

TIP 5. USE CASE TO PROMOTE SPACE-BASED NB-LoT TECHNOLOGIES



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TIP: Use case of technologies for efficient water management as a platform to drive the development and global adoption of space-based NB-LoT technologies from the territory.

Approximate investment: 24M €

Expected economic impact: 39M €

References:

- The global NB-LoT market was valued at USD 4.16 billion in 2023 and is expected to grow at a CAGR of 28.1% from 2024 to 2030.
- This growth is driven by the increasing use of IoT devices across industries, as NB-LoT offers cost efficiency, wide coverage, and low power consumption, making it ideal for smart agriculture, asset tracking, and smart metering.

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Main objective

The main objective of the project is to lead the global adoption of NB-LoT technologies from space based on a use case that increase the degree of connectivity and digitization of irrigation infrastructures at the scale of irrigation communities and plots.

Expected results

To achieve it, the project has the following lines of action:

- Provide data connectivity to the critical infrastructures of the irrigation communities.
- Provide voice connectivity to the technical staff at the service of the communities.
- Provide connectivity and data management systems to control infrastructures (hydrants).
- Implement technology in pilot plots to optimize irrigation water consumption
- Offer technical assistance and training for the use of technology.

Justification

The concept of resilient agriculture has been developed collaboratively since the beginning of the Shared Agenda due to the main challenges that affect this strategic sector in Lleida. As debilities of the sector we can highlight , production structures focused on conventional agro-industrial production and the lack of human capital; at level of threats, the most important, is climate change that directly affects production.

This project is pioneering the adoption of Non-Terrestrial Networks (NTN) by leveraging the use of Narrowband IoT (NB-LoT) from space. This cutting-edge technology provides a unique opportunity to enhance agricultural resilience by enabling real-time data collection and management in areas with limited connectivity. The integration of NB-LoT from space into agricultural practices not only positions the region at the forefront of technological innovation but also opens new business opportunities. Regional companies can lead in creating, developing, and commercializing solutions around this technology on a global scale.

By adopting this technology, the region can address critical challenges in irrigation management and beyond, setting an example for the future of smart, resilient agriculture while driving economic growth through international commercialization of these innovative solutions.

Contribution towards

2035 Goals - AC LLEIDA TERRA D'OPORTUNITATS

Technological adoption in the entire primary sector to optimize productivity and efficiency in the use of resources.

Existing data infrastructures and digital tools for decision making.

Adaptation of crops to climate impacts and food trends.

Attractive sector for youth.

SDG

Directly

Indirectly



Shared vision 2050 - AC LLEIDA TERRA D'OPORTUNITATS

Economic Development: the project has a direct impact on improving efficiency in the use of resources and increasing productivity in the agricultural sector, and indirectly on the development of the technology development sector, which already has a strong representation in the territory, but which can grow very significantly in the coming years.

Sustainability: By promoting an efficient use of a resource as valuable as water.

Education and Workforce Development: by offering technical assistance and training for the use of technology.

Transformative Innovation Ecosystem: the project will foster collaboration between businesses, academia, and technology providers, creating an ecosystem that encourages continuous innovation, supports startups, and speeds up the commercialization of new products and services.

Improved Quality of Life: directly, the project contributions to agricultural resilience and sustainability will have a positive impact on society by improving living standards and reducing inequality.

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