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SenSPa

**Sentinels for Sustainable
Pasture management**

Your Tool for Sustainable Pasture Management



Funded by the European Space Agency

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SenSPa
Sentinels for Sustainable
Pasture management



Interested in having up to date information to make important pasture management decisions for your area of interest?



Need easy access to high-resolution satellite imagery, plant cover, forage production and grazing capacity data?



Interested in monitoring pastures in a cost and time efficient manner?

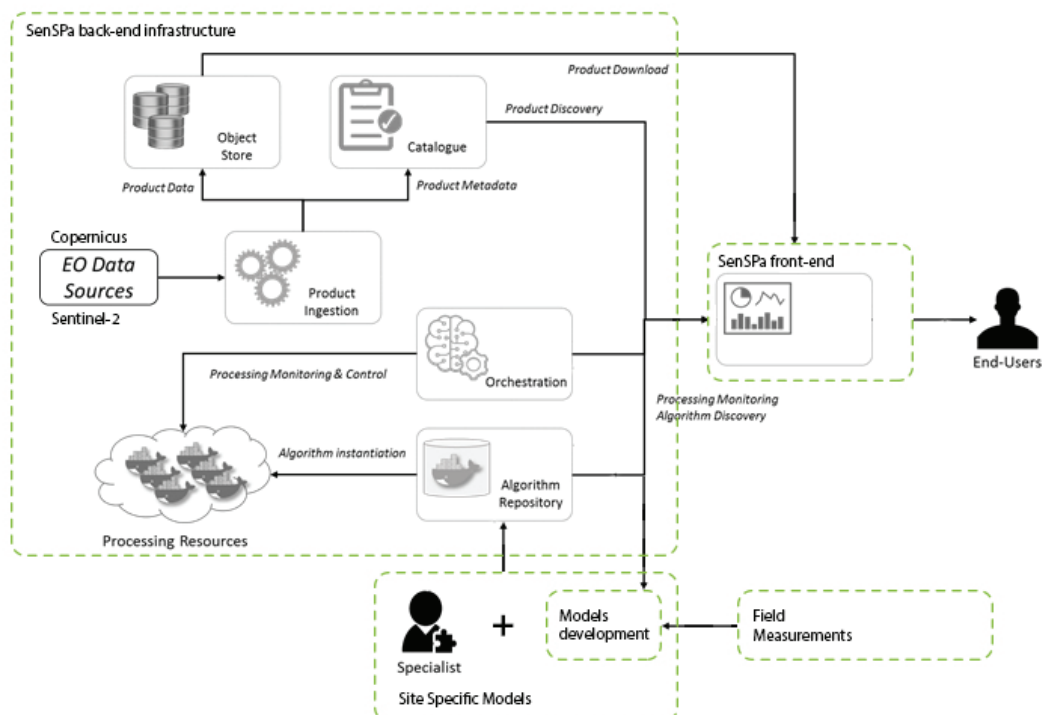
Background

Grasslands are an important source of goods and services, whereas pastures are the main feed resources for livestock worldwide. 26% of the world land area and 70% of the world agricultural area is covered by extensive grasslands serving as a source of revenue for over 800 million people.

Governmental authorities, policy makers, land managers and livestock farmers have to take decisions about sustainable pasture management according to the rangeland productivity and status. However, collecting field data, regarding the current condition of vegetation (plant cover, forage production), is time and labor intensive. Coping with these challenges, SenSPa is fostering the introduction of a new Earth Observations (EO) application concept and an EO based tool for stakeholders and users supporting sustainable pasture management in developing countries. Sentinel-2 data are combined with field measurements and other ancillary data to assess grassland productivity, rangeland condition and determine grazing capacity.

The SenSPa Tool

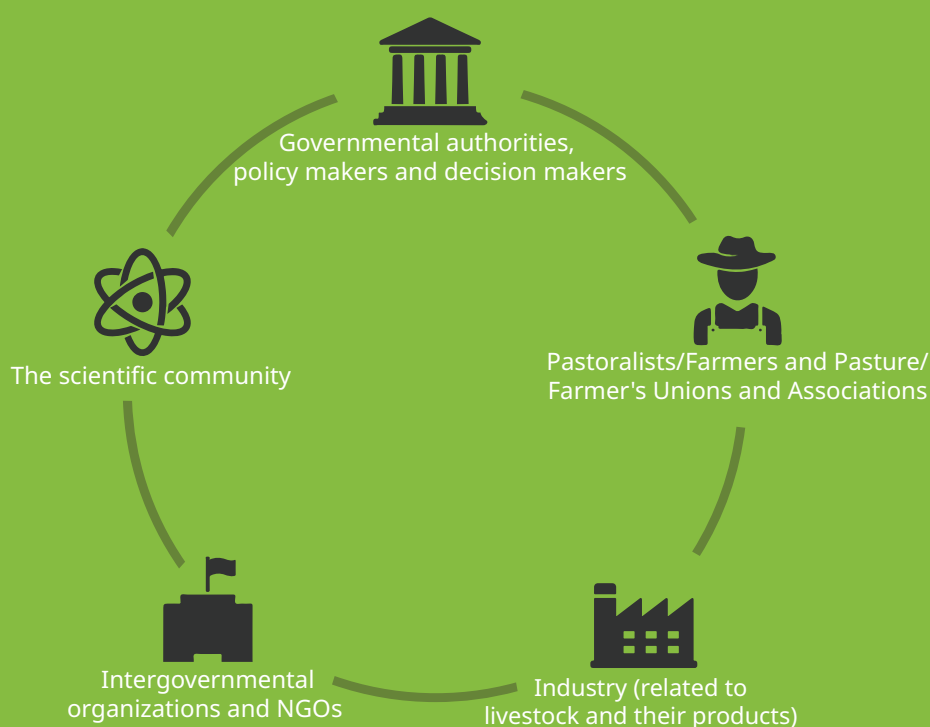
The **SenSPa tool** is an on-line system that targets to assist sustainable pasture management, decision making, planning of activities and in the long-term pastures' restoration by providing useful, up to date information for sustainable pasture management. The information will be available to local and national public administrations, public and private stakeholders and end-users.



SenSPa Methodological Approach

Who Can Use it?

SenSPa provides added-value, cost-efficient and real-life-tangible solutions to various user categories:



What Products Are Provided to the User?

The SenSPa tool is processing continuously updated satellite data along with ancillary data in order to provide useful, up to date information for sustainable pasture management. The main products that are provided to the users are:

- Forage Production.
- Grazing Capacity.
- Plant Cover.
- Pastures Condition.
- Vegetation Indices and Band Ratios.

Where can it be applied?

The SenSPa tool primarily targets Central Asia and neighbor countries. Nevertheless, the tool has global application and can be used for several activities:

- Sustainable pasture management: facilitates stakeholders in monitoring and managing pastures sustainably.
- Livestock management: assists livestock farmers to manage their herds more efficiently.
- Policy making: assists governmental authorities and policy makers in decision making and planning of the long-term pasture management or restoration.
- Research: assists researches to retrieve data and facilitate their research.

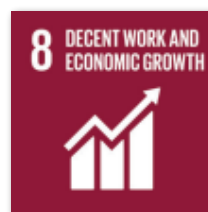
Advantages

- Cost-efficient, web-based service.
- Accessible from any computer or smart device.
- Use of up to date information.
- Wide range of features and pasture related products.
- Wide range of applications.

Benefits

- Supports sustainable pasture management and improved grazing management.
- Increase of livelihood

SenSPa contributes to reach the following United Nations Sustainable Development Goals:



**Activity carried out under a programme of,
and funded by, the European Space Agency.**

Tools

Queries

The 'Queries' tool interface displays a map of Azerbaijan with a query for 'Land use / Land cover' and 'Pasturelands'. The interface includes a search bar, a sidebar with navigation options (TOOLS, DATA, PRODUCTS, DOWNLOADS, ADMIN), and a main panel with a 'Queries' tab. The query is defined by the following parameters:

- Land use / Land cover: lulc
- Pasturelands: Pasturelands

The 'Layers' section shows the following layers:

- Country: name_0 = Azerbaijan
- Land use / Land cover: lulc = Pasturelands

The map shows the results of the query, with the 'Pasturelands' area highlighted in green.

Statistics

The 'Statistics' tool interface displays a map of Azerbaijan with a query for 'productivity: summer 2019 (area id - 67)'. The interface includes a search bar, a sidebar with navigation options (TOOLS, DATA, PRODUCTS, DOWNLOADS, ADMIN), and a main panel with a 'Statistics' tab. The query is defined by the following parameters:

- Layer: productivity: summer 2019 (area id - 67)

The 'Get statistics' button is visible. The resulting statistics table is as follows:

	Count
Count	15284316
Minimum	180.19137573242188
Maximum	1601.4862060546875
Mean	648.3381311855132
St. Deviation	283.62249667703526
Sum	9909404871.88884

Swipe

The 'Swipe' tool interface displays a map of Azerbaijan with a query for 'productivity: summer 2019 (area id - 67)'. The interface includes a search bar, a sidebar with navigation options (TOOLS, DATA, PRODUCTS, DOWNLOADS, ADMIN), and a main panel with a 'Swipe' tab. The query is defined by the following parameters:

- Layer: productivity: summer 2019 (area id - 67)

The 'Swipe' tool allows users to view the results of the query in a swipeable format, showing the 'productivity: summer 2019 (area id - 67)' layer on the left and the 'Land use / Land cover' layer on the right.



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