# **ARIA**: a New GRAS Tool for an Automated ISCC Principle 1 Risk Assessment

Mohammad Abdel-Razek

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# Currently, there is no harmonised method for the ISCC system users to verify Land Use Change (LUC), leading to involvement and support from ISCC staff

**A system user indicated in the ISCC Checklist, Procedure that Land Use Change (LUC) has occurred**

| 00.07.06 | Did land use change take place after January 2008? <br><br> If LUC after 2008 took place, please provide a detailed explanation specifying how compliance with iSCC was verified (evidence should include e.g. remote-sensing technology, pictures of the on-site visit, approach to determine land category, further tools etc.) | ☒ yes, If yes, please specify the type of land use change: <br> ☐ no <br><br> Please note that the statement should be provided in separate document |

➢ In case LUC occurred, an ISCC LUC Template needs to be filled out which often lacks crucial information and leads to a lengthy review process and/or communication chain between system users, CBs and ISCC

# A reliable LUC assessment and reporting requires multidisciplinary expertise

Examples expertise are: remote sensing, GIS, ecology, sustainability

| **Remote sensing expertise** | Mapping smallholder plantation/mixed gardens | Mapping land category (e.g. other land use, sparase forest) |
|---|---|---|
| **GIS expertise** | Creating a report with GIS data (e.g. shapefile, KMLs) | Accuracy and reliablity of available map |
| **Ecology/sustainability** | Non-biodiverse grassland/shrubland | GHG calculations ($e_{sca}$ and $e_l$) |

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# Auditors, CBs and system users are already using GRAS tool for risk assessment, but more is possible
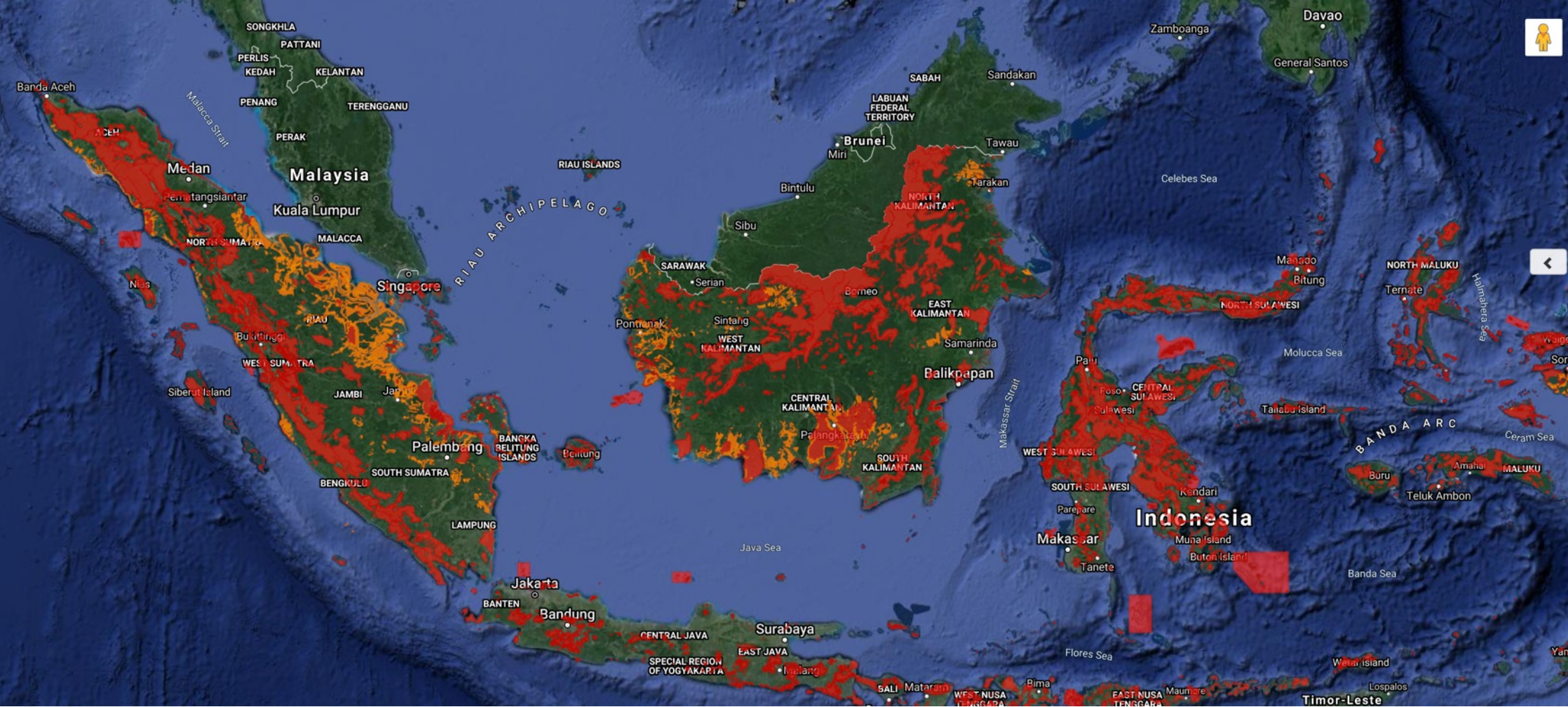
# GRAS has translated all ISCC Principle 1 criteria into geospatial datasets

**Criteria for land use change**

**Potential deforestation**
Potential deforestation after 2008
Landsat satellite images
Sentinel I& II
ALOS PALSAR

**Criteria for land with high biodiversity value**

**Primary forest & wooded land**
Primary forest,
Intact Forest Landscapes

**Nature protection areas**
Nature Reserve Area, Nature Conservation Areas

**Endangered species**
Orangutan habitats,
Tiger conservation landscapes

**High biodiverse grassland**
Grassland/ Shrubland

**Criteria for land with high carbon stock**

**Wetlands**
Global wetlands

**Forested areas**
Forest Height Map 2007
Tree Cover Density Map 2005
Forest / No-Forest Map 2007

**Criterion for peatland**

**Peat**
Peatland

**RED requirements/ISCC Principle 1**

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# With the support of ISCC, GRAS has created a RED-complaince/ISCC P1 risk assessment tool called **ARIA**
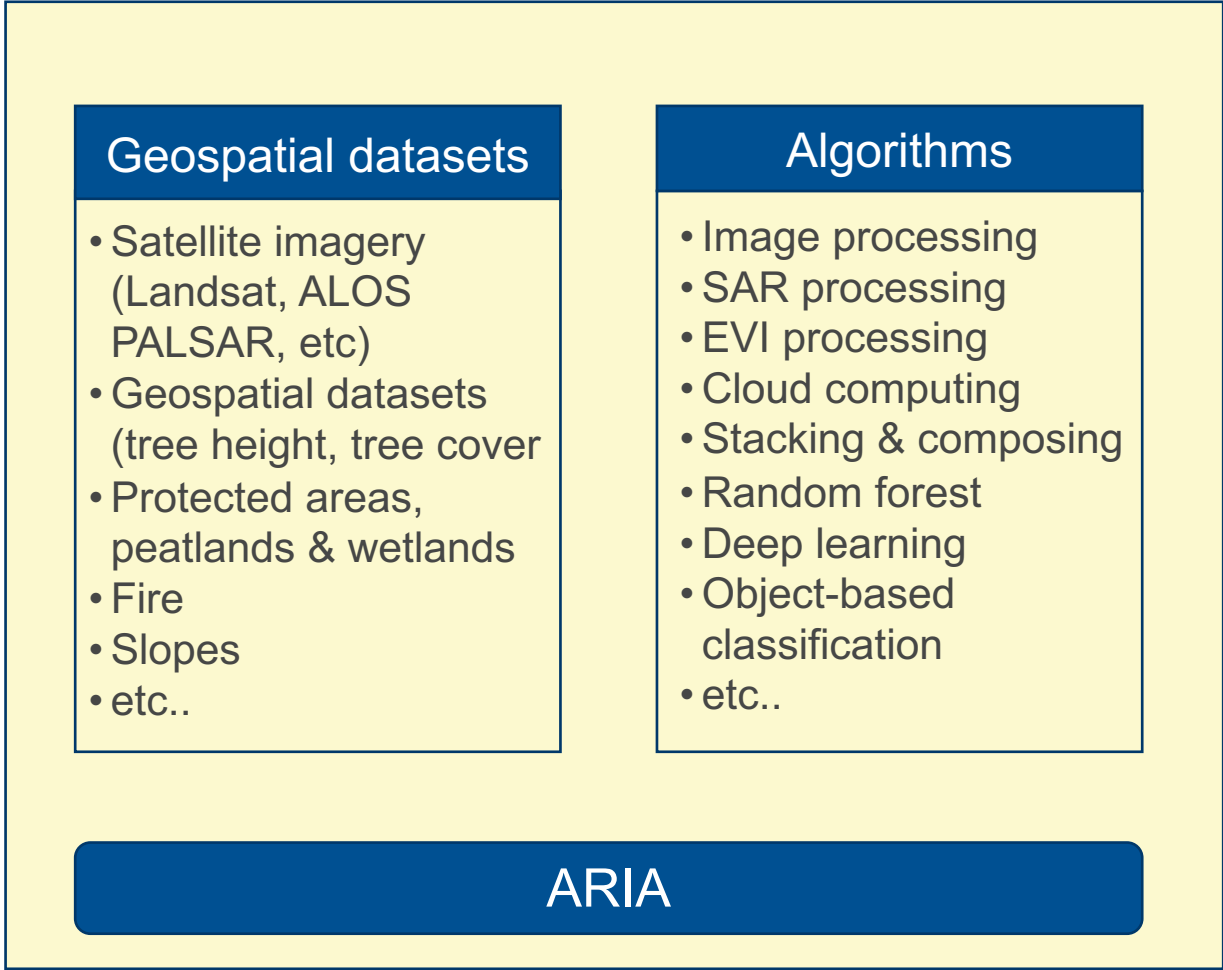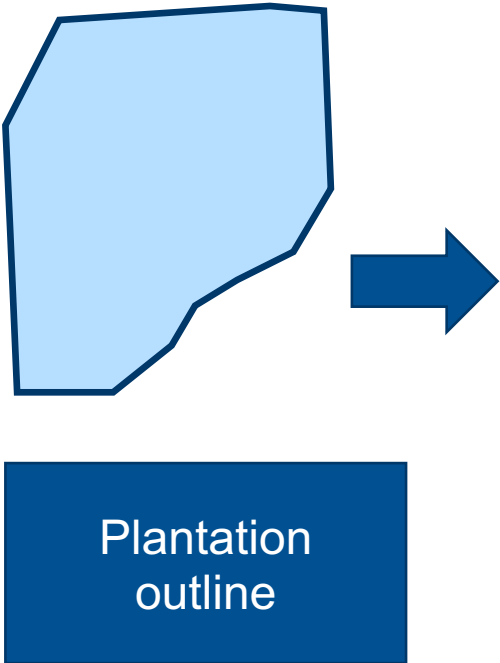
*Aria means "song" or "melody" in Italian. Its literal translation is "air," and it is a musical term that refers to an elaborate vocal solo usually found within a larger piece of music, generally an opera. Aria means "lioness" in Greek. In Persian, Aria is a gender-neutral name that means "noble." In Albanian, Ari(a) means 'treasure' or 'gold', 'of high value'.*

# ARIA: **A**utomatic **Ri**sk **A**ssessment Tool

- ARIA is a risk assessment tool for compliance with ISCC Principle 1 and in general with EU Renewable Energy Directive (RED)

- ISCC system users can use this tool to generate fully automated, comprehensive risk reports at the plantation level

- ARIA not limited to ISCC, but also could be used for any RED voluntary certification scheme
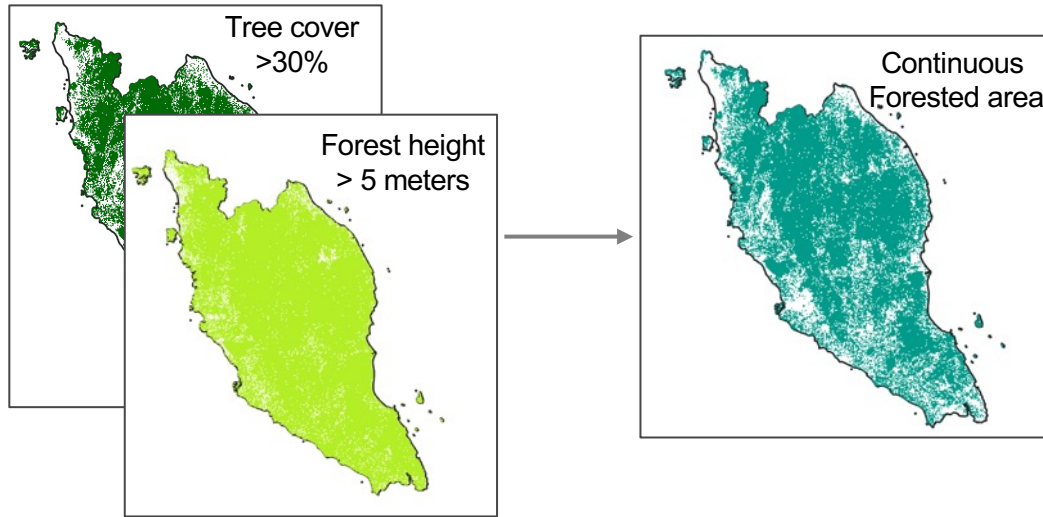
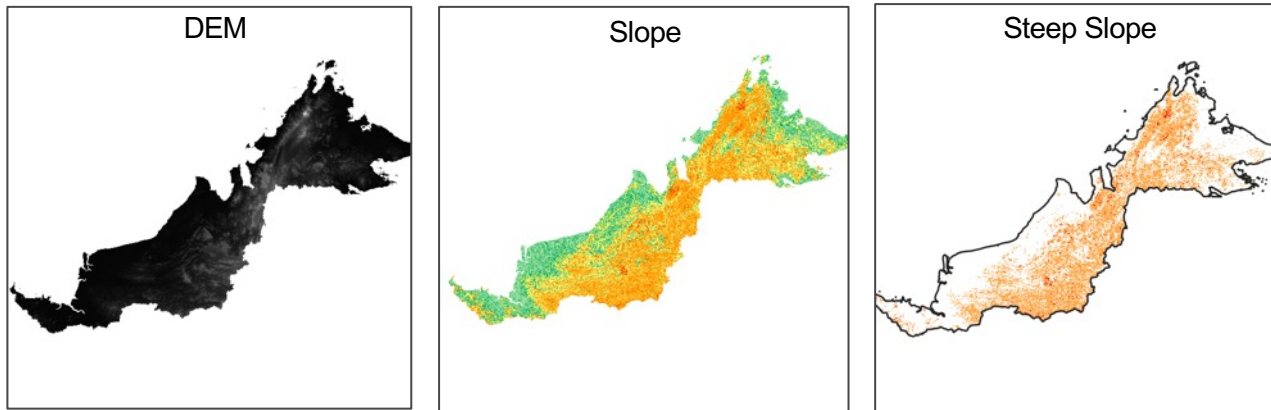# ISCC System users can use ARIA to create high quality, yet automated ISCC principal 1 risk assessment reports

**Plantation outline**

### Geospatial datasets

- Satellite imagery (Landsat, ALOS PALSAR, etc)
- Geospatial datasets (tree height, tree cover
- Protected areas, peatlands & wetlands
- Fire
- Slopes
- etc..

### Algorithms

- Image processing
- SAR processing
- EVI processing
- Cloud computing
- Stacking & composing
- Random forest
- Deep learning
- Object-based classification
- etc..

**ARIA**

**RED/ISCC P1 risk assessment report**



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Sustainability Risk Assessment
Compliance with RED Land Use Change
Cologne, 26 October, 2021

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# ARIA report includes a wide varitey ot datasets that cover ISCC P1, examples

# GRAS datasets are also included in ARIA: Example, palm replanting map
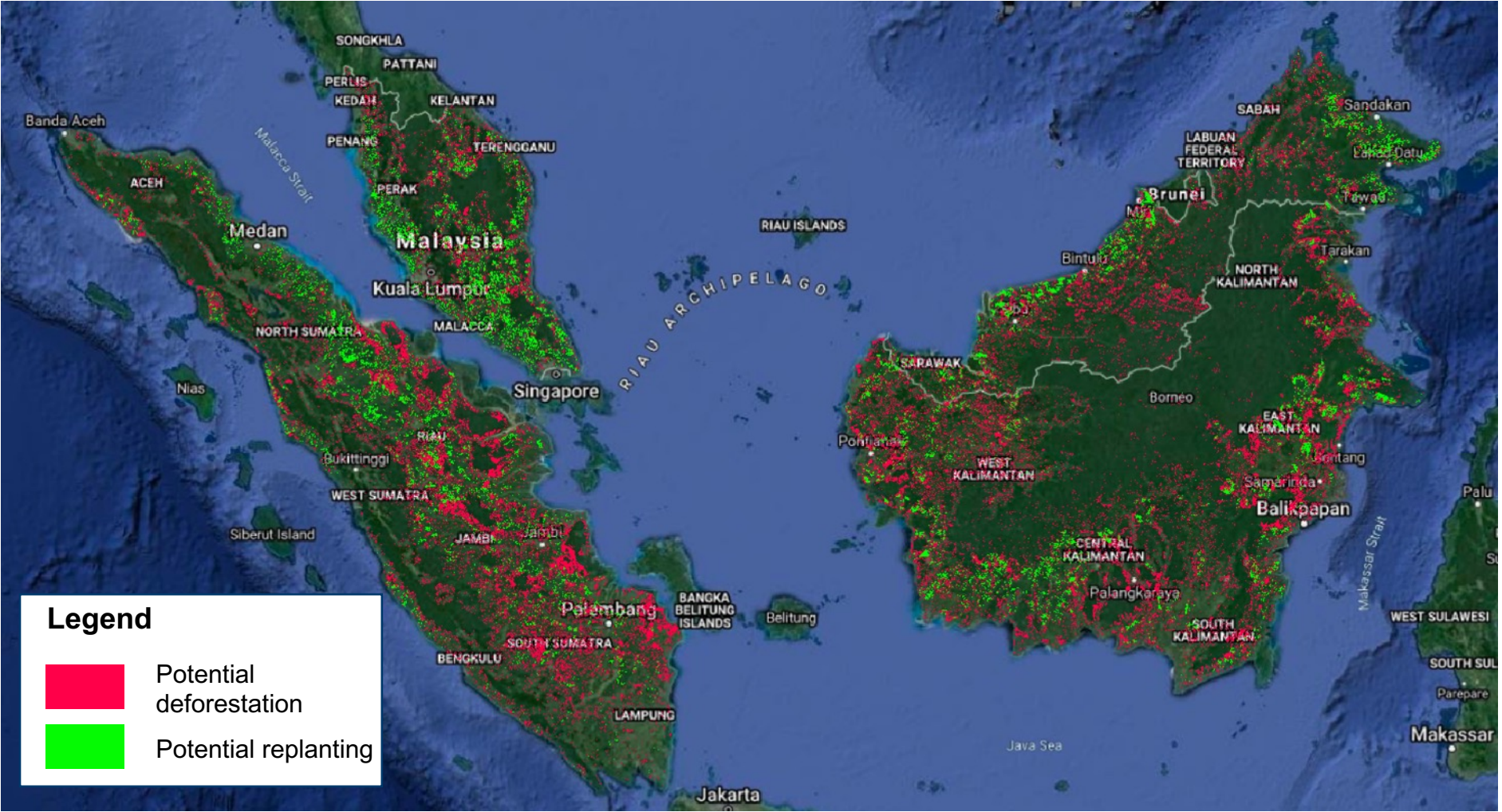


**Legend**

■ Potential deforestation

■ Potential replanting

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# GRAS datasets are also included in ARIA: Example Palm Plantation map



**Legend**

Potential deforestation

# GRAS datasets are also included in ARIA: Example Palm Plantation map



**Legend**

- 🟥 Potential deforestation
- 🟩 Potential replanting
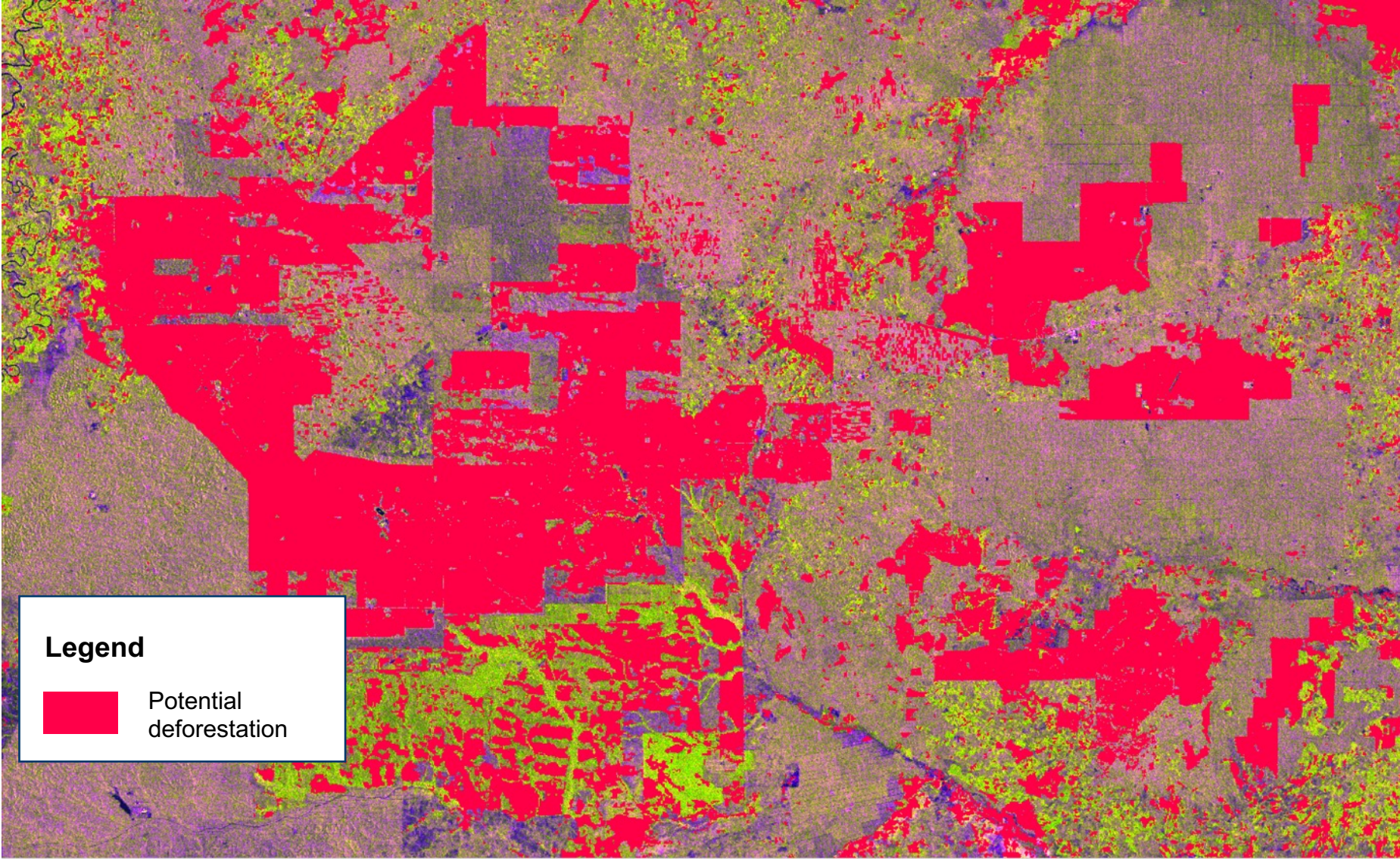
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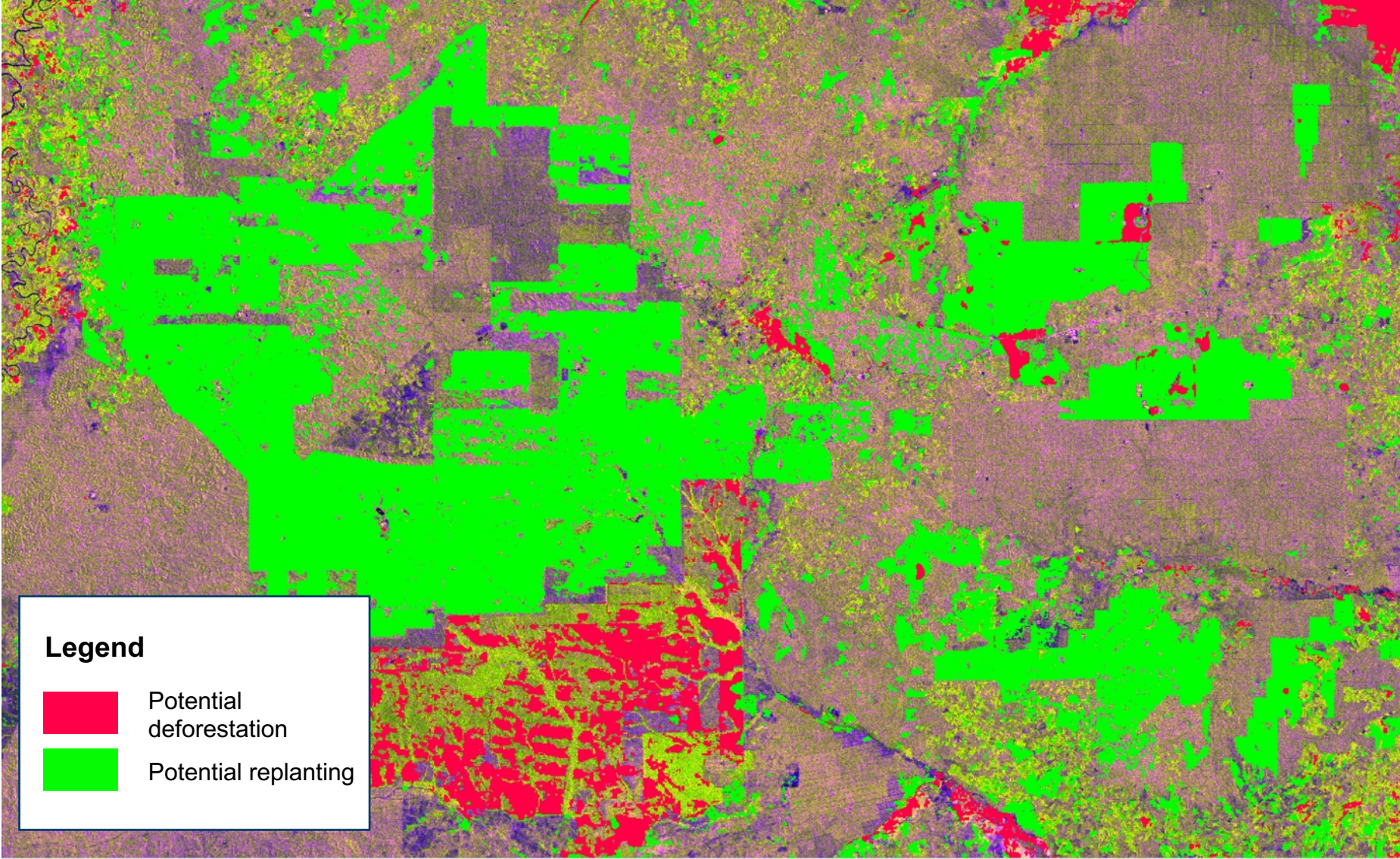
# ARIA– GRAS Reporting Tool for RED criteria ISCC P1

## Tool for the verification of RED criteria and ISCC Principle 1 criteria

- Automated and detailed risk assessment
- Online payment system

- Online management of assessment requests
- Management of coupons and transactions

# Users can create their own accounts, upload estates/plantations' outlines and download reports
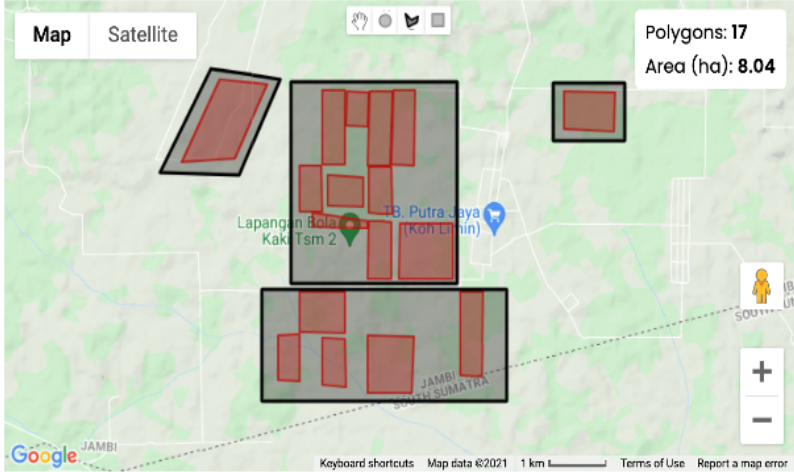


- ARIA allows anyone to register and upload their polygons for an automatic risk assessment in Indonesia and Malaysia.

- User area for managing their profile, reports, requests and purchases (invoices and receipts).

- easy contact form, FAQs for assistance on using the platform as well as interpreting reports.

# Users can also split their estates into more than one report



- Plantations can be divided into logical groups to create high quality reports for any given area.

- An automatic risk assessment is within a few minutes.

# Example Report

# Automatic reports are free of charge for ISCC system users. ISCC system users can request detailed LUC assessment with a reduced pricing scheme

## Automatic Risk Assessment (ARIA)

- **Standardized assessment** done by the system users, CBs, etc.
- ISCC system users can obtain vouchers from ISCC and generate report free of charge.
- Evaluation of **non-compliance risks** ISCC Principle 1
- If necessary, GRAS can provide a Detailed GRAS Assessment

## Detailed LUC Assessment

- **Crop/country-specific Detailed LUC assessment** on the compliance with ISCC Principle 1 using remote sensing time series
- Can also support **HCV** assessments
- ISCC system users get **special pricing scheme** for all countries included in ARIA

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# ARIA includes an Online Payment System



- Integrated Online Payment System: Payment is done online.

- ISCC system users can get vouchers from ISCC and can create reports free of charge

# Users can manage their cases and payments via user board

## Purchase History

| # | Report Name | Requested date | Status | Report PDF | Invoice | Payment | Action |
|---|-------------|----------------|--------|------------|---------|---------|--------|
| 1 | Gras Risk1 | 2021-09-20 | Invoice Received | -- | 👁 | Pay Now | Cancel |
| 2 | Gras Risk1 | 2021-09-14 | Payment Received | -- | 👁 | Paid | Cancel |
| 3 | Gras Risk1 | 2021-09-13 | Ready | 📄PDF | 👁 | Pay Now | Cancel |
| 4 | Gras detail | 2021-09-10 | Cancel | -- | -- | Pay Now | Cancel |
| 5 | farmname45 | 2021-09-06 | Request Sent | -- | -- | Pay Now | Cancel |
| 6 | farmname3 | 2021-09-06 | Payment Received | -- | 👁 | Paid | Cancel |
| 7 | farmname4 | 2021-09-06 | Cancel | -- | -- | Pay Now | Cancel |
| 8 | farmname3 | 2021-09-06 | Cancel | -- | -- | Pay Now | Cancel |
| 9 | Gras Risk6 | 2021-08-31 | Ready | 📄PDF | 👁 | Pay Now | Cancel |
| 10 | test | 2021-08-30 | Payment Received | -- | 👁 | Paid | Cancel |

Search

- Same steps can be used to request a detailed assessment from GRAS.

- User receives an estimate (invoice) and the whole process is managed online via the system.

- Users can manage their previous reports, detailed assessment requests, payments and invoices in the system.

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## Summary & Outlook

- ISCC has supported the development of the an ISCC P1 risk assessment tool called **ARIA**

- **ARIA** reports will be free of charge for ISCC system users

- GRAS team is currently conducting an intensive testing of the tool and is making improvments to the report based on the test results

- ARIA will be launched at the first quarter of 2022

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# Thank you very much!

GRAS Global Risk Assessment Services GmbH

Hohenzollernring 72, 50672 Cologne, Germany

Email: info@gras-system.org, Website: www.gras-system.org