Webinar

THE SUSTAINABLE TRANSFORMATION OF AGRICULTURE THROUGH DIGITALISATION AND SPACE

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25/10/2023

Business Applications: space-enabled services

BASS aims at reaching **commercial exploitation of space assets, data and capabilities** addressing **technical feasibility and business development**. This includes the development **of operational services for a wide range of users** through the combination of different systems, and **support in creating viable companies as well as to existing companies**

Sustainability elements of space applications

PEOPLE
Social value

PLANET
Green value

PROFIT
Commercial value

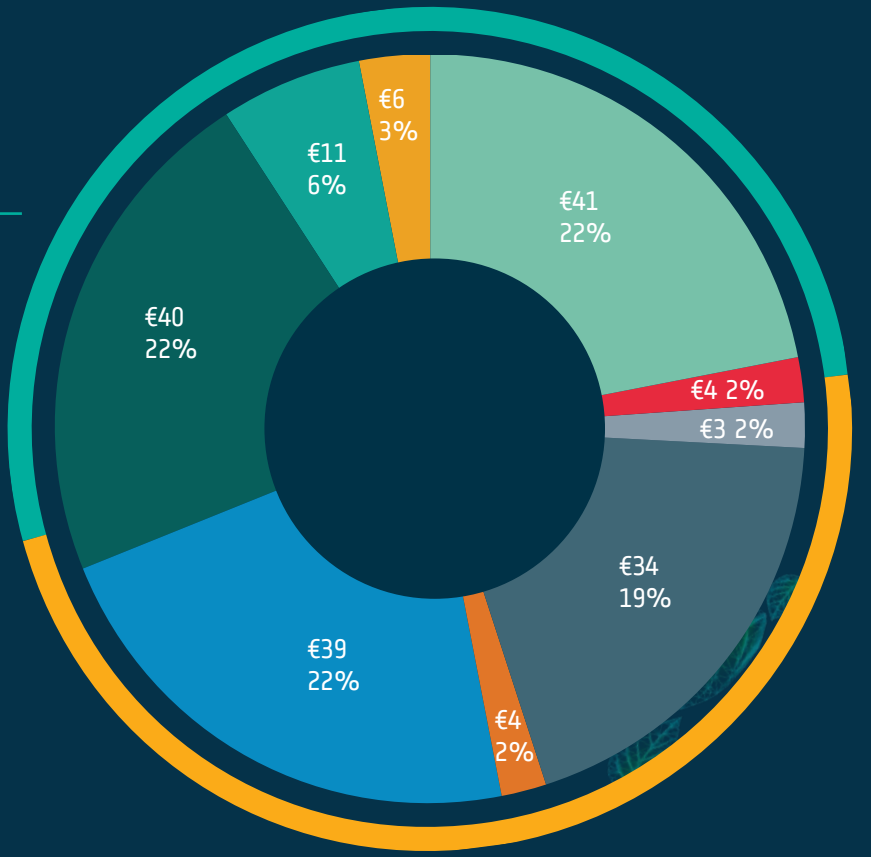
SUSTAINABLE APPLICATIONS WITH GREEN IMPACT

It is estimated that abandoning the current high-carbon pathway in favour of a low-carbon future will bring €26 trillion in economic benefit.

Investment in BASS Green Activities since 2010

Market demand for green solutions, new ESA BASS funding opportunities, and collaborations with industry partners will support future growth in sustainable development investment

With **€183M** **invested into** **300 ideas** the green transition now drives **48%** of all new ESA Space Solutions.



Sustainable transformation of agriculture through digitalization and space

Support the development of innovative services focused on the optimization of agricultural practises which minimize negative environmental impacts in terms of soil degradation, water depletion and contamination, inefficient energy use, loss of biodiversity.

The Call for Proposals is only for Demonstration Projects

It is NOT a Competitive Call

Use cases defined with the support of:

Ministero delle politiche agricole alimentari e forestali

copa cogeca
european farmers european agri-cooperatives

ERA-NET COFUND ICT-AGRI FOOD

Federal Office for Agriculture and Food

INNOspace 2 agriculture

Demonstration Project: key features

Idea Creation

Explore idea generation.

Filling out the narrative, exploring ideas.

Concept Design

Defining core functionality.

Understanding the market size and potential revenue

Prototyping

Create Prototype and assess feasibility.

Updating of the business plan.

Service Development

Definition of service specification and design of system elements

Validation with pilot customers.

Verifying the viability of the financials.

Commercialisation/ Service Rollout

Demonstration Projects: Up to 50% co-funding*

*Up to 80% for SMEs (depending on specific initiative and approval of national delegation

Use Cases

Agriculture of Data

- Efficient FMS
- Management of (fleet) agricultural machinery
- AI for weed recognition
- Plant disease detection

Climate-Smart Agriculture

- Services to:
  - increase productivity
  - enhance resilience
  - reduce GHG emissions

Precursor Activities

- Complement and expand previous initiatives with promising results

Green KPIs are required to measure the positive environmental impact

Applications are not limited just to these use cases. ESA welcomes new use cases from industry.

The Power of Space

SatCom: enable connectivity for in-situ data collection in remote areas. Satcom could provide both broadband connectivity to farms with no, limited or expensive terrestrial internet access and Satellite Internet of Things (S-IoT) for affordable and efficient data transfer and for position augmentation techniques that can guide tractors and machines.

SatEO: to monitor and to detect changes in fields, plants, soil and their surroundings (such as humidity, temperature and vegetation indices). EO data enables services related to smart farming such as crop yield prediction, crop disease monitoring and soil moisture estimation. The benefits of High-Platform Altitude Systems (HAPS) could also be considered, as these systems may offer advantages over satellites or complementary applications, and can be used for communication and/or remote sensing for spatial resolution and temporal coverage.

SatNav: essential to track the position of vehicles or any moving element of the proposed service, such as drones.. GNSS also enables the autonomous driving of AGVs (autonomous ground vehicles) and can be used to locate the position of sensors that measure physical parameters - of fields, for example.

Johannes Pfeifer

Federal Agency of Agriculture and Food (BLE)
European research area network ICT-AGRI-FOOD

Patrick Pagani

Copa-Cogeca

The sustainable transformation of agriculture through digitalisation and space

ESA, Webinar - 24/10/2023

Patrick Pagani –Senior Policy Advisor

copa*cogeca

european farmers european agri-cooperatives

Mission

To ensure a viable, innovative, competitive EU agriculture and agri-food sector guaranteeting food security to half a billion people throughout Europe.

Objective

Promoting European farmers and agri-cooperatives views to **influence** EU decision-making process and public opinion.

Farming Community committed to EU common policies

The EU farming community is committed and proud of the EU model of production!

- Common Agricultural policy
  - Internal market, Food safety, environment, animal health and welfare;
  - Market orientation, Fair, transparent, and balanced agri-food value chain;
  - Precision agriculture;
- Green Deal – need for a coherent and supportive framework
  - Climate Change
    - Committed to the implementation of Paris agreement
    - Limit the world's temperature increase to 1.5°C while not endangering food security;
- Digital Single Market

Ambitious targets require continues investment from farmers and agri-cooperatives

Context

- EU agriculture =>Facing a number of **challenges**:
  - Farmers: First to feel the **impact of climate change (exceptional draught, hails…)**
  - Ensuring **food security** under increasing demand for food, feed, non-food outlet production, and climate change pressure, while taking into account the 3 pillars of sustainability (economic, environmental, and social).
  - Contributing to the vitality of rural areas
  - Producing food with fewer natural resources, while:
    - Facing **new pests and diseases** derived from climate change effects
    - **Reducing greenhouse gas emissions**
    - **Maintaining productivity** on reducing agriculture land
    - Adapting to consumers' demands

Opportunities provided by Digitalisation and Space

- Optimize the use of resources
- Improve functioning of food-chain ;
- Improving the life conditions of farmers and their families;
- Give farmers a larger room of manoeuvre to make good farming decisions
- Key role of agri-cooperatives

It should provide clear benefits for the farmer. Its possible to deliver good value for farmers (e.g. optimising resources and enhancing productivity), while reducing the impact of agricultural production on natural resources.

What farmers and agri-cooperatives need

- Bridge among the needs of the farming community and space technologies.

✓ How can space technologies contribute to farmers and agri-cooperatives transition?

✓ Which technologies?

✓ In which timeframe?

✓ How to ensure that technologies can be accessible to all?

Topics

- ✓ Arable Crop Production
- ✓ Livestock Farming
- ✓ Forestry
- ✓ Fishing & Aquaculture

Memorandum of Intent between ESA and Copa-Cogeca

MEMORANDUM OF INTENT

between

The European Space Agency

and

Copa-Cogeca

on

Supporting the Sustainable Transformation of Farmers and the Agri-food Sectors through Digitalization and Space

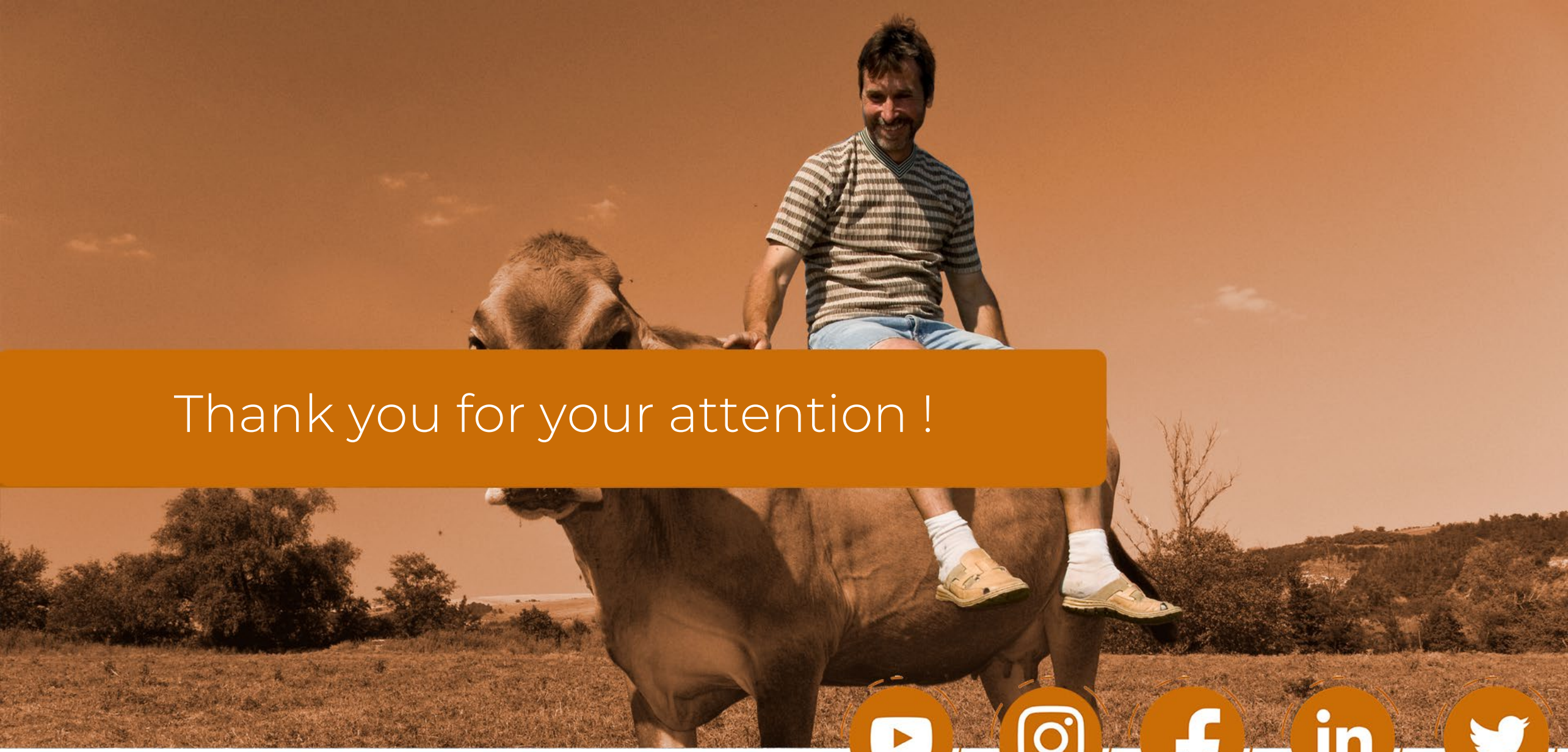
copa cogeca

european farmers european agri-cooperatives

Next steps

- 1rst step: Call on Sustainable Transformation of Agriculture Through Digitalisation and Space

- Further collaborations to promote and connect farmers and agri-cooperatives with space technologies



Thank you for your attention !

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How to Apply

https://business.esa.int/funding/call-for-proposals-non-competitive/sustainable-transformation-agriculture-through-digitalisation-and-space

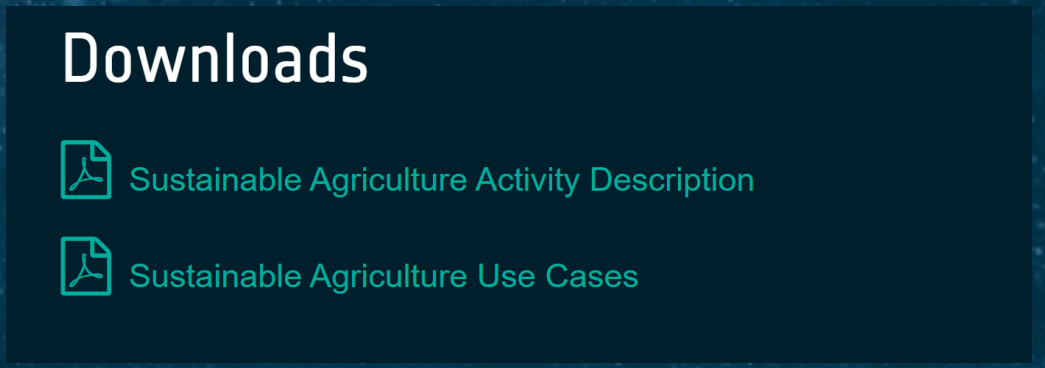
Things you will need to do:

- Submit your APQ pitch via ESA's Open Space innovation platform in the "APQ for ARTES Downstream Business Applications". Making it clear you are applying to the Thematic Call called "Sustainable Transformation of Agriculture through Digitalization and Space".
- If successful, you will be asked to submit an outline proposal and then (if acceptable) a final proposal (and dependent on national delegation support).

Opening Dates:

13 October-13 December 2023

Please do not wait until the end of the opening period to apply! We will be reviewing proposals regularly throughout the opening period.



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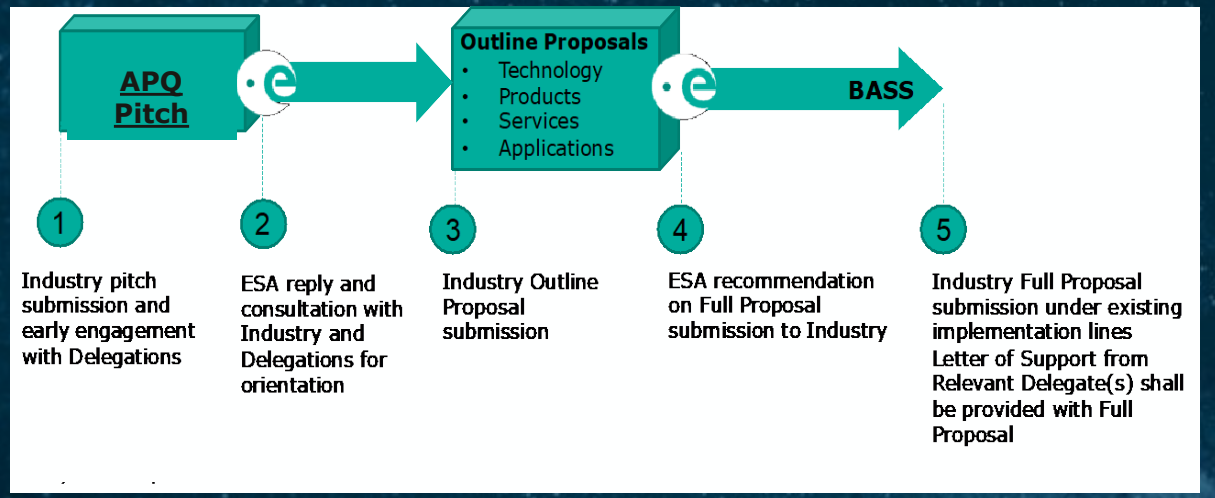


ACTIVITY PITCH QUESTIONNAIRE (APQ)

ESA-TIAA-PO-2017-1054 - V.3.10

The Activity Pitch Questionnaire (APQ) allows you to present your business idea in a reduced, standardised pitch. It helps ESA to quickly take informed decisions on next steps, pointing you to the most appropriate activity stream in case the APQ is considered acceptable (e.g., additional preparatory work, training, teaming up with some other partners, go ahead targeting a Feasibility Study or a Demonstration Project).

Gated and incremental approach: The submission process is based on the following three stages: the Activity Pitch Questionnaire (this form), the Outline Proposal, and the Full Proposal. In case the APQ is accepted by ESA, the answers to the questions of this APQ will be directly integrated in the Outline Proposal and extended as needed. In a similar way, the elements of the Outline Proposal, if accepted by ESA, can be directly integrated in the Full Proposal.

Activity Pitch Questionnaire (APQ) → Outline Proposal → Full Proposal

Prepare your pitch:

- Make sure you use the **LATEST VERSION** of the APQ template.
- Explanations of terminology used here can be found in the document 'Terminology used in ESA Business Applications'.
- Some explanations on how to prepare the APQ are available in the presentation 'ESA Business Applications - Guidelines for APQ Preparation'.
- Choose the appropriate Open or Thematic Call. For further details, visit 'ESA Opportunities for Open Calls'.

Call: Activity:

"Please be aware, it's important to ensure you have selected the right options."

- Choose the appropriate Open or Thematic Call. For further details, visit 'ESA Opportunities for Open Calls'.

Call: Thematic Call (under 1-10494) Activity: Sustainable transformation of agriculture through digitalisation and space

"Please be aware, it's important to ensure you have selected the right options."

Funding and Duration Scheme

Funding Scheme	
Activity Cost	case by case assessment (limited to acceptable cost)
ESA Co-Funding	
Baseline	max. 50% of company's cost
Micro, Small and Medium Enterprises [1]	max. 80%[2] of enterprise's cost
Universities and Research Institutes with no commercial interest in product/service	max. 80%[2] of institute's cost and max. 30% of activity cost
Industry Co-Funding	Remaining part of the cost to carry out the activity

You decide the **duration of the project** based on the proposed services
(please take into account the duration of the pilot trial)

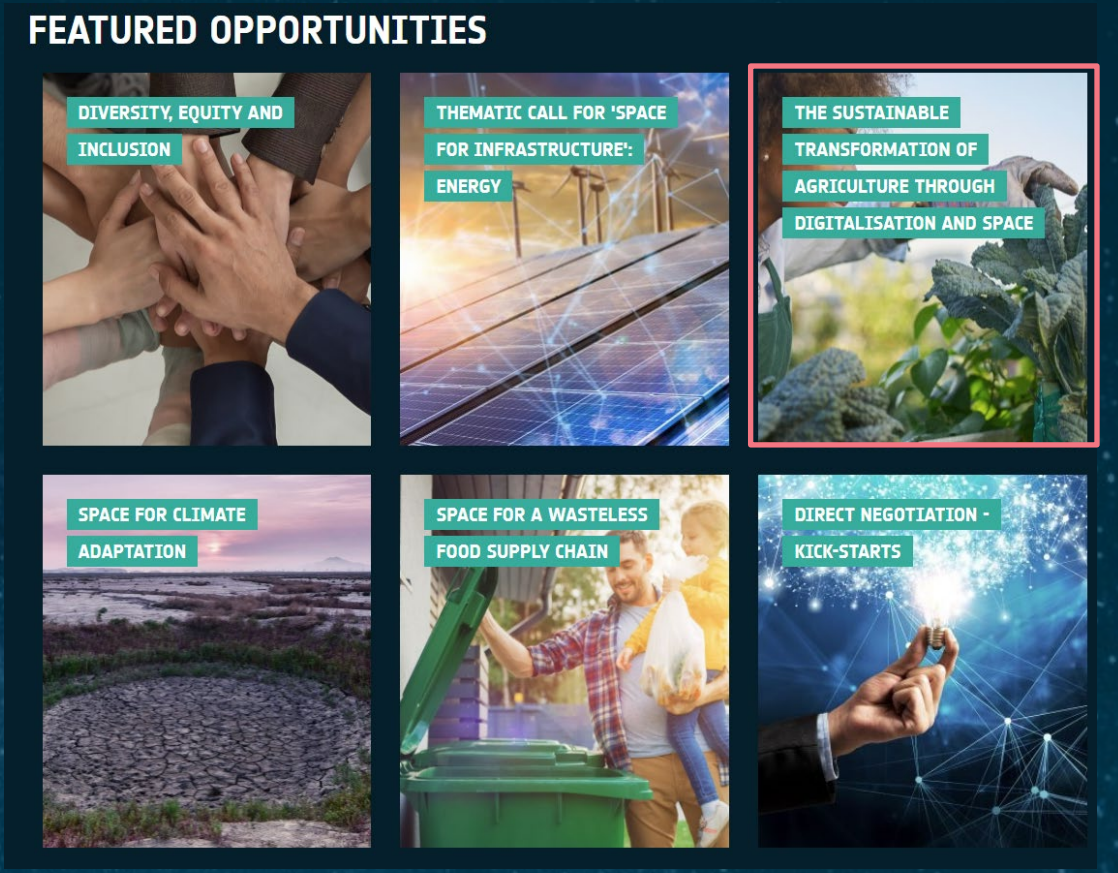
[1]Enterprises fulfilling the criteria defined in the European Commission Recommendation of 6 May 2003 (2003/361/EC) or as updated.
[2]Depending on the funding level authorised by the related National Delegation(s).

Where to find the Details

For more information see: business.esa.int

- Scroll down to the "Featured Opportunities" section to see all activities open or under preparation.
- Open the "Sustainable Transformation of Agriculture through Digitalization and Space" Page.
- Download the two documents: Activity Description and Use Cases.
- Submit your APQ

https://business.esa.int/funding/call-for-proposals-non-competitive/sustainable-transformation-agriculture-through-digitalisation-and-space



Q&A

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For more information visit:

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