Coffee-driven deforestation risk



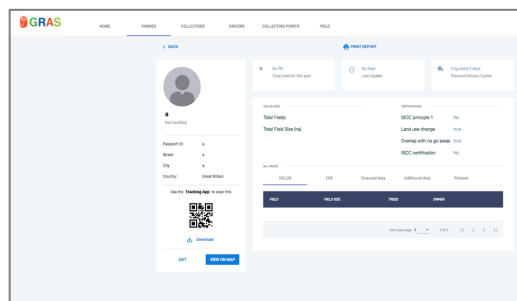
area more than

GRAS offers farmer data collection, deforestation verification and integration in a traceability software

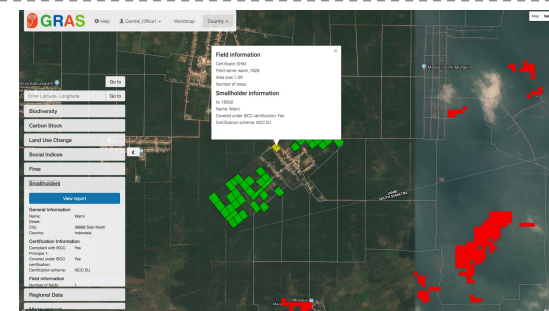
Mobile Apps and Databases



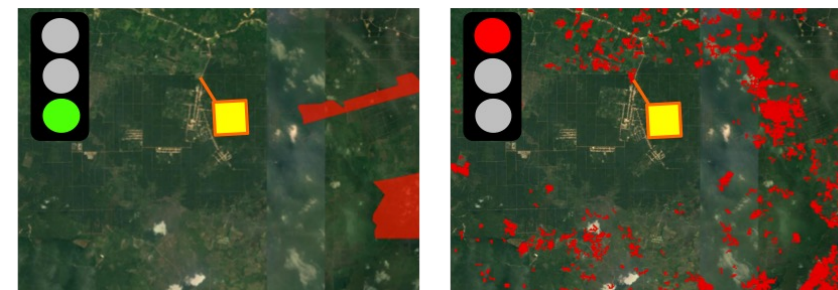
Traceability Dashboard



Visualize and manage farmer fields



Deforestation Assessment



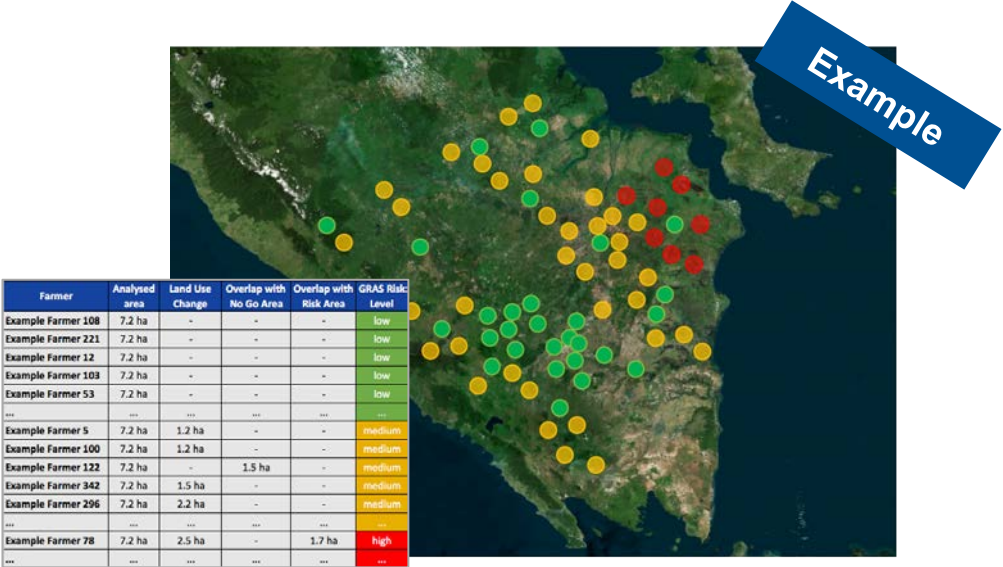
Produce reports

Basic Data				Period of Assessment: October 2018
Name of the Central Office: Example Name				
Address: Example Street				
City: Example City				
Country: Indonesia				
Overview of delivered FFBs				
Collecting Tour ID	Date and time of FFB delivery	Name of the POM	Number of own certified ISH involved in the collection	FFBs measured at the POM (Kg)
477345	1 Oct. 2018 - 11:45	POM 1	1	2000
575846	15 Oct. 2018 - 12:00	POM 1	2	2500
345345	24 Oct. 2018 - 12:15	POM 2	1	8000
TOTAL				12500
Overview of collecting tours				
Collecting Tour ID	Date and time of FFB delivery	Name of the POM	ISH's NIK	FFBs measured at the POM (Kg)
477345	1 Oct. 2018 - 11:45	POM 1	8974223132	400
Collecting Tour ID	Date and time of FFB delivery	Name of the POM	ISH's NIK	FFBs measured at the POM (Kg)
575846	15 Oct. 2018 - 12:00	POM 1	8974223132	350
	15 Oct. 2018 - 12:00	POM 1	4831289656	500

Zero-deforestation compliance assessment for growers in high risk regions

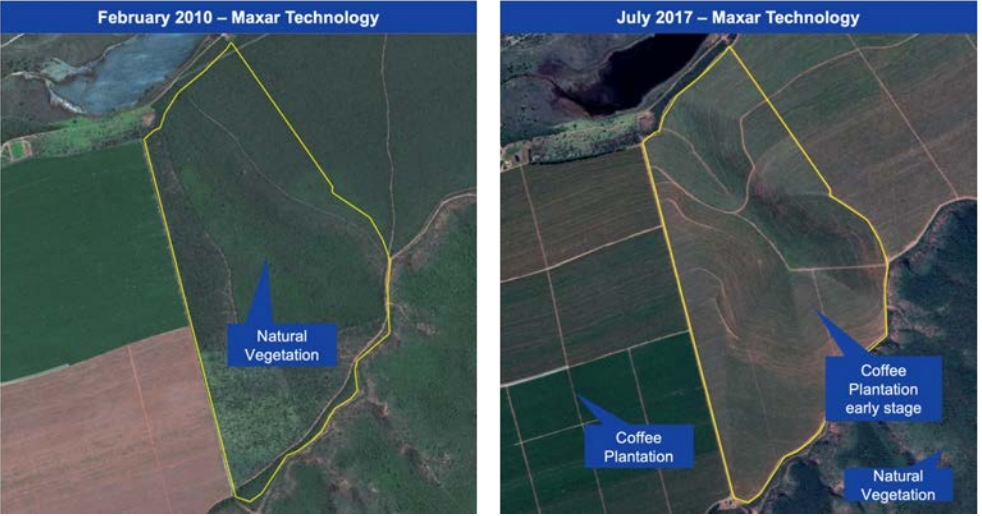
Point coordinates

- Rough estimation of location
- Area size based on questionnaire or other secondary information
- Check deforestation and protected areas within a buffer around the coordinate

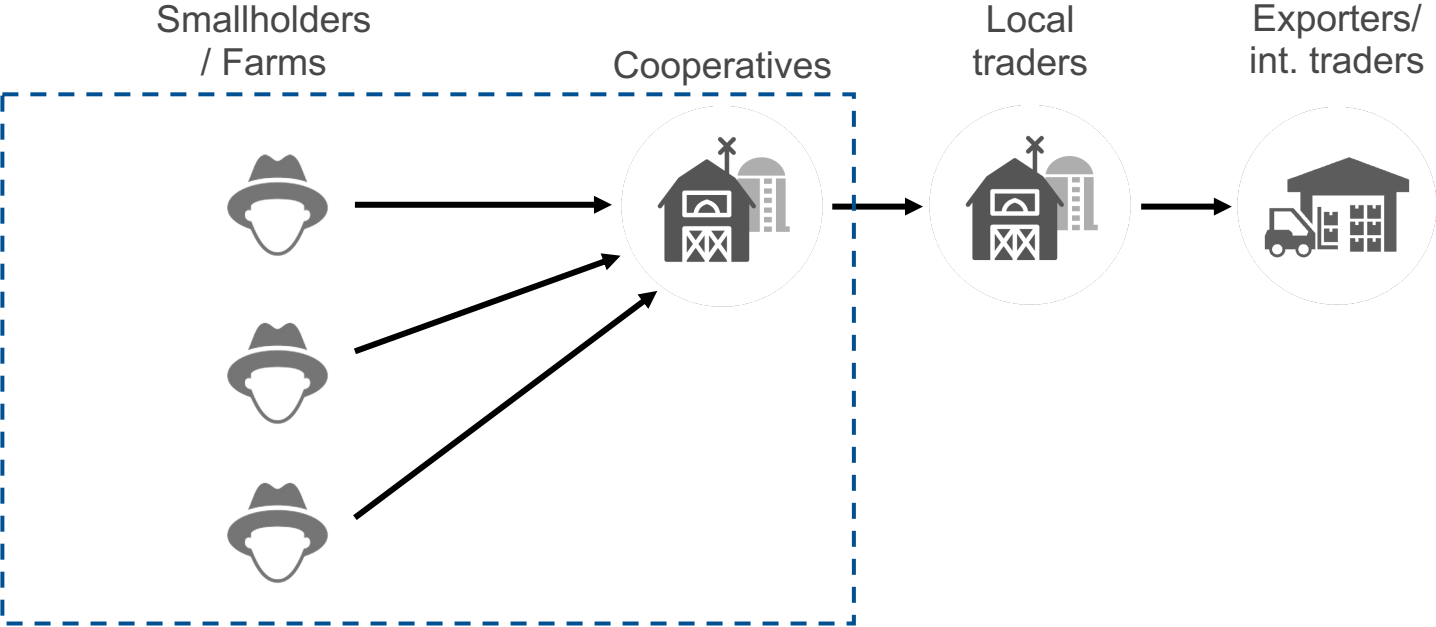


Polygons

- Determination of field size
- Identify exact location and shape of fields
- Check deforestation and protected areas within the field polygon
- Yield estimations can be conducted for each field



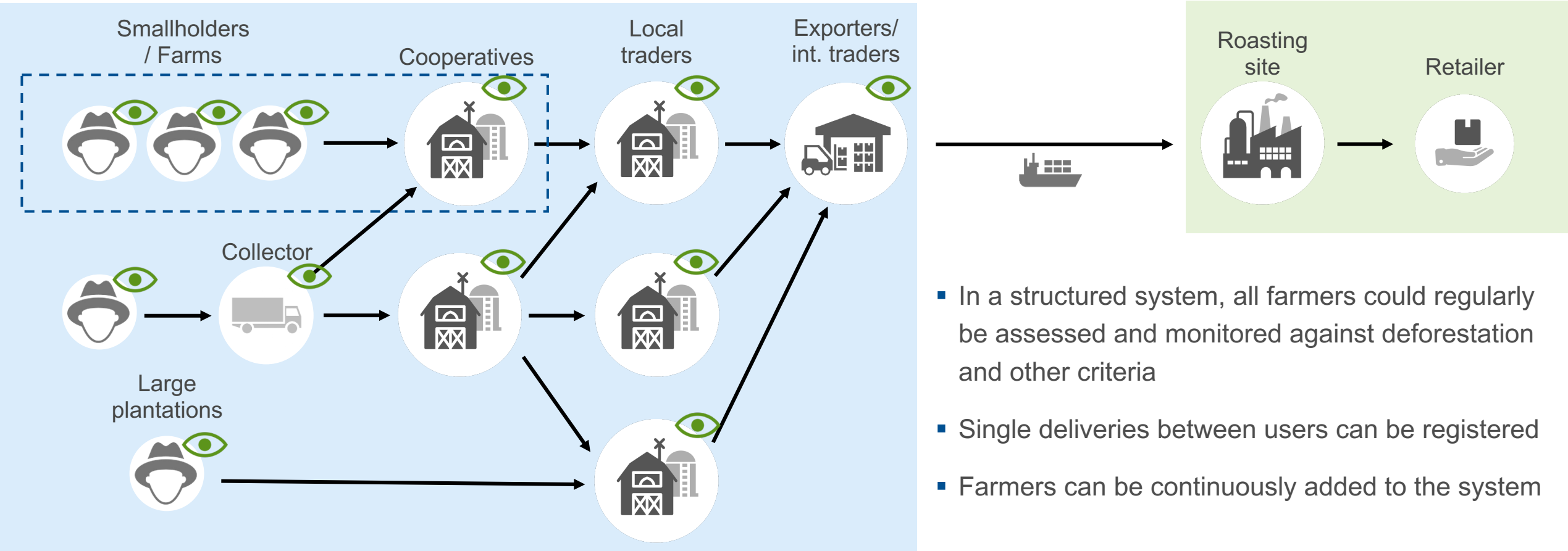
In simple scenarios, information on the single farmer fields can be transferred along the supply chains and aggregated for e.g., shipping container



One 20-foot-container					
Local Trader	Cooperative	Farm ID	Field ID	Deforestation-free	Quantity
Trader1	Coop1	Farm1	Field1	Yes	100 kg
Trader1	Coop1	Farm1	Field2	Yes	200 kg
Trader1	Coop1	Farm2	Field1	Yes	120 kg
Trader1	Coop1	Farm3	Field1	Yes	150 kg
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
Total					21,6

In a structured system all farmer fields are verified against deforestation and other criteria and all deliveries are registered along the supply chains

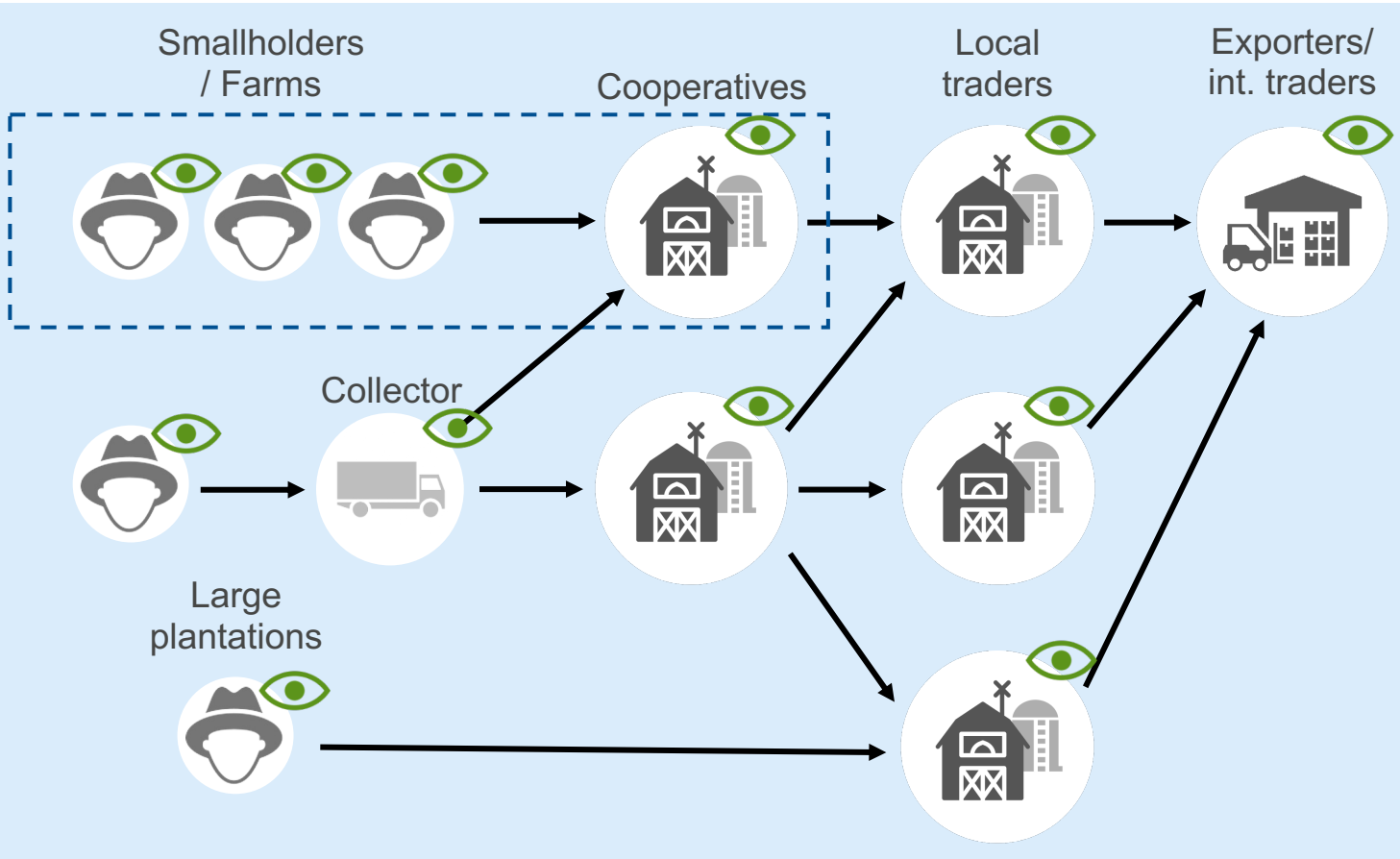
Simplified supply chain



- In a structured system, all farmers could regularly be assessed and monitored against deforestation and other criteria
- Single deliveries between users can be registered
- Farmers can be continuously added to the system

While information for each container will only include the direct supplier of coffee, the deforestation-free claim is ensured by the system

Simplified supply chain



One 20-foot-container

Local Trader	Cooperative	Deforestation-free	Quantity
Trader1	Cooperative1	Yes	2.2 tons
Trader1	Cooperative2	Yes	3,1 tons
Trader2	Cooperative3	Yes	4,3 tons
....			
Total			21,6 tons

- Only information on each of the last direct suppliers will be available for each container
- The system will automatically ensure that coffee is not related to deforestation

Discussion points

- Definition of deforestation, forest disturbance and minimum deforestation area
- Developing and testing sub-national deforestation risk assessment
- Definition of countries/regions of interests and baseline mapping
- Impact on smallholders that could be excluded from global supply chains e.g., in Africa
- The role of certification systems (e.g., 4C) and third-party verifiers



Many thanks for your attention!

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