SAGE | The Data Space for a Sustainable Green Europe

Data Spaces & Research Data

SAGE Use Case: Pollinator Monitoring Dataspace

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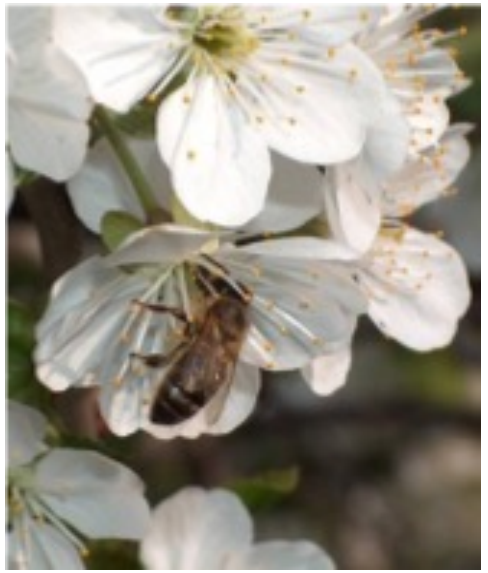
Why the pollination by insects is so important

Plant species	% of fruit set (numer of fruits per 100 flowers)	
	With free access for insects	Under the mesh isolators
Sweet cherries	10.0 – 18.5	0.0 – 0.5
Cross-pollinating sour cherries	4.1 – 18.0	0.0 – 0.7
Cross-pollinating plums	11.0 – 25.0	0.3 – 1.2
self-pollinating sour cherries	18.3 – 33.0	6.9 – 15.4
self-pollinating plums	14.4 – 28.1	7.6 – 16.0



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Pollinator Monitoring Dataspace Overview

What is the Pollinator Monitoring Dataspace?

- A unified digital ecosystem integrating Pollinator monitoring efforts.
- Supports biodiversity, the understanding and identification of pollinator-friendly cultivars

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Key value proposition

Key Stakeholders

- Research institutions - biodiversity related research, plant protection, impact of agriculture practices, new services
- Farmers - making informed, pollinator-friendly decisions
- Policymakers/local governments – better understanding of state of biodiversity in given regions
- Beekeepers/apiary owners - interaction with farmers
- Pollinator monitoring projects and initiatives – new data sources

Why Does It Matter?

- It is estimated that pollinators contribute at least 22 billion € each year to the European agriculture
- Some fruit, seed and nut crops decrease by more than 90% without pollinators
- Monitoring pollinator populations and biodiversity is crucial for effective conservation.
- Monitor the impact of agricultural practices on pollinator diversity: supporting a decision support system for pollinator- friendly agriculture.

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Key input data

- **Open data (research or public authorities)**
  - information about crops, pollinators taxonomy data
  - satellite imagery (Sentinel-1, Sentinel-2);
  - weather data
- **Data with restrictions (research or public authorities)**
  - soil quality maps
- **Private data**
  - UAV data covering crops
  - digital monitoring toolbox: visual observation data
  - data from apiary management systems
  - data from farm management systems
    - E.g. eDWIN (national Internet Platform for Advice and Decision Support in Integrated Plant Protection in Poland)

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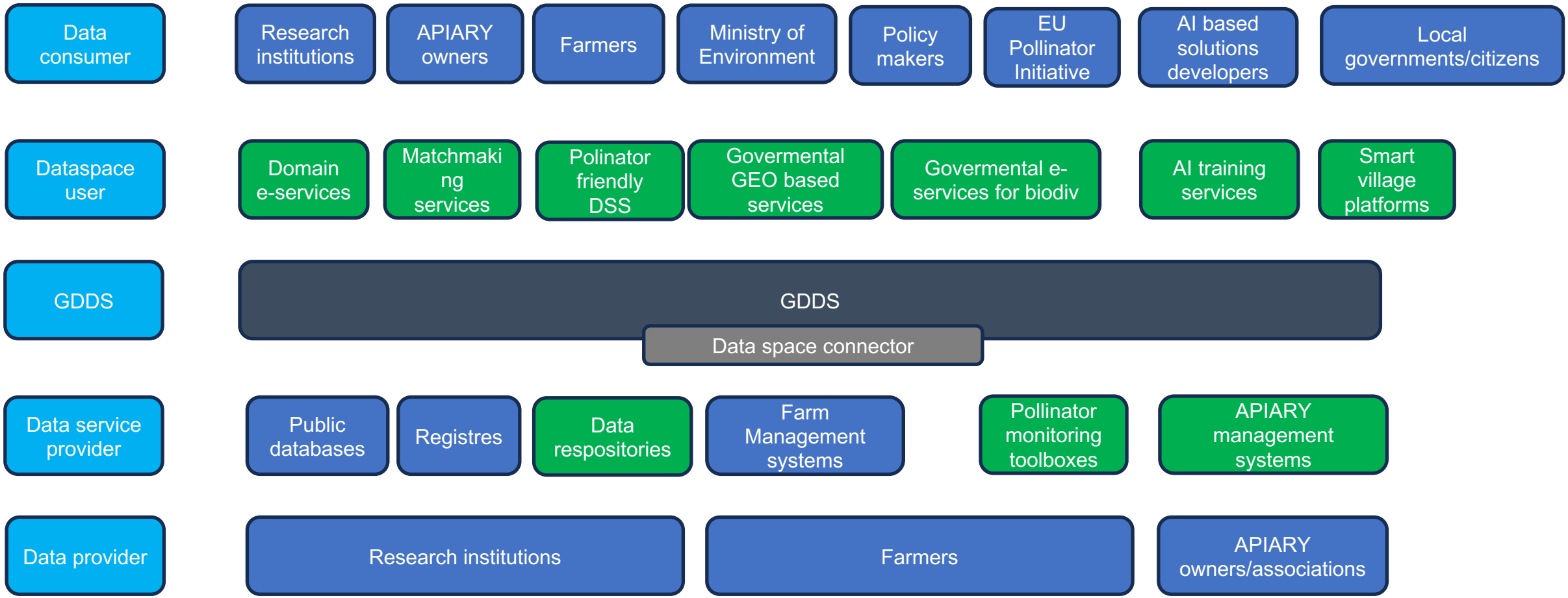
Processing step planned



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Output data products and services

monetization of products

- Matchmaking services for farmers and beekeepers
- Pollinator friendly DSS
- Improved AI models
- Digital pollinator monitoring toolboxes

creation of results to be shared only with contributors

- Domain e-services (plant protection, biodiversity planning services)

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Thank you

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