



ARSINOE

MINKA

The citizen science
observatory developed
in ARSINOE



What is MINKA ?

MINKA is a citizen science observatory developed within the ARSINOE project to foster participatory environmental monitoring through user-generated data. Building on the foundations of platforms like Natusfera and iNaturalist, MINKA has been redesigned as a modular and scalable digital infrastructure. It allows citizens to contribute observations on biodiversity and environmental variables, with community-based validation processes that ensure data quality. The platform supports both scientific data collection and local engagement, making it a powerful tool for climate resilience efforts at regional and European scales.

MINKA offers three core services that guide users from data collection to deliberation:



Observe: allows citizens to collect and share biodiversity observations and environmental data.



Analyse: set of tools to visualise results and analyse the data collected, such as dashboards and visual analysis tools.



Deliberate: a forum that will support discussion and collaborative decision-making that will be available in late 2025.

MINKA has been recognised as a UN Acceleration Action for SDGs due to its contributions to SDGs 11, 14, 15, and 17, engaging diverse stakeholders in environmental monitoring and participatory science. It is also part of the EU Mission "Restore Our Ocean and Waters" and has been endorsed as a Decade Action, contributing to the UN Decade of Ocean Science for Sustainable Development (2021-2030) under UNESCO.

MINKA

Objectives

MINKA's primary aim is to be a flexible and robust system for engaging citizens and stakeholders in monitoring climate-related environmental changes. The platform is expanding the scope of existing citizen science observatory platforms by integrating environmental parameters such as air and water quality, temperature, and rainfall, alongside biodiversity observations. Another major objective was to ensure the platform aligns with the Sustainable Development Goals (SDGs), both in terms of thematic focus and open data policy, while adapting to the technical and social needs of ARSINOE's diverse case study regions.



Development status of the platform

As of March 2024, MINKA is making great strides in helping people observe and protect biodiversity. Its tools for recording and sharing nature observations are fully operational and have been successfully deployed in real-world communities in Catalonia (Spain), Athens (Greece), North Portugal and others. There, citizens are actively taking part in collecting data about local wildlife.

At the same time, MINKA is also working on a new feature for monitoring environmental changes, which is still being developed. A second version was tested in the field in March 2024.

MINKA stands out for its easy-to-use design, a unique way of organising nature information through visuals, and a system that supports data collection and analysis. The data collected in MINKA are open and accessible, complying with the FAIR philosophy (from the acronym in English Findable, Accessible, Interoperable and Reusable), which allows the data to be analysed and used in studies, maintaining transparency and traceability of the information sources. Also, MINKA operates as an open and collaborative citizen science platform, ensuring ethical data sharing and responsible participation.



Use in ARSINOE Case Studies

MINKA is being progressively integrated into several ARSINOE case studies. In Case Study #1 (Athens), it is already being used to support community observation campaigns linked to nature-based solutions and urban greening strategies. In Case Study #9 (Sardinia), initial testing of the environmental variable reporting feature has been carried out in partnership with local institutions. In Case Study #4 (Ohrid/Prespa lakes), initial testing with schools were performed as a BioBlitzs to collect biodiversity observations in rural areas. These deployments help to tailor the platform to specific geographic and socio-political contexts while also testing its capacity to generate high-quality data for resilience planning.



Advancements and Achievements

Throughout the ARSINOE project, MINKA has evolved into an advanced and user-friendly tool for nature observation. It now comes in two forms: a feature-rich website and a mobile app designed for easy data entry while out in the field.

The platform's design has been thoughtfully improved, with clearer notifications, support for multiple languages, and unique icon-based profiles that help users record what they see in nature. Users also have more control over their privacy settings.

One of MINKA's unique features is its community-based approach to validating data—people can help review each other's observations, and once confirmed, the data earns "Research Grade" status, making it valuable for science.

Behind the scenes, the team has built a strong foundation to ensure everything runs smoothly and updates are delivered quickly and reliably.



Challenges and next steps

While MINKA's developments have been progressing, there are still a few hurdles to overcome. Adding tools to track environmental changes brings new challenges, especially when it comes to making the platform easy to use and ensuring the data is reliable. The team is working hard to make these features stable and user-friendly, with help from people testing the system in real-world settings.

Another important goal is to better connect MINKA with other digital tools used in the ARSINOE project, like virtual models that support environmental planning. This would make it easier to turn citizen-collected data into useful insights for decision-makers

Artificial intelligence (AI) is being progressively implemented in MINKA to support users in the identification process and enhance data quality. For plant observations, MINKA will integrate Pl@ntNet AI, a widely used image recognition tool that suggests potential species matches based on photographs. In parallel, tailored AI models are being developed for marine biodiversity to address the specific challenges of underwater species recognition. These tools will offer users intelligent suggestions to assist in selecting the correct taxonomic identification, making the platform more accessible for non-experts while ensuring scientific reliability. The integration of these AI features is expected to be completed before the conclusion of the ARSINOE project.

Looking ahead, the team is also exploring how to keep MINKA going in the long term, even after the project ends. MINKA has secure funding until 2029, through new partnerships and funding options, but the team keeps exploring new ways to support its continued growth.



Conclusion

MINKA has emerged from ARSINOE as a technically mature, user-friendly, and scientifically valuable citizen observatory. While its biodiversity module is already in operational use, the environmental component is nearing final validation. The platform's adaptability, modular design, and commitment to open standards position it as a key resource for participatory environmental monitoring in Europe. As development continues, MINKA is expected to play an increasingly important role in linking communities, researchers, and policymakers in collective efforts to build climate resilience.



To find more about the ARSINOE Land Surface Response Tools, read our corresponding deliverable D3.11: [HERE](#).

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