Preferred by Nature™

Geospatial Data

Traceability and geolocation: Emerging solutions through Digital Public Infrastructure

Forest Governance and Policy Conference 2024

Mission

To support better land management
and business practices that benefit people, nature and the climate

Vision

A world where human choices ensure a sustainable future

An international mission-driven non-profit organisation

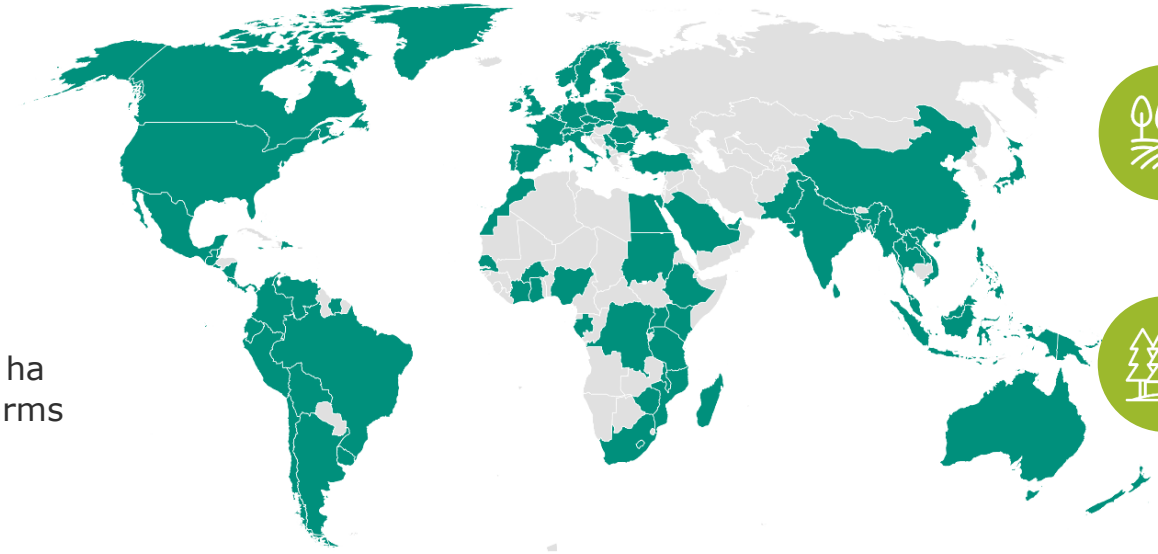
What we do

- Certification services
- Sustainability advisory services
- Capacity building
- Mission-driven projects

We work in more than **100+** countries

30 years of experience

350+ full-time staff



800 000+ certified farmers and foresters

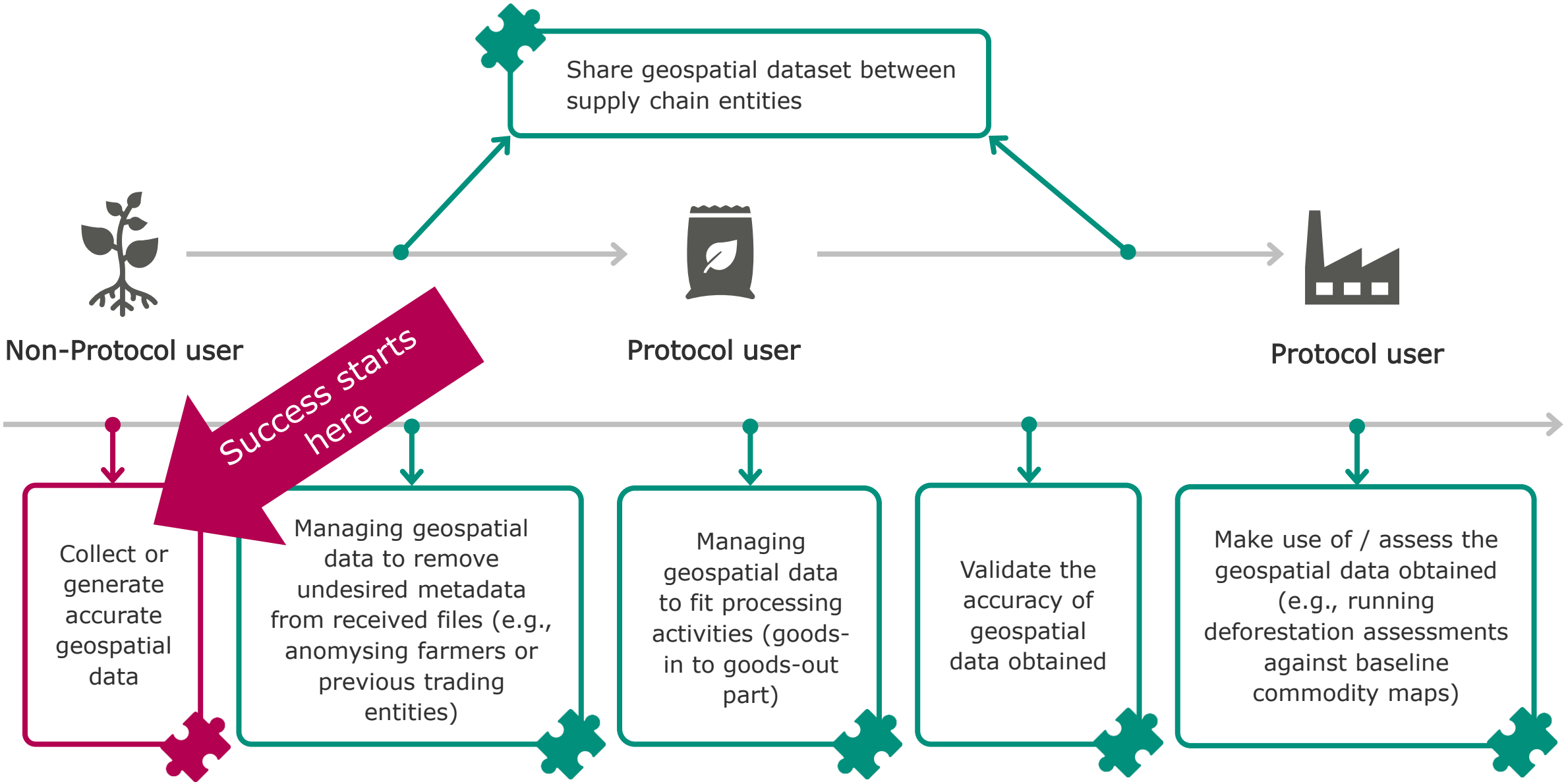
2+ million ha of certified farms

30+ million ha of certified forests

Working with more than 4,000 companies & organizations.

Generating Farm/Forest Geospatial Data

Geospatial data in the Supply Chain- Collecting



Current Challenges

Major differences depending on the commodity & the supply chain, as well as large farms/concessions vs smallholders

Data privacy, data ownership, data protection for farmers, farmers' data often linked to sensitive information

Un-even availability of land-use data from official sources (i.e. land-use titles, inconsistent state-held land registries)

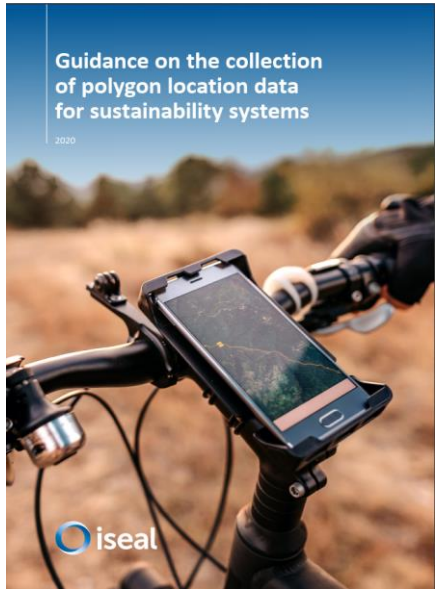
Private sector and government moving at different paces – resources, accessibility, different owners of data **makes validation difficult.**

Detecting undeclared production (e.g. from protected areas) is impossible when origin and volume data are held in different databases and not reconciled

Solutions emerging

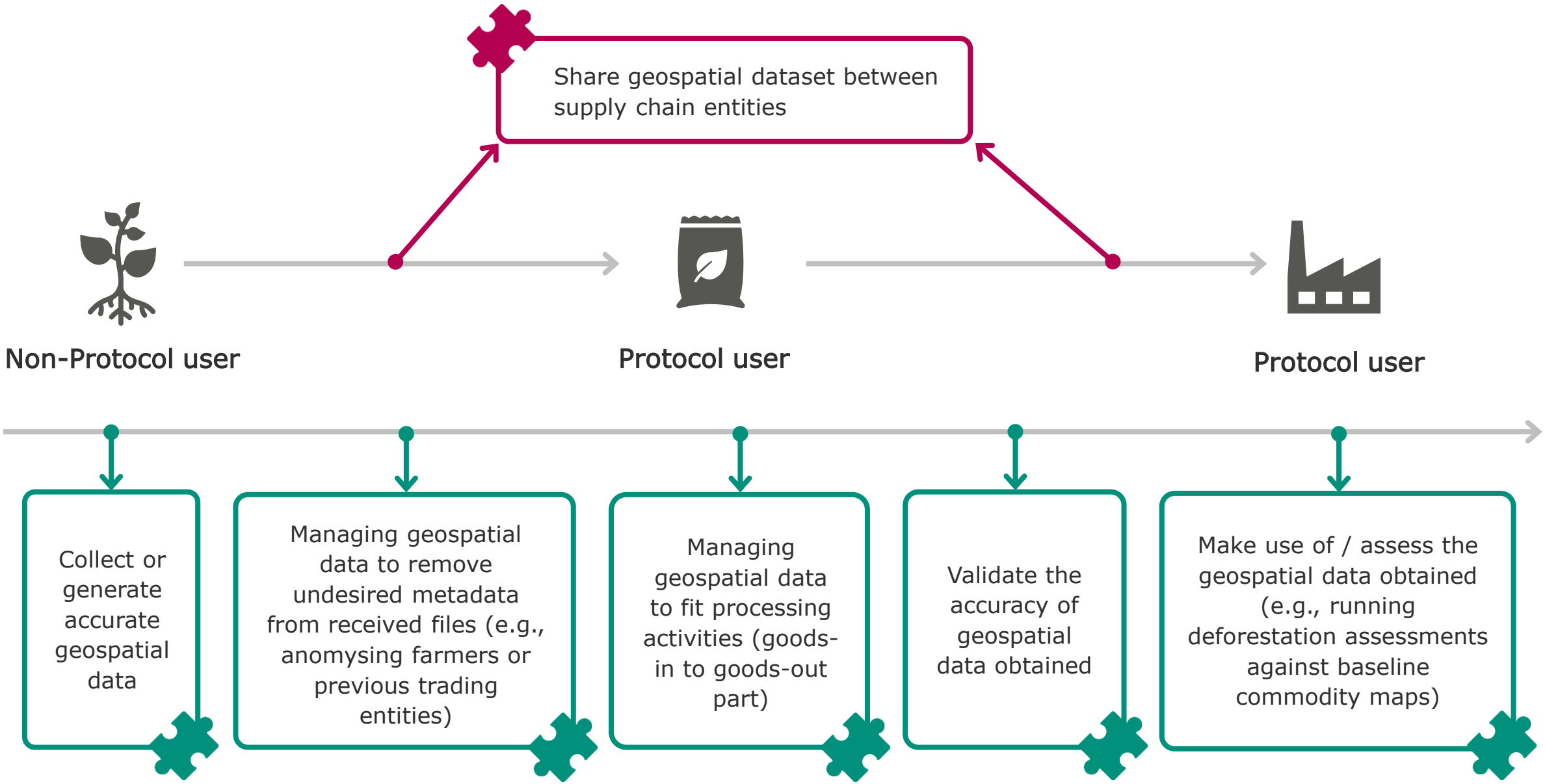
- Emerging initiatives to develop a global asset registry, and around creating global field ID

- Support for and around good practicies:



Managing and Sharing Geospatial Data

Geospatial data in the Supply Chain- Sharing



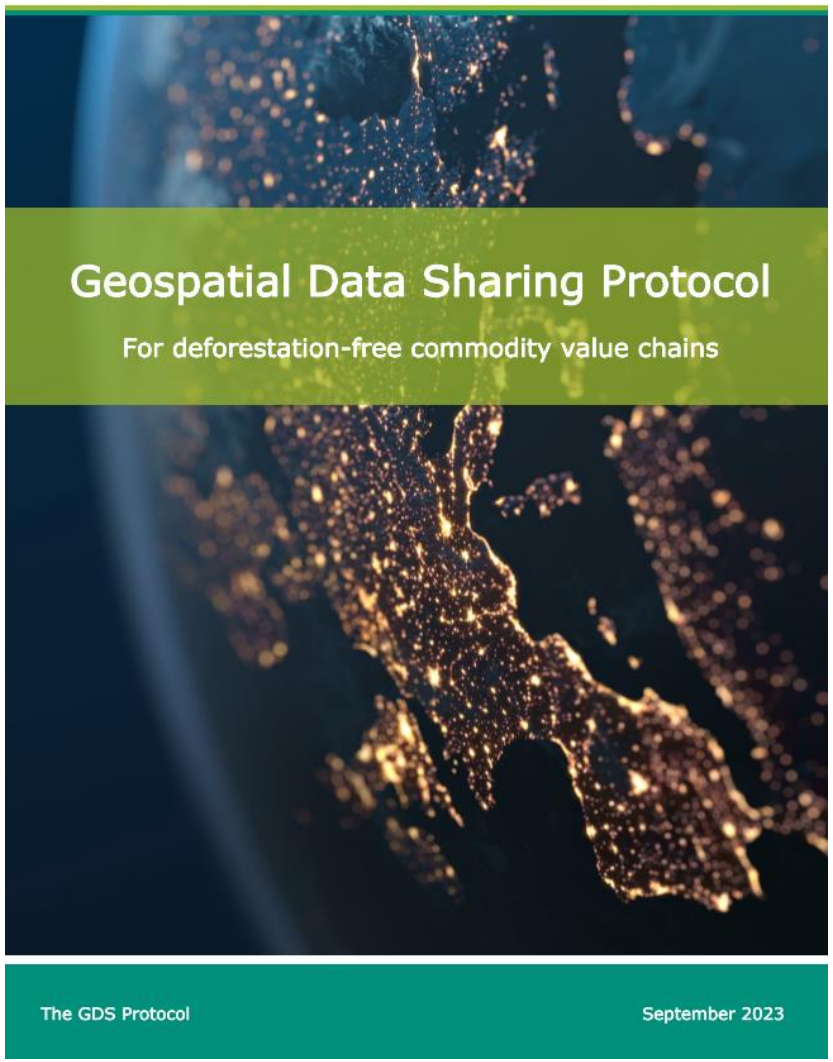
Challenges

Digital data flow matching physical flows of products (aggregation/ disaggregation)

Merging likley very large amounts of data, and passing this data from suppliers onto buyers.

Actors may be using different coordinate systems as references, different formats to save files (i.e. shp, gpx, GeoJSON, csv, KML, etc).

GDS Protocol version 1.0



EFI (European Forest Institute) • EC-JRC (Joint Research Centre of the European Commission) • Fairtrade • FSC (Forest Stewardship Council) • GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), leading the DIASCA (Digital Integration of Agricultural Supply Chains Alliance) initiative • ISEAL • Linux Foundation / AgStack • Rainforest Alliance • RSPO (Roundtable on Sustainable Palm Oil) • SBP (Sustainable Biomass Program) • WRI (World Resources Institute)

Chainpoint / Source Intelligence • Enviva • Iba (Indústria Brasileira de Árvores) • IKEA • iov42 • James Griffiths (consultant) • John Simeone (consultant) • LiveEO • Louis Dreyfus Company • Smurfit Kappa (representing CEPI) • Stora Enso

Development process

In collaboration with the FAO under the auspices of the Forest Data Partnership Program

Identified that there is a missing tool: open-source generic set of specifications to develop and update systems

Brought in many key organizations, experts to work together to develop something relevant and useful

Drafted protocol that is now publicly available- developing a community of practice

Regulation and commodity agnostic, but EUDR aligned

Key Elements

- Applies to transactions
- Use of unique identifiers
- Indexing reference systems

Choice of indexing system- why?

```
// These coordinates outline Maine
'coordinates': [
    [
        [-67.13734, 45.13745],
        [-66.96466, 44.8097],
        [-68.03252, 44.3252],
        [-69.06, 43.98],
        [-70.11617, 43.68405],
        [-70.64573, 43.09008],
        [-70.75102, 43.08003],
        [-70.79761, 43.21973],
        [-70.98176, 43.36789],
        [-70.94416, 43.46633],
        [-71.08482, 45.30524],
        [-70.66002, 45.46022],
        [-70.30495, 45.91479],
        [-70.00014, 46.69317],
        [-69.23708, 47.44777],
        [-68.90478, 47.18479],
        [-68.2343, 47.35462],
        [-67.79035, 47.06624],
        [-67.79141, 45.70258],
        [-67.13734, 45.13745]
    ]
```

How coordinates actually look like when stored in a geo adjacency file- long, hard to read, sensitive

Coordinates GeoJSON, WGS84

Indexing systems are matching a polygon with a single ID, or single string of characters- strong consensus.

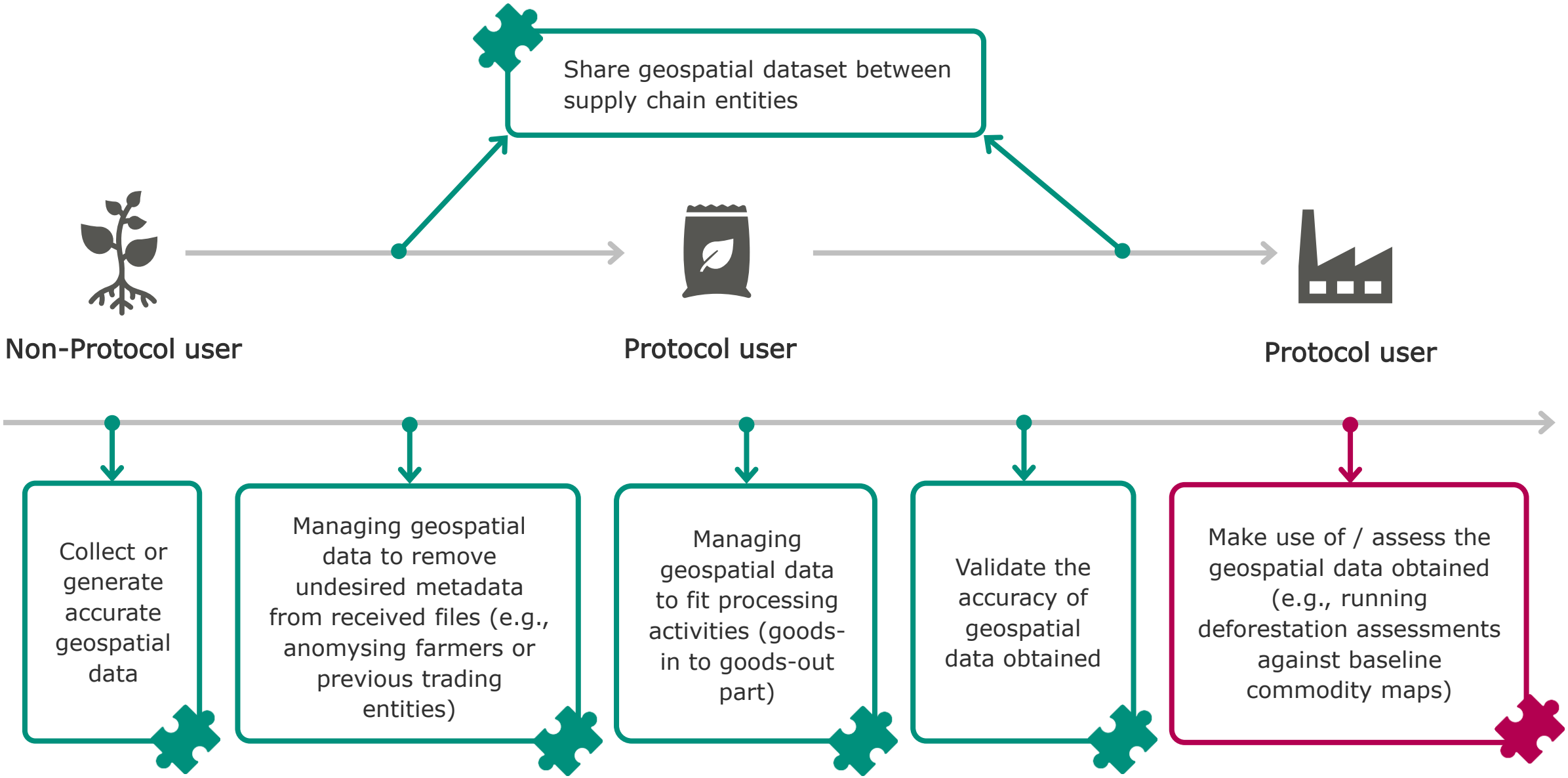
GeoID:

b59a3689404a502ba4836e
1f16b1d255a01ec46a9e30
f3afb1dadaa9b1d2866e

ID based on S2 indexing system

Assessing Geospatial Data

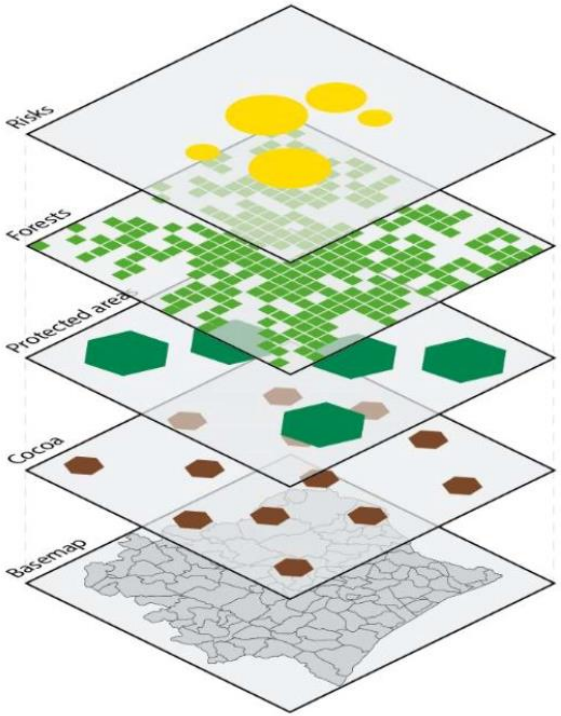
Geospatial data in the Supply Chain- What now?



Using Geospatial Data

Expected use

- Overlay farm/forest boundaries with GIS products
- Maps and satellite imagery of forest cover
  - Globally applicable (less accurate) vs regional / country specific (developed specifically for a region).
  - Publicly available or not



Key Challenges

- Cloud cover in tropical areas
- Products using forest definition not aligning with EUDR
- Crops that look like forests (e.g. rubber)
- Crops that may grow under forest cover (e.g. cocoa, coffee)

Running appropriate analyses

- High need for GIS skills, storage and computing power
- Can be done internally or externalized to some or full extent (from platform / dataset access to actionable insights, alerts, reports, dashboards, etc.)
- Open-source initiatives: Global Forest Watch, Sepal, MapBiomass, NICFI/Planet maps, etc.
- Many service providers emerging: Satelligence, LiveEO, Orbify, Starling, etc.

Challenges

Documented limitations on **global and open-source products…** though peer reviewed, and well acknowledged limitations

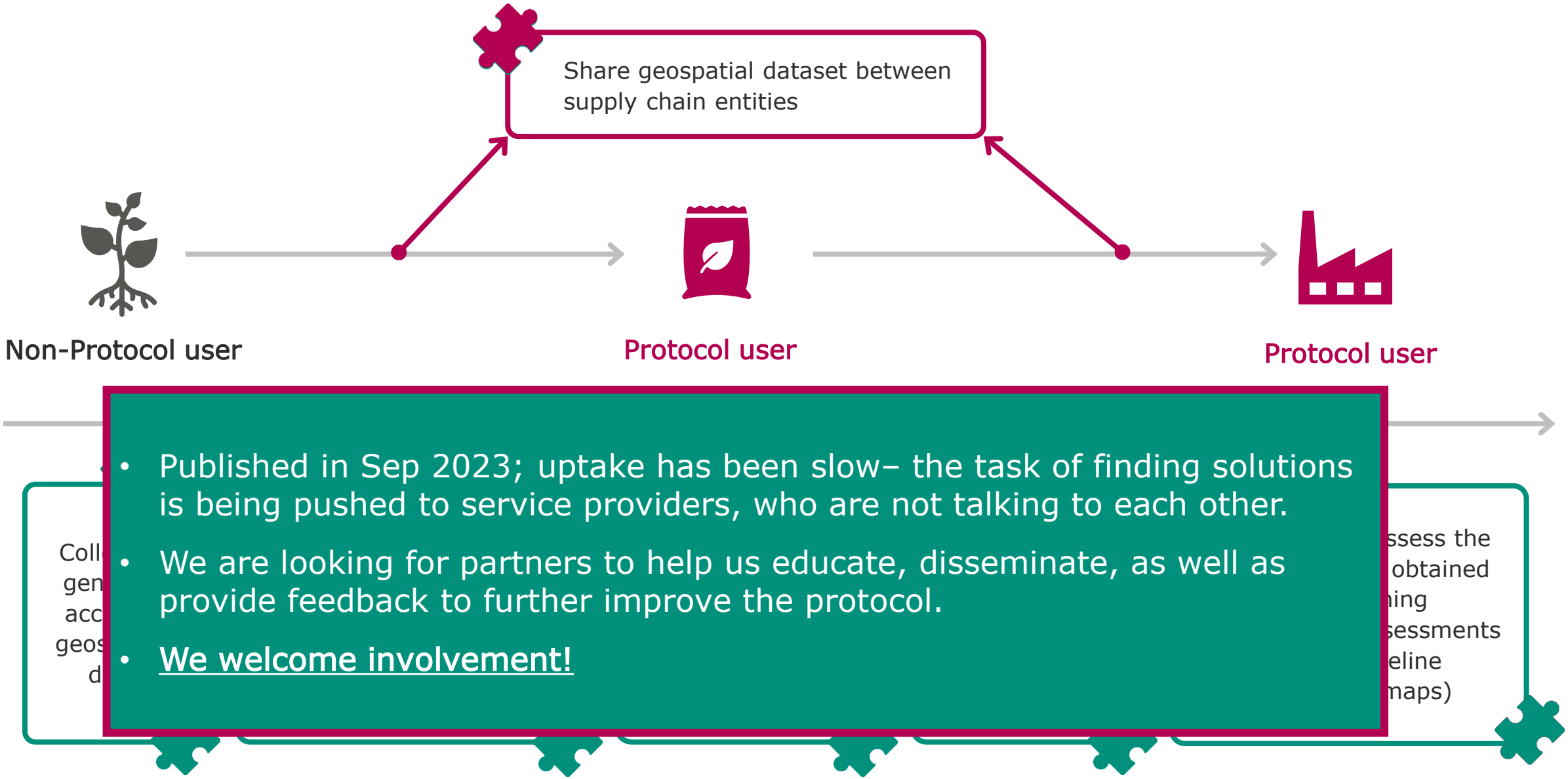
Could be good for a first scan, using a risk-based approach.

Proprietary algorithms **from commercial providers-** may have less limitations due to resources, run on man-power than automated systems. Less open to scrutiny.

Consensus that the higher the risk, the more data sets will have to be used.

Currently no single data set or map that can provide sufficient information by itself. This includes ground-truthing alerts and even on-site verification.

Protocol: Where is it now?



- Published in Sep 2023; uptake has been slow– the task of finding solutions is being pushed to service providers, who are not talking to each other.
- We are looking for partners to help us educate, disseminate, as well as provide feedback to further improve the protocol.
- We welcome involvement!

Thanks & Get in touch with us

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And explore our dedicated GDSP webpage

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